The Meaning of Context in Communication: Reconceptualization and Scale Development

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Abstract

In prior work we synthesized Hall’s (1976) theory of culture as communication into a construct called Communication and Social Interaction Style (CSIS). CSIS is comprised of four components -- communication style, relationships, time, and space that fully capture the role and meaning of context in the communication process. In the current study, we report results from four studies of CSIS scale development conducted in the U.S. that resulted in a 95-item scale. This scale offers management and marketing scholars new and alternative ways to measure how culture impacts communication and social interaction at work. Finally we discuss our plans to validate our scale outside the U.S. and explore the antecedents and consequences of CSIS that will further validate its ability to predict behavioral differences across cultures.
Communication and social interaction processes are an obvious yet integral part of everyday business operations. Examples range from the micro – a manager delivering feedback, a work group deciding its project timeline, an employee asking for a raise, to the macro – negotiating a contract with a supplier, drafting terms of a business merger, a CEO addressing shareholders. In all of these everyday business situations, culture plays a role in how information is communicated and understood. The simplest example noted by anthropologist Edward Hall (1976) is that in the U.S. information is often stated directly, whereas in Japan it is communicated subtly and indirectly, with attention to holistic contextual cues. However, a careful reading of Hall’s many works shows that his low/high context theory is about much more than communication directness. Culture affects not only what people say in words, but also the degree to which they attend to and incorporate contextual information relating to relationships, time, and space when they interact with others. We propose that this broader perspective on culture and communication and social interaction will improve the modeling, measurement, and understanding of organizational communication in different national cultures, and in multicultural workplaces around the world.

The current study presents a brief overview of the Communication and Social Interaction Style (CSIS) dimension that is proposed by Adair, Buchan, and Chen (2008). We then present the results of four empirical studies that develop and validate a scale to measure the four CSIS components: communication style, relationship, time, and space. The goal of our work is to create a scale that captures the breadth of cultural variation in communication directness and reliance on relationship, time, and space context when communicating with others. The scale can be used to measure one or more of the four CSIS components to categorize an individual’s style. In the future, when data have been collected from multiple cultures around the globe, data can be
aggregated to classify culture level CSIS types as well. In conclusion, we discuss future plans to validate the scale cross-culturally and integrate it into management research.

The Four Components of CSIS

There has been relatively little management research into culture as an adapted system of behavioral patterns or customs tailored to the ecological setting in which people live (Gudykunst & Ting-Toomey, 1988). But it is just such a perspective that explains why communication norms and business practices vary so blatantly in different cultures around the world. Hall’s theory of culture as communication offers a framework for understanding the systematic ways that culture impacts communication and social interaction in organizations. The theory focuses on the role of context in communication. In low context Western cultures people tend to say directly in words what they want to convey, whereas in high context Eastern cultures people rely on more complex and subtle styles of communication that use metaphor, nonverbal communication, precedent, and status to convey information in a message (1959, 1976). Importantly a culture’s perspectives on time, space, and interpersonal relationships are expressions of a “silent language,” and these factors also impact both the manner and content of what is conveyed (Hall, 1959). Our research develops a measurement tool that captures these four dimensions of communication and social interaction: communication style, relationship context, time context, and space context.

Communication style is a component that captures the degree to which communication is direct versus indirect. In high context cultures, people rely on internal and external context to convey information. Internal context is information contained in the individual, for example in the non-verbal cues or previous experience one brings to a social interaction. External context is information contained in the environment, for example in social cues or in the history of the two interactants’ relationship. In low context cultures, information is contained primarily in the
verbal coded, explicit part of a communicative message. Thus, low context communication is typically more direct and explicit, and high context communication is more indirect and implicit. Based on Hall’s many works (1959, 1960, 1966, 1976, 1983, 2002), we identified seven key elements to capture the communication style component of CSIS. They are explicit communication, indirect expression, attention to indirectness, conflict approach, style of persuasion, use of nonverbal, and listener-speaker orientation.

**Relationship context** is a CSIS component that captures the degree to which parties’ roles and relationships affect how they communicate with one another. In low context cultures, an explicit written contract between business partners is essential, but in high context cultures a strong relationship can be more important than words on a piece of paper (Hall, 1976). It is not surprising then that research by Gudykunst (1983) demonstrated that members from high context cultures spend more time asking questions and acquiring information when they meet a stranger than members of low context cultures. This is because in high context cultures the relationship context influences the manner and context of communication. The relationship context component of CSIS should capture the degree to which an individual attends to relational cues when communicating with others, for example attention to hierarchy and roles, harmony and face maintenance, truth telling, and work/life mix.

