A Model of Communication Context and Measure of Context Dependence[1][2]

Wendi L. Adair (corresponding author)
University of Waterloo
200 University Avenue West
Waterloo, Ontario
N2L 3G1 Canada
Tel: 519-888-4567 ext. 38143
wladair@uwaterloo.ca

Nancy R. Buchan
Sonoco International Business Department
Moore School of Business
University of South Carolina
nancy.buchan@moore.sc.edu

Xiao-Ping Chen
Department of Management and Organization
Michael G. Foster School of Business
University of Washington
Seattle, WA 98195
xpchen@u.washington.edu

Dong Liu
Scheller School of Business
Georgia Institute of Technology
Tel: 404-894-4925
dong.liu@scheller.gatech.edu

---

[1] The four authors contributed equally to this article. This research developed out of collaboration initiated through the Duke University CIBER and Richard Lewis Communications. Data collection was supported by participation from CIBER member schools, financial resources from the Duke University CIBER, the Canadian Social Sciences and Humanities Research Council, and the University of South Carolina. We thank Professor Arie Lewin and Mr. Richard Lewis for their ongoing support and feedback and Jeff Russell, Stephanie Mcadoo, and Maly Sibounheuang for their logistical support. We would like to acknowledge the support from the grant of the National Natural Science Foundation of China (71272104).

[2] This is the pre-published version of the paper: Adair, W. L., Buchan, N. R., Chen, X. P., & Liu, D. (2016). A model of communication context and measure of context dependence. *Academy of Management Discoveries, 2*(2), 198-217.

Available with video and audio content on-line at:
https://journals.aom.org/doi/abs/10.5465/amd.2014.0018

A Model of Communication Context and Measure of Context Dependence

Abstract

In this research we conceptualize the construct of communication context as the multiplicity of nonverbal, relational, spatial, and temporal cues that can be drawn upon to convey and understand meaning. We hypothesize and demonstrate a valid four-component measure of context dependence as well as individual variation in context dependence associated with (a) individual self-construal, and (b) individual cultural intelligence. Our data reveal that individuals with a stronger interdependent self-construal are more likely to pay attention to and rely on all forms of communication context to convey meaning. Our findings also show that individuals who are more highly context dependent communicators have higher cultural intelligence. From a global workforce perspective, we discuss the theoretical and empirical implications of these findings for understanding the processes and outcomes of communication among organizational members.

Effective communication is essential to the success of global business because it enables people to convey meaning and establish understanding through information exchange (Beamer & Varner, 2008). The foremost hurdle to effective cross-cultural communication is the need to understand the role of context: "context has to do with how much you have to know before effective communication can occur, how much shared knowledge is taken for granted by those in conversation with each other, and how much reference there is to tacit common ground" (Trompenaars & Hampden-Turner, 2012: 111). Because context is related to the unspoken, unformulated, implicit rules governing how information is handled and how people interact and relate, these rules are often deeply embedded in culture at an aggregate level, in the collective's commonly shared values and norms (Hall, 1976; Triandis, 1972).

The less common knowledge and tacit common ground people share, the more likely their communication will be context-free. Context-free communication relies on explicit messaging to convey meaning and establish understanding. This is often labeled as "low context communication" (Hall, 1976). On the other hand, the more shared knowledge and tacit common ground there are between interlocutors, the more their communication is context-dependent. In such a case, meaning and understanding rely less on explicit verbal messages and depend more on implicit communication contained in contextual cues such as eye contact, body movement, use of silence, the physical and temporal setting of the interaction, and the relationship between the interlocutors. This communication form is labeled high context communication (Hall, 1976). The ability to understand the role of context in business communication is crucial to convey and interpret meaning accurately and effectively because the same contextual cues may be attended to differently and may imply different meanings for individuals who grew up in different cultures (Hall, 1960). For example, the use of silence by a Japanese person in a conversation can impart

five different meanings (Lebra, 1987) depending on the context of the discussion. For a typical Anglo-Saxon American more accustomed to low context communication however, discerning what meaning is intended by the silence of their Japanese counterpart will be a near impossible task. Similarly, what is considered "on time" or "late" for a meeting is highly variable across cultural contexts and one's time of arrival to a business meeting may be an unintended cause for offense for the other depending on how the temporal cue is interpreted. Addressing fellow employees, even superiors, by first name may be the norm in Scandinavian cultures, but the omission of titles when addressing others (particularly in initial meetings), would be an egregious sign of disrespect to the senior person in the relationship in many other parts of the world.

Interestingly, while the concept of communication context has been popularized by Hall and colleagues (e.g., Hall, 1959, 1976; Hall & Hall, 1990) and much studied by other researchers (e.g., Gudykunst, Matsumoto, Ting-Toomey, Nishida, Kim, & Heyman, 1996; Holtgraves, 1995; Singelis & Brown 1995), there has not been sufficient work in identifying fully what constitutes context or how to measure individuals' context dependence systematically in order to allow empirical tests of the relationship between context dependence and relevant outcomes (Kittler, Rygl, & Mackinnon, 2011). After reviewing the voluminous literature on communication context, we conclude that the existing theory in essence does not adequately address what comprises context or how individuals may be distinguished from one another by understanding the contextual cues relied upon in communication. For example, although empirical research suggests that attention to context may vary by individual (e.g., Gudykunst et al., 1996), we lack an understanding of why the variance occurs or the implications of such variance. Therefore, in this research we first thoroughly define, examine, and explain the construct of communication

context and identify the multiplicity of cues that can be drawn upon to convey and understand meaning. Next, we define the construct context dependence that captures the degree to which an individual relies on and attends to communication context. We explore the construct of interdependent self-construal in explaining why some individuals rely more on contextual cues than others in conveying and interpreting meaning. Furthermore, to verify the criterion validity of context dependence, we investigate its potential relationship with individual cultural intelligence (CQ)—defined as the capabilities necessary to function and manage effectively in culturally diverse settings (Earley & Ang, 2003). We will present data that validate our conceptualization of the four-component context dependence construct. We also provide initial empirical evidence from multisource and time-lagged data to test our model and discuss managerial implications for effective cross-cultural communication in global business and the multicultural workplace.

THEORY AND HYPOTHESES

Anthropologist Edward Hall stated that, "without context, the (linguistic) code is incomplete since it encompasses only part of the message" (1976: 86). He noted that communication occurs through many channels in the interaction context, and one way to understand culture is to examine the different ways that people attend to and rely on these many contextual cues when communicating and interacting with others. Despite Hall's multifaceted discussion of context over the course of many decades (1959, 1966, 1976, 1989; Hall & Hall, 1990), the overwhelming majority of empirical research has tended to focus on only one element of context, that is, the directness and explicitness of the message (see Adair, Buchan, & Chen, [2009] for a discussion of coverage of Hall in the academic management literature). Based on his observational research, Hall (1976) suggested that people in Western cultures, for example North

Americans or Western Europeans, convey *messages* directly in words, whereas people in Eastern cultures, for example Japan or China, rely on more complex and subtle styles of communication that use metaphor, nonverbal communication, precedent, and status to convey information in a message (Hall, 1959, 1976). Yet, importantly, Hall (1959, 1966, 1976, 1989; Hall & Hall, 1990) noted that perspectives on *interpersonal relationships*, *space*, and *time* also reflect the influence of culture on communication and are expressions of a "silent language" that impacts both the manner and content of what is conveyed. Thus, a full understanding of communication context requires consideration of all four components–*message*, *relationship*, *space*, and *time*– and a comprehension of what constitutes each one. Although Hall clearly linked cultural context to communication, he neither fully fleshed out the content of the contextual components nor measured them. The current research conceptualizes the construct of communication context as the multiplicity of nonverbal, relational, spatial, and temporal cues that can be drawn upon to convey and understand meaning.

The Four Components of Communication Context

The message context. The message context refers to the indirectness and implicitness of the message itself. We define message context as the cues that convey implied and inferred meaning accompanying a verbal message in communication. People who communicate directly rely mostly on the explicit coded spoken or written message, rather than on nonverbal cues in their environmental context to convey meaning. In contrast, indirect and implicit messages contain information hidden in the socio-cultural system (Triandis, 1972) and in internal context–information contained within the individual, for example, in nonverbal cues or in the life experience one brings to a social interaction (Hall 1976). In indirect and implicit communication, listeners must take an active role in searching for and inferring their counterpart's meanings and

feelings; in direct communication, which is less ambiguous, such active participation by the listener in searching out the meaning is not necessary.

Misunderstandings between indirect/implicit communicators and direct/explicit ones can have serious implications for the success of cross-cultural business interactions. For example, a representative of a Canadian mobile phone accessory company was finishing up negotiations with a Chinese manufacturer over the purchase of 10,000 accessory sets, when he mentioned one final detail; all product labeling was required to be in English and French. This news caused the Chinese Managing Director concern as his company lacked French-language expertise and could only work with Chinese and English, but he did not want to admit this to the buyer. The Chinese Managing Director replied with a smile, "I am afraid that supplying labels in French and English will be a bit difficult," and continued, "This question will require further study." The Canadian manager politely repeated that bilingual French/English labels were required by Canadian import regulations. His counterpart replied with a smile: "We will give your request serious consideration. It will be quite difficult. We will do our best to solve the problem." Relieved to have settled this final detail, the Canadian manager signed the contract and returned home to Canada. Three months later the 10,000 sets arrived from China with bilingual labels in English and Chinese.

The events in this case were real as was the consequence and cost of having to remove and replace the labels of 10,000 sets as well as the damage to the reputations of the people involved (Gesteland, 1999). The Canadian manager was unaware of the unstated and implicit cultural communication norms in China – that essentially, he had been told "no" several times - and as result, paid a heavy price for what he thought was a successful negotiation.

The relationship context. We define relationship context as the cues relating to the meaning associated with the nature of a relationship between two interlocutors. Relationship context includes parties' background such as relative status or the extent to which the parties compartmentalize their personal relationships from their work relationships, i.e. the specific versus diffuse involvement in relationships (Trompenaars & Hampden-Turner, 2012). The relationship context also influences the degree to which face-saving measures will be employed in communication. Cohen writes that in high context cultures, "language is a social instrument – a device for preserving and promoting social interests as much as a means for transmitting information" (1997: 32). Thus face-saving or relationship-maintaining communication is more likely to be manifested in high context cultures. In contrast, in low context cultures language "performs on the whole an informational rather than socially lubricative function" (1991: 33).

The relationship context too can have critical implications for cross-cultural interactions. Returning to the case of "Bilingual Labels" above, one might ask, why didn't the Chinese manager say "no" directly? To say "no" to the Canadian customer would have brought shame to the Chinese manager and his company by forcing him to admit his inability to manufacture the labels; such admission would cause the Chinese manager to lose face. In forcing the issue, and causing the Chinese manager to lose face, the Canadian buyer would also lose face, and the negotiation and relationship between the two men would have suffered a major setback.

The spatial context. Hall (1966) originated the field of proxemics, the study of the spatial context in communication, and suggested that spatial cues play a key role in influencing the transmission and understanding of meaning in communication. Most obvious are cues within the physical environment, such as the positions of and distance between communicators that convey meaning. Yet, according to Hall, "few people realize that space is perceived by all the senses, not

by vision alone. Auditory space is perceived by the ears, thermal space by the skin, kinesthetic space by the muscles, and olfactory space by the nose" (Hall & Hall, 1990: 11). As such, in addition to physical distance or boundaries, factors such as verbal exaggeration, speed of speech, facial expression, and gestures also come into play in the spatial context, and the use of such cues to communicate may differ across individuals and cultures (Cohen, 1997; Hall, 1966). For example, Matsumoto's work on emotional display rules demonstrates aggregate culture-level variation in the use of spatial cues in communication. According to Matsumoto (1996), Japan's display rules are highly reserved, leading to restricted body posture, the use of silence and muting facial expression to preserve social harmony. Conversely, in Mexico the display rules regarding simpatia, the striving for harmony in personal relations (Triandis, Marin, Lisansky, & Betancourt, 1984), call for physical closeness and dramatic expression during conversation.

The temporal context. Hall (1976; 1989) suggests that the way people attend to time and move through time is part of how they communicate and interact with others. We define temporal context as cues within a communication environment that convey meaning associated with interlocutors' understanding of time. The temporal context reflects variation in pace of life, time horizons, temporal focus, and simultaneous versus sequential task involvement (Bluedorn, 2002; Brislin & Kim, 2003; Brislin & Lo, 2006; MacDuff, 2006). There are two major views of time in the literature: polychronic and monochronic (Bluedorn & Denhardt, 1988; Hall, 1966; Kaufman-Scarborough & Lindquist, 1999). The polychronic view sees time as fluid, and punctuality and deadlines as artificial man-made constraints relative to the reality and organic nature of human relationships. For the polychronic individual, catching up with an old friend they have run into on the way to their office is much more important than arriving "on time" for a meeting with a new associate. The monochronic view of time on the other hand considers time

in a serial fashion, which is reflected in a segmented and sequential approach to schedules and deadlines. Based on this view, time is more akin to a commodity that can be measured, saved, spent, invested, or lost. For the monochronic person, arriving late or allowing constant interruptions–phone calls, messages, or extraneous people–in a business meeting are interpreted as rudeness (Gesteland, 1999; Hall & Hall, 1990).

The above discussion suggests that communication context consists of four components. We therefore propose

Hypothesis 1: Communication Context will comprise four components: message context, relationship context, space context, and time context.

Individual Self-construal and Reliance on Communication Context

In this section we explore individual factors that explain variation in context dependence, defined as the degree to which one relies on and attends to the four components of communication context. As noted above, the roots of context dependence lay in the work of Hall who noted that cultural systems socialize group members to rely on context in communication to differing degrees (Hall, 1959, 1976). Over time, our communication patterns become habitual and automatic, leading to trait-like communication styles that tend to be shared by individuals within a culture group. Like contextualized personality, context dependence is an individual difference that may exhibit within-person variation over time or across situations and roles (Heller, Komar, & Lee, 2007). However, in general, context dependence is a fairly stable individual trait that characterizes how an individual uses context in communication.

Much empirical research suggests that individual cognition, motivation, and even the manner in which people communicate is highly related to how people view themselves and their relationships with others, i.e., self-construal (e.g., Gudykunst et al., 1996; Holtgraves, 1997;

Markus & Kitayama, 1991; Singelis & Brown, 1995). The theory of self-construal suggests that people with a strong independent self-construal are likely to think of themselves as autonomous and independent, and organize their behavior in reference to their own internal repertoire of thoughts, feelings, and actions rather than by reference to those of other people. By contrast, for individuals with an interdependent self-construal, "one's thoughts, feelings, and actions are made meaningful only in reference to the thoughts, feelings, and actions of others in the relationship, and consequently others are crucially important in the very definition of the self" (Markus & Kitayama, 1994: 570). Self-construal is the core individual cultural difference we use to predict tendencies for context-dependent versus context-free communication with respect to cues in the spoken message, interlocutors' relationship, physical space, and the temporal environment.

Research has demonstrated striking differences in cognition and motivation between people having a dominant independent versus interdependent self-construal. Specifically, an interdependent self-construal leads people to be more attentive and sensitive to others than an independent self-construal (Cross, Bacon, & Morris, 2000). The way such individuals process, organize, and retrieve knowledge about the self and others is also likely to include a relatively specific social context in which the self and others are embedded (Markus & Kitayama, 1991; Singelis & Brown, 1995). For the interdependent self-construal, maintaining one's relationships with in-group members and ensuring a harmonious social interaction require a full understanding of others. As a result, individuals with a strong interdependent self-construal express and experience more of those motives that are social or that have others as referents, such as deference (the need to admire and willingly follow a superior), similance (the need to imitate or emulate others, to agree and believe), affiliation (the need to form friendships and associations), nurturance (the need to nourish, aid, or protect another), and so on (Cross, Hardin, & Gercek-

Swing, 2011; Markus & Kitayama, 1991; Singelis & Brown, 1995). Because of the different emphases on self versus others, variation in the strength of independent and interdependent self-construal may be manifested in different communication styles. Specifically, for more independently minded individuals, a more self-centered approach will be adopted in communication such that they will be less attuned to and rely little on contextual cues to convey meaning. Conversely, for individuals with a strong interdependent self-construal, an other-centered approach will be adopted; they are likely to be context dependent/sensitive in communication, by paying much attention to communication context to convey and understand meaning (Singelis & Brown, 1995).

While communication researchers have previously identified self-construal as a core underlying psychological mechanism for communication indirectness (Holtgraves, 1997), communication directness (Kim & Wilson, 1994), attention to the relational context surrounding a script (Singelis & Brown, 1995), or low versus high context communication preferences very broadly defined (Gudykunst et al., 1996), researchers have not yet examined specifically how self-construal influences the ways people attend to and use context when communicating with others. Accordingly, we take a more nuanced view of communication context by defining four contexts in communication and explaining individual variation in attention to the four contexts through the construct of self-construal. In other words, rather than using self-construal to guide our conceptualization of communication context, we first conceptualize communication context by referring to and expanding upon Hall's original works; we then hypothesize how self-construal will be related to individuals' context dependence, defined as their attention to and reliance on these different components of context when communicating.

Further, we propose that it is primarily the interdependent self-construal that will account for variation in context dependence. As noted above and elaborated below, prior research relating self-construal to communication norms has typically taken a comparative approach, predicting differences between independent and interdependent selves. We take an alternate approach for two reasons. First, because independent and interdependent self-construals are orthogonal constructs (Cross et al., 2000), the appropriate methodological approach is to compare low versus high levels within each self-construal. Second, because the independent self is self-focused, it promotes directness with little variation in communication style regardless of the context. While contextual cues may not matter much for the independent self, the interdependent self is highly attuned to context and the multitude of cues that may be part of communication. Thus, we expect variation in context dependence along with variation in the interdependent self: those with a stronger interdependent self will attend to and rely on context more than those with a weaker interdependent self. Following a similar logic, Lam and colleagues (2002) offered predictions about participative decision-making and workplace outcomes based on employees' low versus high levels of allocentrism, not comparing allocentrics to idiocentrics. Below, we review prior self-construal research related to each context component and offer predictions for context dependence based on levels of interdependence.

Self-construal and message context. Gudykunst and colleagues (1996) argue that the cultural tendency toward indirectness and implicitness in communication is influenced by how people view themselves and their relationship with others. Holtgraves (1997) points out that directness/indirectness is the behavioral enactment of independent or interdependent self-construal in the domain of communication. He found that interdependence predicted preferences

for indirect communication while independence predicted preferences for direct communication. Triandis (1989) suggests that individuals with a strong interdependent self-construal have a need to maintain harmony with others and therefore will use more indirect, implicit messages whereas those with a strong independent self-construal are more self-centered and therefore will use more explicit, direct communication including assertive persuasion and argument, even though it might offend. Accordingly, relative to those with a dominant independent self-construal, people with a dominant interdependent self-construal have been found to pay more attention to their listeners' knowledge as well as to the common ground in conversation (Haberstroh, Oyserman, Schwarz, Kuhnen, & Ji, 2002). Ting-Toomey (1997) proposes that independent selves tend to value the clarity constraint in communication. Since clarity constraints call for explicit and clear communication to facilitate communication goals and task accomplishment (Kim & Wilson, 1994), those who have a strong independent self-construal are more likely to be direct communicators (Hall, 1989).

Because the interdependent self-construal is associated with attention to common ground and implicit messaging, we propose the following hypothesis:

Hypothesis 2: Compared to those with a lower interdependent self-construal, people with a higher interdependent self-construal are more likely to pay attention to and rely on the message context in communication.

Self-construal and relationship context. The relationship context is influenced by the degree to which concern for others or relational harmony is salient in how one communicates. As discussed, although for some people language is "a means for transmitting information" (Cohen, 1997: 32), for those who have high concern for others, it can also "perform on the whole a socially lubricative function" (Cohen, 1997: 33).

Hence, an individual's self-construal is central to the degree to which one attends to the relationship context. As noted above, the independent self-construal motivates one to view oneself as a unique entity, make clear distinctions between self and others, and emphasize self-reliance and self-responsibility. Consequently, individuals with a strong independent self-construal are less likely to pay attention to the relational component or adjust their communication based on the relational context. On the other hand, the interdependent self-construal prompts people to consider themselves inseparable from others and emphasize fitting in with the group and harmony with others. Thus, individuals with a strong interdependent self-construal will be highly attuned to the relationship context in communication, for example, displaying concern for face saving and avoiding conflict, paying attention to the setting of the interaction (work versus social), exhibiting humility through their communication (e.g., using qualified language such as maybe, perhaps etc.) to avoid hurting or offending others, and being alert to status differences between interlocutors. Because the interdependent self-construal regulates attention to relationships and group harmony, we propose:

Hypothesis 3: Compared to those with a lower interdependent self-construal, people with a higher interdependent self-construal are more likely to rely on the relationship context in communication.

Self-construal and spatial context. Cultural differences in how people use space and pay attention to spatial cues when communicating are also related to individual self-construal. Specifically, people with a strong interdependent self-construal tend to have a holistic approach in information processing whereas people with a strong independent self-construal tend to use an analytical approach in information processing (Masuda & Nisbett, 2001). Holistic processors are more likely to attend to and use spatial cues in their environment when communicating than

analytical processors, who attend primarily to focal objects and not the space around them (Nisbett, Peng, Choi, & Norenzayan, 2001). For example, Nisbett and colleagues (2001) found that East Asians (who display a strong interdependent self-construal) engage in more holistic, field dependent thinking than North Americans (who display a strong independent self-construal). When presented with a picture of an aquarium, East Asians were more likely to perceive and attend to the relational space between objects, such as those in the background versus those in the foreground, than North Americans who tended to focus on the most visually prominent fish in the tank (Masuda & Nisbett, 2001). The holistic perception and processing tendencies that are associated with an interdependent self-construal are likely related to the amount of attention to spatial context in communication. We therefore propose:

Hypothesis 4: Compared to those with a lower interdependent self-construal, people with a higher interdependent self-construal are more likely to rely on the spatial context in communication.

Self-construal and temporal context. We suggest that self-construal is related to how much attention is paid to the time context in communication because of variation in the focus on relationships with others (Markus & Kitayama, 1991). Interdependent selves are more likely to hold a polychronic view of time: i.e., maintaining harmony in relationships takes precedence over deadlines (c.f., Triandis, 1995). Thus, they won't be hurried along in a meeting with colleagues simply to meet a man-made clock-time deadline. On the other hand, independent selves are more concerned with task completion than relationship maintenance (Triandis, 1994), and consider punctuality and meeting deadlines their priority. Therefore, they are more likely to be monochronic, which translates to a focus on deadlines and doing things according to a clock-time schedule.

Self-construal is related to the temporal context also because of the analytical/holistic information processing noted above. Analytical processors (highly related to the independent self-construal) are more likely to pay attention to one focal task, while holistic processors (highly related to the interdependent self-construal) are more likely to pay attention to multiple tasks occurring in the fore- and back-ground (Nisbett et al., 2001). Indeed, Bluedorn and Standifer (2004) suggested that the long-term, polychronic view of time is akin to standing back from a painting so one can see the big picture. Thus, both the relationship focus and the holistic event-time processing characteristic of the interdependent self lead us to propose:

> *Hypothesis 5: Compared to those with a lower interdependent self-construal, people with a higher interdependent self-construal are more likely to use the temporal context in communication.*

Communication Context and Cultural Intelligence

Besides the importance of understanding the construct of communication context in relation to individual self-construal, another reason we study communication context is to understand how it might influence the effectiveness of an individual's social interaction in cross-cultural settings. Cultural intelligence (CQ) is a person's capability to function effectively in situations characterized by cultural diversity (Ang, Van Dyne, & Koh, 2005; Earley & Ang, 2003; Earley & Mosakowski, 2005). This capability manifests itself in an individual's cognition, motivation, and behavior regarding culturally related matters. Cognitively, a person with higher CQ places more significance in learning about other cultures and has more knowledge and deeper understanding of other cultures than a person with lower CQ. Motivationally, a more culturally intelligent person is more willing and eager to interact or work with people from different cultures than someone less culturally intelligent. Furthermore, more culturally

intelligent people are more likely to adjust their own verbal and non-verbal behavior to mimic or observe the culturally normative behavior of those from other cultures. A growing body of research has demonstrated that CQ influences individual outcomes such as cultural adaptation, cultural judgment and decision making, cross-cultural task performance, trust and shared values in multi-cultural teams, and joint gains in intercultural negotiation dyads (Adair, Hideg, & Spence, 2013; Ang et. al, 2007; Imai & Gelfand, 2010; Rockstuhl & Ng, 2008; Templer, Tay, & Chandrasekar, 2006).

As CQ is partly manifested through the adjustments individuals make when encountering or interacting with those who come from different cultural settings and/or adopting different communication and social interaction styles, we conjecture that people who pay more attention to cues in the communication context, i.e., context-dependent communicators, will have higher cultural intelligence than people who are more context-free communicators. We suggest this because strong context–dependent communicators have the imperative to search for cues on which they can rely to transmit and interpret messages, and thus will likely be more motivated to learn about cultural differences when interacting with people outside of their own culture.

Specifically, as the message context contains both the content of the message and the delivery of the message, to enable oneself to understand the meaning beyond the content, one needs to pay close attention to what is not said (e.g., the message context) as well as how the message is delivered. The remaining three contexts, i.e., the relationship context, the space context, and the temporal context surrounding the message may convey more than 60% of the meaning of the communication (e.g., Birdwhistell, 1955; Burgoon, Buller, & Woodall, 1996). People relying on the relationship context in communication are likely to learn about the interlocutor's personal, professional, and cultural background before engaging in conversation so

that they can show appropriate respect in terms of how to address the interlocutor, what demeanor/mannerism is desirable regarding the nature of relationship between them, etc. Along the same lines, people who rely on the space context in communication will pay close attention to the physical distance, the use of facial expressions and body movement, and the pitch/tone/voice so that they can adapt to these spatial cues to ensure the comfortableness of the interlocutor and an accurate transmission of meaning. In addition, people using the time context in communication will study the meaning of the temporal cues in their conversation partners' culture (e.g., how late is considered showing disrespect) before communication in order to understand and present these cues to ensure effective communication.

It is therefore conceivable that we call those who use more contextual cues more context dependent. That is, people relying on all types of contextual cues are more context dependent than those relying mostly on relationship cues but not much on spatial or temporal cues in communication. More context dependent communicators will be more likely to direct and sustain their energy to understand when, how, and how much to adapt their behavior to, and communicate with, culturally diverse people. In contrast, for less context dependent communicators, the coded explicit message itself is the key in communication; there is little need to use contextual cues to convey messages or to pay attention to implicit cues to understand them. Instead, they are likely to focus on the self, using explicit language (verbal or written) to express meaning, and will attend to what others explicitly say or write, i.e., the content of the message itself, to understand meaning. As a result, they are not as motivated as the context-dependent communicators to learn about contextual cues as context is essentially irrelevant to them. Therefore, individuals who rely more on contextual cues in communication will have

higher levels of CQ than do those relying less on contextual cues in communication. We propose the following hypothesis:

Hypothesis 6: People relying more on contextual cues (message, relationship, spatial, temporal) in communication will be more culturally intelligent than people relying less on contextual cues in communication.

STUDY 1: SCALE DEVELOPMENT AND VALIDATION

Following widely accepted practices in scale development and validation (Ang et al., 2007; DeVellis, 1991; Hinkin, 1995, 1998) we developed and validated our context dependence scale, including subscales for message, relationship, spatial, and temporal contexts over several iterations and separate data collections.

Item Generation

Our first step was to generate items to measure context dependence. This step involved searching for existing related scales including Holtgraves's (1997) indirectness scale, Gudykunst et al.'s (1996) communication style scale, Thomas and Kilman's (1974) conflict scale, Lewis's (2006) linear-multi-reactive culture sale, Bluedorn, Kalliath, Strube, and Martin's (1999) monochronic/polychronic orientation scale, Reardon and Miller's (2012) context scale, Yamagishi and Yamagishi's trust scale (1994), etc. It also involved in-depth literature reviews on related topics (e.g., communication and cross-cultural management) as well as consulting with communication researchers and consultants. Across multiple data collections, we asked participants to rate the degree to which they rely on and attend to cues in the message, relationship, time, and space context when communicating with others. We reduced and refined

items to enhance their clarity and consistency with corresponding context components, ultimately generating a reliable pool of 94 items[2].

In response to feedback from management educators and consultants, we then proceeded to refine items further to develop a more concise four-component communication context dependence scale. In developing their CQ measure, Ang et al. (2007) underscored the importance of "a parsimonious scale with four to six items for each CQ dimension to minimize response bias caused by boredom and fatigue (Schmitt and Stults, 1985) while providing adequate internal consistency and reliability." We followed Ang et al. (2007) and Hinkin (1998), and invited a panel of five management scholars and five business executives of different cultural heritage who had international research or work experience to read the definitions of the four components of communication context and then to assess the 94 items in terms of definitional fidelity on a 7-point scale (1 = very low quality; 7 = very high quality). They were also encouraged to provide additional feedback on improving the wording of the items to better reflect the meaning of communication context. According to their comments and assessments, we retained the 38 most highly rated items as the basis from which to develop a concise four-component context dependence scale.

Item Validation

We collected data from a sample of 612 American working adults (average age = 44.51 with SD = 13.78, 48% female) through Amazon mechanical turk (MTurk) for an exploratory factor analysis (EFA) of the 38 retained items. Researchers' investigation into MTurk as a data collection source for psychological and social science studies show that "the data obtained are at least as reliable as those obtained via traditional methods" and "MTurk can be used to obtain

[2] Details on the iterative data collections, scale validation, factor structure, and subscale items for the 94-item communication context scale in English, Mandarin, and Spanish are available from the authors.

high-quality data inexpensively and rapidly" (Buhrmester, Kwang, & Gosling, 2011: 3). After removing 17 items with low factor loadings (below 0.40) or serious cross-loadings (above 0.40), the EFA generated a four-component, 21-item measure of communication context (see Table 1).

The context dependence measure in Table 1 includes 21 items measuring reliance on and attention to the message context (4 items, $\alpha = .90$, sample item: I catch onto what others are saying even if they do not say it directly), the relationship context (6 items, $\alpha = .76$, sample item: My communication style is very different depending on whether I am interacting with colleagues at work or in a social setting), the space context (6 items, $\alpha = .82$, sample item: When talking with someone, I like to be close enough to them so that I could easily touch them), and the time context (5 items, $\alpha = .81$, sample item: If a meeting with a counterpart is scheduled to start at 9am, we start the meeting at exactly 9am (Rev)). Note that each scale is scored in such a way that a high value indicates greater context dependence (message: implicit non-word cues; relationship: status & relationship cues; space: physical and sensory cues; temporal: event-time cues).

------ Insert Table 1 about here -----

We then used a separate sample of 211 American part-time MBA students (average age = 46.31 with SD = 12.88, 49% female) to conduct a series of confirmatory factor analysis (CFA) using LISREL 8.80. An excellent fit was found for the four-factor model with four randomly created parcels loading significantly onto each factor (CFI = .99, NNFI = .99, RMSEA = .05, χ^2 = 151.65, d.f. = 98). We also ran a second-order CFA and found that the same parcels continued to load significantly onto the four factors, which in turn loaded significantly onto communication context as the higher-order factor with good fit indices: CFI = .99. NNFI = .98, RMSEA = .07, χ^2 = 210.25, d.f. = 101. Alternative models formed by setting the correlation between factors at 1 or

combining factors showed that they fit the data significantly worse: e.g., a four-factor model with the correlation between message and relationship set to be 1 (CFI = .97, NNFI = .96, RMSEA = .11, χ^2 = 342.35, d.f. = 99) and a one-factor model formed by combining all the four factors (CFI = .78, NNFI = .75, RMSEA = .28, χ^2 = 1149.04, d.f. = 104). These results suggest that communication context consists of four distinct components, and provide strong support for Hypothesis 1.

To test the discriminant validity of this new measure, we also ran a series of CFAs with context dependence items and Reardon and Miller's (2012) four context items. Distinct from our four-component conceptualization of context dependence, Reardon and Miller's (2012) four-item measure taps into the extent to which people engage in explicit and direct communication: i.e., "tend to communicate in a very explicit language, say what we mean and mean what we say, leave little room for interpretation of what we say, and express our ideas in very precise terms" (Reardon & Miller, 2012: 32). Therefore, the items focus on the "message" delivered in communication and do not cover the relationship, space, and time dimensions in communication context. Moreover, theoretically, even the message dimension of our context dependence measure that gauges the extent to which people are able to *infer meanings and feelings* during communication is distinct from Reardon and Miller's (2012) measure that looks at people's *engagement in explicit and direct communication*. We also found empirical evidence that suggests the two constructs are distinct. A more parsimonious five-factor CFA that correlates the message component of our measure and Reardon and Miller's (2012) measure at 1 produced worse fit indices (CFI = .90, NNFI = .89, RMSEA = .30, $\Delta\chi^2$ = 705.78, Δ d.f. = 1, $p < .01$) than a five-factor CFA with the four components of our context dependence measure and Reardon and Miller's (2012) measure (CFI =.93, NNFI =.91, RMSEA =.27, χ^2 = 2535.93, d.f. = 160). These

results suggest that our measure is both theoretically and empirically distinct from the Reardon and Miller (2012) measure of context.

Using the data from Study 2 described below, we assessed convergent validity of context dependence by examining correlations between the four components of context dependence and CQ. People with higher CQ should be better at adapting themselves to the verbal and non-verbal cues of others (Ang et al., 2007). Thus, the four components of context dependence should be significantly correlated with CQ. As expected, Table 2 shows that all the four components of context dependence were significantly correlated with CQ (message: r = .24, $p < 0.01$; relationship: r = .41, $p < 0.01$; space: r = .29, $p < 0.01$; time: r = .28, $p < 0.01$). As such, convergent validity of the context dependence measure received support.

------ Insert Table 2 about here -----

STUDY 2: CONTEXT DEPENDENCE, SELF-CONSTRUAL, AND CQ

In Study 2, we tested Hypothesis 1 and Hypotheses 2-6 to demonstrate whether the degree to which people rely on and attend to the four communication contexts is a function of their interdependent self-construal (Hypotheses 2-5) and whether context dependence is significantly related to CQ (Hypothesis 6). Hence, testing Hypotheses 2-6 allows us to verify a nomological network of context dependence's antecedents and outcomes.

Sample and Procedure

To rigorously test our hypotheses, we collected multisource and multiphase data. Through Qualtrics, 773 American working adults reported their interdependent and independent self-construal, age, gender, education, number of languages spoken, number of countries lived in for 1 year or more, prior cross-cultural communication training (Yes =1, No =0), prior international business experience (months), length of relationship with spouse (months). Then, 2

weeks later, the 773 participants' spouses were requested to rate the participants' general communication tendencies using the measure developed in Study 1. We received 345 matched responses. Then, another 2 weeks later, the 345 participants with matched responses from their spouses were invited to evaluate their own CQ. We received 312 responses (see Table 2 for demographic information), which composed our final sample for testing Hypotheses 2-6. We compared the initial and final samples in terms of demographics and study variables and could not find any significant differences (e.g., age: $F = .03$, *ns*; interdependent self-construal: $F = .15$, *ns*; independent self-construal: $F = .03$, *ns*).

Measures

Respondents rated all items on a 7-point Likert scale (7 point Likert Scale, 1 = strongly disagree, 7 = strongly agree) unless otherwise noted.

Interdependent self-construal. An 11-item relational interdependent self-construal measure from Cross et al. (2000) was adopted for participants to assess their own interdependent self-construal. A sample item was "In general, my close relationships are an important part of my self-image." Cronbach's alpha was .75. We tested our hypotheses with relational interdependent self-construal because context dependence refers to dyadic or small-group workplace communication.

Context dependence. Participants' significant others completed the 21-item context dependence measure developed in Study 1. They were asked to report to what degree their significant other (i.e. the participant) relies on and attends to contextual cues in the message, relationship, time, and space in general when communicating. Cronbach's alphas were .91 for message, .76 for relationship, .84 for time, and .83 for space.

CQ. Participants evaluated their own CQ according to Ang et al.' (2007) 20-item CQ measure. A representative item was "I enjoy interacting with people from different cultures." Cronbach's alpha was .95.

Control variables. We controlled for a participant's age, gender, education, number of languages spoken, number of countries lived in for 1 year or more, prior cross-cultural communication training (Yes =1, No =0), prior international business experience (months), length of relationship with spouse who evaluated participant's communication context, and independent self-construal. These control variables may potentially affect one's CQ and attention to communication context.

Results

CFA. As further support for Hypothesis 1, the conceptualized four-factor model of context dependence fit the data well (CFI = .94, NNFI = .93, RMSEA = .08, χ^2 = 619.78, d.f. = 183, n =345). Alternative models created by setting the correlation between factors at 1 or combining factors did not fit the data well: e.g., a four-factor model with the correlation between time and space set to be 1 (CFI = .77, NNFI = .74, RMSEA = .16, χ^2 = 1863.25, d.f. = 184) and a one-factor model formed by combining all the four factors (CFI = .64, NNFI = .60, RMSEA = .20, χ^2 = 2907.41, d.f. = 189). We also ran a second-order CFA and found that all the measurement items significantly loaded onto one of the four actors, which in turn loaded significantly onto context dependence as the higher-order factor with good fit indices: CFI = .94. NNFI = .93, RMSEA = .08, χ^2 = 627.95, d.f. = 186).

Hypotheses testing. To examine the relationships between interdependent self-construal and each of the four components of context dependence (Hypotheses 2-5), we conducted multivariate GLM analysis, which deals with more than one dependent variable and one or more

independent variables (Tabachnick & Fidell, 2013). To rule out alternative explanations, we controlled for a respondent's age, number of languages spoken, number of countries lived in, and prior cross-cultural communication training and education. The effects of interdependent self-construal on the four components of context dependence were still significant even after all the control variables were included in the model: F (4, 287) = 9.89, $p < .01$; Wilk's $\Lambda = 0.88$, partial $\eta 2 = .12$. More specifically, the result of model 2 in Table 3 shows that interdependent self-construal is significantly related to Message Context (b = 0.34, $p < 0.01$). Accordingly, Hypothesis 2 was supported. Furthermore, the result of model 4 in Table 3 presents that interdependent self-construal is also significantly associated with Relationship Context (b = 0.41, $p < 0.01$), thereby supporting Hypothesis 3. Supporting Hypothesis 4, the result of model 6 in Table 3 indicates that interdependent self-construal is significantly related to Space Context (b = 0.38, $p < 0.01$) and the relationship is significantly stronger than the relationship between independent self-construal and Space Context (b = 0.02, *ns*): Z = 3.09, $p < 0.01$. Finally, the result of model 8 in Table 3 confirms Hypothesis 5: i.e., the association between relational interdependent self-construal and Time Context (b = 0.27, $p < 0.01$) is significant. Together these results provide consistent and considerable support for our central thesis that interdependent self-construal is highly related to the extent to which people rely on and attend to message, relationship, space, and time contextual cues in communication.

------ Insert Table 3 about here -----

Hypothesis 6 predicts that people who rely more on contextual cues in communication are more culturally intelligent. The OLS regression analysis yielded strong support for this hypothesis. Results shown in Model 2 of Table 4 suggest that context dependence (calculated as

the average across all four components of context dependence) is significantly related to CQ (b = 0.37, $p < 0.01$).

------ Insert Table 4 about here -----

Supplementary analysis. We did not hypothesize the differential influences of independent and interdependent self on the four components of context dependence. Yet, in order to generate additional insights from our data, we followed the work of Clogg, Petkova, and Haritou (1995) to compare the predictive power of the two types of self for context dependence components. We found that compared to independent self-construal (b = 0.07, *ns*), interdependent self-construal (b = 0.34, $p < 0.01$) was more strongly related to Message Context in Model 2 of Table 3: Z = 2.08, $p < 0.05$. The relationship between interdependent self-construal and relationship context (b = 0.41, $p < 0.01$) was also stronger than the relationship between independent self-construal and Relationship Context (b = -0.04, *ns*) in Model 4 of Table 3: Z = 4.77, $p < 0.01$. Interdependent self-construal was more strongly related to Space Context (b = 0.38, $p < 0.01$) than was independent self-construal (b = 0.02, *ns*) in Model 6 of Table 3: Z = 3.09, $p < 0.01$. Finally, the association between interdependent self-construal and Time Context (b = 0.27, $p < 0.01$) was stronger than the association between independent self-construal and Time Context (b = 0.05, *ns*): Z = 2.03, $p < 0.05$. Accordingly, with respect to all the four components of context dependence, interdependent self-construal was a stronger predictor than independent self-construal.

DISCUSSION AND CONCLUSION

The purposes of this research are threefold. First, we want to more thoroughly examine and explain the phenomenon of context in communication by identifying the components of communication context and establishing valid measures of these components. Second, we hope

to deepen our understanding of why individuals differ in their reliance on communication context by investigating its link to individual interdependent self-construal. Finally, we endeavor to demonstrate that the extent to which one relies on contextual cues in communication is related to CQ. Through systematic testing, refinement and analysis, we developed a valid tool to measure context dependence and discriminate message, relationship, spatial, and temporal cues in the communication context that individuals rely upon to transmit and interpret meaning. To reduce common method variance and conduct a more robust test of the hypotheses, we used only spouse ratings of employees' communication context and employee ratings for all other study variables. The findings show that the strength of interdependent self-construal predicts reliance on contextual cues in communication, and that more highly context dependent communicators have higher CQ than do less context dependent communicators. These findings are intriguing and inspiring and generate meaningful theoretical and practical implications for the cross-cultural communication and management literature and practice.

Theoretical Implications

Our scale development and refinement insure that context dependence captures the totality of communication context that comprises four components of contextual cues: message, relationship, space, and time. To assure that our measure encompassed as many communication contextual cues as possible, we tapped into resources across a number of fields of inquiry when developing our conceptualization and scale: for example, cultural anthropology (Hall, 1976) and cross-cultural communication (Holtgraves, 1997). The importance of understanding the meaning conveyed through communication context, particularly in cross-cultural communication, has been widely noted by cross-cultural communication and management researchers (Ang & Van Dyne, 2008; Chiu, Lonner, Matsumoto, & Ward, 2013). However, previous studies did not

reveal a clear definition, conceptualization, or way to theorize and measure communication context. By breaking down communication context into four theoretically distinct components, we are able to measure and capture the richness and complexity of cues attended to and relied upon in one's communication context.

Also significant is the empirical evidence we present in this paper regarding the relationship between self-construal and the reliance on the communication context in conveying and interpreting meaning. These findings not only explain why some people rely more on context in communication than others; but also advance the theory of self-construal by extending it beyond verbal communication into the more subtle realm of meaning inferred or implied through non-spoken contextual cues. As prior research has found strong correlations between national culture and self-construal, our findings support Hall's theory that culture and communication are intricately intertwined; culture may be an aggregate-level phenomenon, but culture itself is enacted and sustained at the individual level through communication and interaction between actors in specific organizational contexts (Van Maanen & Barley 1984).

Moreover, the positive relationship between context dependence and CQ found in this study shows much promise in advancing the CQ literature. The majority of the CQ research so far has focused on its consequences in terms of cross-cultural problem solving, cultural adaptation and adjustment, or performance in cross-cultural settings (e.g., Ang et al., 2007; Chen, Liu, & Portnoy, 2012), whereas very few studies have examined *what* affects CQ. Our findings suggest that the extent to which people rely on contextual cues in communication is related to their levels of CQ. This novel finding enriches the existing findings by Crowne (2008) and Shannon and Begley (2008) who showed that international work experience increased CQ, and

by Liu and Chen (2014) who demonstrated that how expatriate managers react to cultural shocks influenced their CQ.

The nomological network of communication context demonstrated in this paper also connects different streams of cross-cultural literatures (self-construal, context of communication, CQ), and provides a more complete picture and deeper understanding of the psychological mechanisms underlying context dependence. Because our model defines multiple components of communication context: message, relationship, space, and time, it can identify subtle distinctions in context dependence well beyond any simple measures of communication directness/ indirectness. Furthermore, our context dependent measure elaborates on the dimensions in Hall's conception of high and low context cultures, allowing future researchers to discriminate cultures far beyond a simple high/low context dichotomy (Hall 1976). The measure allows us to potentially distinguish at the individual level which of the cues in the communication environment the sender and receiver of communication most attend to.

Practical Implications

The most common blunders reported by international managers invariably involve communication (Beamer & Varner, 2008). We have all heard the story of a Western manager who is perplexed when his Middle Eastern business partner links arms with him when the two are walking side by side, of the Mexican business person who didn't understand that arriving "on time" in Germany meant arriving five minutes prior to the meeting's start, or an Asian manager who expresses doubt about a deal by saying "We will give this serious consideration," which the Western counterpart interprets to mean the deal is very much on track. Yet, as we show here, successful international business communication involves more than just understanding that your counterpart engages in physical contact, has a different perspective on time, or uses words in a

different way. It necessitates understanding the role that the socio-cultural context plays in eliciting different nonverbal communication patterns, words, and the meanings conveyed by each. While our theoretical foundations and research applications focus on cross-national workplace interactions, it is important to note that because culture comprises any social group with shared values and norms, our measure applies equally well to other cross-cultural communication interactions, for example men and women, younger and older generations, or marketing and finance.

Our nomological network of context dependence helps advance our understanding and application of business communication in the global market by providing a theoretical framework and tool through which managers can gain self- and other-awareness and identify effective communication strategies. This model is equally applicable when one is conducting a meeting on foreign soil or when managing a multicultural team in the home office. Global migration means that no matter where we are in the world, we are likely to encounter a culturally diverse workforce with many different communication norms at play (Livermore, Van Dyne, & Ang, 2012). Managers need to understand the many sources of information that may be an invisible and implicit but essential part of a communication message (message context).

When interpreting communication in a global setting, managers are encouraged to consider whether counterparts are communicating with an attention to status or to preserving harmony in the relationship (relationship context). Managers who recognize the many uses of space– physical and auditory–in communication, and the meanings associated with them for different cultural groups will improve manager-subordinate understanding and communication effectiveness (spatial context). Finally, managers who understand the breadth of variation in individual and cultural patterns in how time affects communication will be better prepared to

work efficiently and effectively without unnecessary feelings of frustration or attributions of disrespect (temporal context). Understanding the many psychological and socio-cultural factors that shape context dependence will not only improve the expression and interpretation of managerial communication but also help to reduce misunderstanding and frustration in diverse workplaces as indicated by its strong relationship with CQ.

Limitations and Future Directions

This research tests a simple nomological net with interdependent self-construal as an antecedent and CQ as related to context dependence. To expand this nomological net, future research can test additional predictor or moderator variables at the individual (e.g. independence, need for cognition) or organizational level (e.g. organizational climate, organizational trust). The question of individual flexibility or variability in context dependence is also significant. Because people who are more highly context dependent are more attuned to environmental cues in communication, they also may be more flexible in adjusting their normative context dependence as needed in different situations or roles. Indeed, research suggests that the ability to be more contextually-flexible can have important implications for negotiation outcomes. One survey of experienced U.S. and Japanese negotiators showed that both U.S. and Japanese negotiators report that they adjust to their counterpart's style (Adair, Taylor, & Tinsley, 2009). However, behavioral evidence shows it is only the high context, relationally attuned Japanese that successfully adjust their communication and strategies, making possible higher joint gains in a negotiation (Adair, Okumura, & Brett, 2001).

In this research we demonstrated the relationship between attention to and reliance on context in communication and overall CQ. Yet, Earley and Ang (2003) conceptualized CQ as a multidimensional construct comprising metacognitive, cognitive, motivational, and behavioral

dimensions with specific relevance to functioning in culturally diverse settings. Although several management scholars have measured overall CQ (e.g., Rockstuhl & Ng, 2008; Templer et al, 2006), others have reported that the four dimensions of CQ may have differing implications for cross-cultural effectiveness. For example, Ang and her colleagues (2007) found that cognitive and metacognitive CQ have predictive ability in explaining variance in individuals' cultural judgment and decision making, while meta-cognitive and behavioral CQ predict task performance of international executives. An opportunity for future research is to explore whether those who are more highly reliant on contextual cues in communication have greater cognitive, metacognitive, motivational and behavioral CQ or whether the tendency to rely on contextual cues is more closely related to any particular aspects of CQ. It is also interesting to delve into the differential relationships between the four dimensions of communication context and cognitive, metacognitive, motivational and behavioral CQ. Finally, future research can uncover factors that influence direction and causality in the relationship between these two constructs. Further refinement in teasing out such relationships may provide a clue to possible avenues to increasing CQ and thus, effectiveness in cross-cultural business interactions.

Having now distilled our understanding of contextual cues in communication to four distinct components, another avenue for future research is to examine how the context dependence on various components of communication are related to effective communication and productivity at work given various cultural contexts, for example in a German company operating in the U.S. or a Canadian company with operations in Singapore. We also propose that researchers test how the interaction of different communication context components can impact multicultural team communication, effectiveness, and identity. We predict that the understanding and reliance on certain communication context components in multinational companies can also

impact important psychological outcomes such as organizational commitment and job satisfaction. As the world of business becomes increasingly more global, the role of communication context in business success continues to grow, leaving these and many other questions for future research to examine. In addition, future research should examine whether self-construal may function as a mediator linking factors at different levels of culture (e.g., nationality, organizational culture, team climate) to context dependence.

One could easily extend this research to focus on the organizational consequences of context dependence. For example, teamwork researchers may use the conceptualizations introduced here to examine how individual differences in the cues to which members attend and their level of context dependence could influence team dynamics, relationship building between members, the approaches members take to solve task conflict and interpersonal conflict, and the leader's role in building an effective team. Researchers who are interested in the multilevel research paradigm (Hitt, Beamish, Jackson, & Mathieu, 2007) can use this framework to study how the group-level context-dependence emerges from the interactions of members with different levels of context dependence, and how that group context dependence in turn influences that of individual members.

Conclusion

Communication has become an increasingly hot research topic that intrigues a number of organizational researchers. Surprisingly, although a large amount of information and meaning are embedded and transmitted through communication context especially in cross-cultural communication situations, scholarly attention has generally been directed toward verbal communication or communication content. Directly addressing this research void, we conducted multiple studies across several samples to develop a four-component measure that captures the

subtlety and complexity of context dependence. Our results suggest that being attentive and receptive to communication context is a function of one's self-construal; and being highly attentive and receptive to contextual cues in communication are positively related to one's CQ. We hope our research may spur more fine-grained organizational studies on communication context and its implications both for theory and practice.

REFERENCES

Adair, W., Buchan, N., & Chen, X. P. 2009. Bringing views of culture as communication and social interaction into management and marketing research. In C. Nakata (Ed.), ***Beyond Hofstede: Culture frameworks for global marketing and management***: 146-180. New York: Macmillan Palgrave.

Adair, W. L., Hideg, I., & Spence, J. R. 2013. The culturally intelligent team: The impact of team cultural intelligence and cultural heterogeneity on team shared values. ***Journal of Cross-Cultural Psychology***, 44(6): 941-962.

Adair, W. L., Okumura, T., & Brett, J. M. 2001. Negotiation behaviors when cultures collide: The U.S. and Japan. ***Journal of Applied Psychology,*** 86: 371-385.

Adair, W. L., Taylor, M. S., & Tinsley, C. 2009. Starting out on the right foot: Negotiation schemas when cultures collide. ***Negotiation and Conflict Management Research,*** 2(2): 138-163.

Ang, S., & Van Dyne, L. 2008. ***Handbook of cultural intelligence.*** New York: ME Sharpe.

Ang, S., Van Dyne, L., Koh, C. 2005. Personality correlates of the four-factor model of cultural intelligence. ***Group and Organization Management,*** 31: 100-123.

Ang, S., Van Dyne, L., Koh, C., Ng, K. Y., Templer, K. J., Tay, C., & Chandrasekar, N. A. 2007. Cultural intelligence: Its measurement and effects on cultural judgment and decision making, cultural adaptation and task performance. ***Management and Organization Review,*** 3: 335-371.

Beamer, L., & Varner, I. I. 2008. ***Intercultural communication in the global workplace.*** New York: McGraw-Hill.

Birdwhistell, R. L. 1955. ***Background to kinesics. Etc***., 13: 10-18.

Bluedorn, A. C. 2002. ***The human organization of time: Temporal realities and experience.***

Stanford, CA: Stanford University Press.

Bluedorn, A. C., & Denhardt, R. B. 1988. Time and organizations**.** ***Journal of management,*** 14(2): 299-320.

Bluedorn, A. C., Kalliath, T. J., Strube, M. J., & Martin, G. D. 1999. Polychronicity and the inventory of polychronic values (IPV). The development of an instrument to measure a fundamental dimension of organizational culture. ***Journal of Managerial Psychology,*** 14(3/4): 205-230.

Bluedorn, A. C., & Standifer, R. L. 2004. Groups, boundary spanning, and the temporal imagination. In S. Blount (Ed.), ***Time in groups: research on managing groups and teams,*** 6: 159-182. UK: Emerald Group Publishing Limited.

Burgoon, J. K., Buller, D. B. & Woodall, W. G. 1996. ***Nonverbal communication: The unspoken dialogue.*** New York: McGraw-Hill.

Brislin, R. W. & Kim, E. S. 2003. Cultural diversity in people's understanding and uses of time. ***Applied Psychology: an International Review,*** 52(3): 363-382.

Brislin, R. W., & Lo, K. D. 2006. Culture, personality, and people uses of time: Key interrerlationships. In J. C. Thomas, D. L. Degal, & M. Hersen (Eds), ***Comprehensive handbook of personality and psychopathology:*** 44-61. Hoboken, NJ: John Wiley & Sons.

Buhrmester, M., Kwang, T., Gosling, S. D. 2011. Amazon's mechanical turk: A new source of inexpensive, yet high-quality, data? ***Perspectives on Psychological Science,*** 6(1): 3-5.

Chen, X., Liu, D., Portnoy, R. 2012. A multilevel investigation of motivational cultural intelligence, organizational diversity climate, and cultural sales: Evidence from U.S. real estate firms. ***Journal of Applied Psychology***, 97(1): 93-106.

Chiu, C. Y., Lonner, W. J., Matsumoto, D., & Ward, C. 2013. Cross-cultural competence theory,

research, and application. ***Journal of Cross-Cultural Psychology,*** 44(6): 843-848.

Clogg, C. C., Petkova, E., & Haritou, A. 1995. Statistical methods for comparing regression coefficients between models. ***American Journal of Sociology,*** 100(5):1261-1293.

Cohen, R. 1997. ***Negotiating across cultures: International communication in an interdependent world.*** Washington, DC: US institute of Peace Press.

Cross, S. E., Bacon, P. L., & Morris, M. L. 2000. The relational-interdependent self-construal and relationships. ***Journal of Personality and Social Psychology,*** 78(4): 791-808.

Cross, S. E., Hardin, E. E., & Gercek-Swing, B. 2011. The what, how, why, and where of self-construal. ***Personality and Social Psychology Review,*** 15(2): 142-179.

Crowne, K. A. 2008. What leads to cultural intelligence? ***Business Horizons,*** 51(5): 391-399.

DeVellis, R. F. 1991. ***Scale development: Theory and applications.*** Newbury Park, CA: Sage.

Earley, C., & Ang, S. 2003. ***Cultural intelligence: Individual across cultures***. Palo Alto: Stanford University Press.

Earley, P. C., & Mosakowski, E. 2005. Cultural intelligence. ***Harvard Business Review,*** 82(10): 139-146.

Gesteland, R. R. 1999. ***Cross-cultural business behavior: Marketing, negotiating and managing across cultures***. Copenhagen, Denmark: Copenhagen Business School Press.

Gudykunst, W. B., Y. Matsumoto, S., Ting-Toomey, T., Nishida, K., Kim, & Heyman, S. 1996.The influence of cultural individualism-collectivism, self construals, and individual values on communication styles across cultures. ***Human Communication Research,*** 22(4): 510-543.

Haberstroh, S., Oyserman, D., Schwarz, N., Kühnen, U., & Ji, L. J. 2002. Is the interdependent self more sensitive to question context than the independent self? Self-construal and the

observation of conversational norms. ***Journal of Experimental Social Psychology,*** 38(3): 323-329.

Hall, E. T. 1959. ***The silent language.*** New York: Random House.

Hall, E. T. 1960. The silent language in overseas business. ***Harvard Business Review,*** 38(3): 87-96.

Hall, E. T. 1966. ***The hidden dimension.*** Garden City, NY: Doubleday.

Hall, E. T. 1976. ***Beyond culture.*** New York: Random House.

Hall, E. T. 1989. ***Beyond culture.*** New York: Anchor Books.

Hall, E. T., & Hall, M. R. 1990. ***Understanding cultural differences: Germans, French and Americans.*** London: Nicholas Brealey Publishing.

Heller, D., Komar, S., & Lee, W. B. 2007. The dynamics of personality states, goals and well-being. ***Personality and Social Psychology Bulletin***, 33: 898–910.

Hinkin, T. R. 1995. A review of scale development practices in the study of organizations. ***Journal of Management,*** 21(5): 967-988.

Hinkin, T. R. 1998. A brief tutorial on the development of measures for use in survey questionnaires. ***Organizational Research Methods***, 1(1): 104-121.

Hitt, M. A., Beamish, P. W., Jackson, S. E., & Mathieu, J. E. 2007. Building theoretical and empirical bridges across levels: Multilevel research in management. ***Academy of Management Journal,*** 50: 1385-1399.

Holtgraves, T. 1997. Styles of language use: Individual and cultural variability in conversational indirectness. ***Journal of Personality and Social Psychology,*** 73(3): 624-637.

Imai, L., & Gelfand, M. J. 2010. The culturally intelligent negotiator: The impact of cultural intelligence (CQ) on negotiation sequences and outcomes. ***Organizational Behavior and***

Human Decision Processes, 112(2): 83-98.

Kaufman-Scarborough, C., & Lindquist, J. D. 1999. Time management and polychronicity: Comparisons, contrasts, and insights for the workplace***. Journal of Managerial Psychology,*** 14(3/4): 288-312.

Kim, M. S. & Wilson, S. R. 1994. A cross-cultural-comparison of implicit theories of requesting. ***Communication Monographs,*** 61(3): 210-235.

Kittler, M.G., Rygl, D., & Mackinnon, A. 2011. Beyond culture or beyond control? Reviewing the use of Hall's high-/low-context concept. ***International Journal of Cross Cultural Management,*** 11(1): 63–82.

Lam, S. K., Chen, X. P., & Schaubroeck, J. 2002. Participative decision making and employee performance: The moderating effects of allocentrism and efficacy. ***Academy of Management Journal,*** *45(5),* 905-915.

Lebra, T. S. 1987. The cultural significance of silence in Japanese communication. ***Multilingua,*** 6(4): 343-358.

Lewis, R. D. 2006. ***When cultures collide: Managing successfully across cultures*** (3rd ed.). London: Nicholas Brealey Publishing.

Liu, D., & Chen, X. P. 2014. ***Learning from cultural shocks: A cross-cultural longitudinal study of expatriate creativity.*** Paper Presented at the Annual Meeting of the Academy of Management, Philadelphia, Pennsylvania.

Livermore, D., Van Dyne, L., & Ang, S. (2012). Cultural Intelligence: Why every leader needs it. ***Intercultural Management Quarterly,*** 13(2): 18-21.

MacDuff, I. 2006. Your pace or mine? Culture, time, and negotiation. ***Negotiation Journal,*** 22(1): 31-45.

Markus, H. R., & Kitayama, S. 1991. Culture and the self-implications for cognition, emotion, and motivation. ***Psychological Review,*** 98(2): 224-253.

Markus, H. R., & Kitayama, S. 1994. A collective fear of the collective: Implications for selves and theories of selves. ***Personality and Social Psychology Bulletin,*** 20(5): 568-579.

Masuda, T., & Nisbett, R. E. 2001. Attending holistically versus analytically: Comparing the context sensitivity of Japanese and Americans***. Journal of Personality and Social Psychology,*** 81(5): 922-934.

Matsumoto, D. 1996. ***Unmasking Japan: Myths and realities about the emotions of the Japanese.*** Stanford, CA: Stanford University Press.

Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. 2001. Culture and systems of thought: Holistic vs. analytic cognition. ***Psychological Review,*** 108(2): 291-310.

Reardon, J., & Miller, C. 2012. The effect of response scale type on cross-cultural construct measures: An empirical example using Hall's concept of context. ***International Marketing Review,*** 29(1): 24-53.

Rockstuhl, T., & Ng, K. Y. 2008. The effects of cultural intelligence on interpersonal trust in multicultural teams. In S. Ang & L. Van Dyne (Eds.), ***Handbook of cultural intelligence: Theory, measurement, and applications:*** 206-220. Armonk, NY: M. E. Sharp.

Schmitt, N., & Stults, D. M. 1985. Factors defined by negatively keyed items: The result of careless respondents. ***Applied Psychological Measurement,*** 9(4): 367-373.

Shannon, L. M., & Begley, T. M. 2008. Antecedents of the four-factor model of cultural intelligence. In S. Ang & L. Van Dyne (Eds.), ***Handbook of cultural intelligence: Theory, measurement, and applications:*** 41-55. Armonk, NY: M. E. Sharp.

Singelis, T. M., & Brown, W. J. 1995. Culture, self, and collectivist communication linking

culture to individual behavior. ***Human Communication Research,*** 21(3): 354-389.

Tabachnick, B. G., & Fidell, L. S. 2013. ***Using multivariate statistics*** (6th edition). Boston: Pearson.

Templer, K. J., Tay, C., & Chandrasekar, N. A. 2006. Motivational cultural intelligence, realistic job preview, realistic living conditions preview, and cross-cultural adjustment. ***Group and Organization Management,*** 31: 154-173.

Thomas, K. W., & Kilmann, R. H. 1974. ***Thomas-Kilmann conflict mode survey.*** Tuxedo, NY: Xicom.

Ting-Toomey, S. 1997. Intercultural conflict competence. In W. R. Cupach, & D. J. Canary (Eds**.**), ***Competence in interpersonal conflict***: 120-147. New York: McGraw-Hill.

Triandis, H. C. 1972. ***The analysis of subjective culture.*** New York: Wiley.

Triandis, H. C. 1989. The self and social behavior in differing cultural contexts. ***Psychological Review,*** 96(3): 506-520.

Triandis, H. C. 1994. ***Culture and social behavior.*** New York: McGraw-Hill.

Triandis, H. C. 1995. ***Individualism and collectivism.*** Boulder, CO: Westview Press.

Triandis, H. C., Marin, G., Lisansky, J., & Betancourt, H. 1984. Simpatia as a cultural script of hispanics. ***Journal of Personality and Social Psychology,*** 47(6): 1363-1375.

Trompenaars, F., & Hampden-Turner, C. 2012. ***Riding the waves of culture.*** New York: McGraw-Hill.

Van Maanen, J., & Barley, S. R. 1984. Occupational communities: Culture and control in organizations. In B. M. Staw, & L. L. Cummings (Eds), ***Research in organizational behavior,*** vol. 6: 287-366. Greenwich, CT: JAI Press.

Yamagishi, T., & Yamagishi, M. 1994. Trust and commitment in the United States and Japan. ***Motivation and emotion,*** 18(2): 129-166.

TABLE 1
The 21-item Context Dependence Measure[a]

Message Context	
1. I catch on to what others mean even when they do not say it directly. (.84) 2. Even if I do not receive a clear response from others, I can understand what they intended. (.85) 3. I can tell when someone has something to tell me but is apprehensive about discussing it. (.82) 4. During conversation, I am very good at knowing the feelings other people are experiencing. (.82)	**α = .90**
Relationship Context	
5. I qualify (e.g., use "maybe," "perhaps") my language when I communicate. (.59) 6. When addressing someone of a higher rank than me, I tend to be formal. (.54) 7. I will avoid telling the truth if it protects the social harmony. (.78) 8. I do everything to avoid losing face in communication. (.73) 9. I avoid making others lose face in communication. (.63) 10. My communication style is very different depending on whether I am interacting with colleagues at work or in a social setting. (.41)	**α = .76**
Spatial Context	
11. When talking with someone, I like to be close enough to them so that I could easily touch them when needed. (.42) 12. I tend to constantly gesture when I communicate with others. (.65) 13. I verbally exaggerate to emphasize a point. (.71)	**α = .82**

14. I adjust my facial expression to make a point. (.85) 15. I vary my tone of voice when I communicate. (.82) 16. I adjust my rate of speech to emphasize my message. (.80)	
Temporal Context	
17. If a meeting with a counterpart is scheduled to start at 9am, we start the meeting at exactly 9am (Rev). (.77) 18. If a meeting is scheduled to last for one hour, I conclude conversations at the hour (Rev). (.53) 19. I pay attention to schedules agreed upon by my counterparts (Rev). (.86) 20. I pay attention to deadlines when working with others (Rev). (.86) 21. In conversation, I express my ideas as soon as the other party asks for a response (Rev). (.68)	**α = .81**

[a] Factor loadings are reported in parentheses.

TABLE 2
Study 2: Descriptive Statistics, Reliabilities and Intercorrelations among Measures[a]

	Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Age	46.32	12.88															
2	Gender	1.49	0.50	-.22**														
3	Education	3.71	0.94	-.12*	.03													
4	Number of languages spoken	1.28	0.62	-.09	-.05	.20**												
5	Number of countries lived	1.39	1.77	-.06	.09	.07	.22**											
6	Prior cross-cultural communication training	.78	0.42	.02	.02	.01	.08	.06										
7	Prior international business experience	9.64	47.34	.18*	-.06	.11	.29**	.19**	.05									
8	Relationship length	1.11	0.32	.15**	.20**	-.10	-.03	-.04	.02	.05								
9	Interdependent self-construal	5.27	0.74	-.13*	.06	.03	.08	.10	-.00	.00	-.06	**(.75)**						
10	Independent self-construal	5.51	1.09	-.15**	.05	.04	.16**	.09	-.01	.02	-.03	.38**	**(.78)**					
11	Message context	5.04	1.34	-.02	-.19**	-.04	.06	.11	-.00	.06	-.03	.22**	.14*	**(.91)**				
12	Relationship context	4.63	0.99	-.20**	.02	.05	.19**	.13*	.00	.07	-.05	.33**	.15**	.17**	**(.76)**			
13	Spatial context	4.62	1.20	-.22**	.05	-.01	.10	.11	.05	.08	.00	.28**	.19**	.17**	.43**	**(.84)**		
14	Temporal context	5.44	1.13	-.01	-.09	.06	.16**	.11	.12*	.09	-.24**	.22**	.20**	.16**	.30**	.25**	**(.83)**	
15	CQ	3.59	0.78	-.23**	-.04	.19**	.35**	.20**	-.09	.19**	-.13*	.41**	.28**	.24**	.41**	.29**	.28**	**(.95)**

$n = 312$.
* $p < 0.05$
** $p < 0.01$ (two-tailed).

TABLE 3
Study 2: Results of Multivariate GLM Models of the Effects of Interdependent and Independent Self-Construal on the Four Components of Context Dependence[a]

	Message Context		Relationship Context		Spatial Context		Temporal Context	
Controls	**Model1**	**Model2**	**Model3**	**Model4**	**Model5**	**Model6**	**Model7**	**Model8**
Constant	6.35**	4.03**	5.09**	3.08**	5.62**	3.43**	5.75**	3.95**
	(.61)	(.85)	(.44)	(.59)	(.54)	(.74)	(.50)	(.70)
Age	-.01	-.01	-.02**	-.01**	-.02**	-.02**	.00	.00
	(.01)	(.01)	(.01)	(.00)	(.01)	(.01)	(.01)	(.01)
Gender	-.60**	-.62**	-.00	-.03	.01	-.01	-.07	-.09
	(.16)	(.16)	(.12)	(.11)	(.14)	(.14)	(.13)	(.13)
Education	-.08	-.08	-.03	-.03	-.08	-.08	.01	.01
	(.08)	(.08)	(.06)	(.06)	(.07)	(.07)	(.07)	(.07)
Number of languages spoken	.05	.01	.24*	.21*	.10	.07	.21	.18
	(.14)	(.13)	(.10)	(.09)	(.12)	(.12)	(.11)	(.11)
Number of countries lived	.09*	.08	.04	.03	.04	.03	.04	.03
	(.05)	(.04)	(.03)	(.03)	(.04)	(.04)	(.04)	(.04)
Prior cross-cultural	-.05	-.02	-.01	.02	.07	.10	.27	.29
communication training	(.19)	(.19)	(.14)	(.13)	(.17)	(.16)	(.16)	(.15)
Prior international business	.00	.00	.00	-.00	.00	.00	.00	.00
experience	(.00)	(.00)	(.00)	(.17)	(.00)	(.00)	(.00)	(.00)
Relationship length	.14	.19	-.04	-.04	.08	.12	-.78**	-.75**
	(.25)	(.25)	(.18)	(.18)	(.22)	(.22)	(.21)	(.21)
Independent self-construal		.07		-.04		.02		.05
		(.07)		(.05)		(.06)		(.06)
Independent variable								
Interdependent self-construal		.34**		.41**		.38**		.27**
		(.11)		(.08)		(.10)		(.09)
F	2.49*	3.59**	3.42**	5.99**	3.18**	4.54**	3.66**	4.37**
R^2	.06	.11	.09	.17	.08	.14	.09	.13

n = 312.
* $p < 0.05$
** $p < 0.01$ (two-tailed).

TABLE 4
Study 2: Results of OLS Regression Models of the Relationship between Context Dependence and CQ

	CQ	
Controls	**Model1**	**Model2**
Constant	3.92**	1.84**
	(.32)	(.40)
Age	-.01**	-.01**
	(.00)	(.00)
Gender	-.09	-.08
	(.09)	(.08)
Education	.07	.09*
	(.05)	(.04)
Number of languages spoken	.33**	.26**
	(.07)	(.07)
Number of countries lived	.05*	.03
	(.02)	(.02)
Prior cross-cultural communication training	-.23*	-.26**
	(.10)	(.09)
Prior international business experience	.002*	.00
	(.001)	(.00)
Relationship length	-.17	-.09
	(.13)	(.12)
Independent variable		
Context dependence		.37**
		(.05)
F	10.58**	18.02**
R^2	.23	.36

$n = 312$.
* $p < 0.05$
** $p < 0.01$ (two-tailed).