**Time context** is a CSIS component that addresses how individuals’ perceptions of time affect their communication and interaction patterns. Cultures can be categorized as either monochronic or polychronic along the time dimension (Hall, 1960). People in monochronic cultures pay more attention to schedules and measured time, whereas people in polychronic cultures have a more fluid and flexible perception of time. Because they attend more to the context surrounding clock time, people in polychronic (high context) cultures would consider
catching up with a friend on the street as more important than arriving “on time” for a meeting at the office. This distinction between the strict, objective, monochronic view of time and the more fluid, contextual, polychronic view of time is part of the context-free and context-rich forms of relating in low versus high context cultures, respectively. Therefore, the time context component of CSIS should include the role of time in social interaction as indicated by attention to deadlines, attention to schedules, multi-tasking, and a fixed-versus fluid perception of time.

Space context is the component of CSIS that captures the degree to which people attend to spatial cues when relating and communicating with others. The most common example of cultural variation in space context from Hall’s study of proxemics (1966) is the tendency for people from low context North American cultures to prefer substantial personal distance when communicating with others, whereas people in high context Latin cultures are more comfortable with close personal space or crowding (Hall, 1960). Like time context, the space context component captures not only the degree to which people pay attention to space, but also the meaning attached to that space. For example, silence, a form of auditory space, is interpreted by low context people as a void to be filled (Hasegawa & Gudykunst, 1998), but in high context cultures however, silence is a communicative act that may indicate truthfulness, disapproval, or embarrassment (Gudykunst et al. 1996; Lebra 1987). The most relevant space context for managerial communication are distant versus close personal space, expressive body language, touch, interruptions, silence, and emotional expression.

Developing a Measurement Tool for CSIS

By measuring CSIS as four components, researchers will capture a more nuanced picture of individual and cultural profiles across the CSIS spectrum. This approach offers more depth than scales that measure just one component at a time, for example Holtgraves’ indirectness
scales (Holtgraves, 1997). It also allows us to categorize a greater variety of CSIS types than merely low and high context. For example, both Hall (1976) and Lewis (2006) have noted substantial variation between cultures that fall within the “high context” category. Descriptions of high context East Asian cultures include words like formality, reservation, silence, respect. Lewis calls these types of cultures Reactive, and in our work we define them as Reserved. Descriptions of high context Latin (and Mediterranean) cultures include words like emotional, expressive, and talkative. Lewis calls this group of cultures Multi-active and in our work we define them as Expressive. Importantly, these differences are not just a matter of degree, i.e., being more or less high context. The differences are in the kind of context relied on in high context communication. The category of “high context” is therefore too broad to capture the differences between these cultures. By measuring CSIS in four components, researchers will be able to identify the profile of these and other culture types.

As stated, the direct study and measurement of behavioral patterns across cultures has received relatively little attention from the academic community. Yet Hall’s conceptualization of communication as culture has served as the foundation for the work of many consultants and practitioners of cross-cultural management, who have shown his ideas to have great external validity (e.g. Lewis 2006; Gesteland 1999). In this study, we attempt to fill this void in the academic community by developing a reliable and valid instrument that will accurately measures the four dimensions of CSIS: Communication style, interpersonal relationship, time, and space.

**Study 1: Developing an Initial Version of the CSIS Scale**

**Survey Development**

The first stage in scale development is item generation and addresses content validity (Hinkin, 1995; DeVellis, 1991). Our first step in item generation was to test an existing
instrument used by management consultants to capture three types of cultures: Linearactive (low context), Multiactive (high context Latin/Mediterranean), and Reactive (high context East Asian) (Lewis). Lewis’ tool asks 60 questions in a forced choice format with three possible responses. We first reformatted all of the questions into a format suitable for scale development and testing. Some of these questions were easily transformed into a scaled response format. For example, Lewis asks “When I’ve got something to say…” and gives three possible responses: 1) I don’t keep quiet, 2) I often keep quiet, or 3) I sometimes keep quiet. This question was easily rewritten in the format: “When I’ve got something to say, I often keep quiet,” with response choices on a scale of 1 (strongly disagree) to 5 (strongly agree). But other questions included 3 response choices that measured different things. For example, Lewis asks “When getting things done, I prefer to…” and gives three possible responses: 1) follow the correct procedures, 2) use my connections, or 3) do whatever seems correct in the circumstances. Questions like this were decomposed into individual survey items. For example, we wrote three separate survey items: 1) When getting things done, I prefer to follow the correct procedures, 2) When getting things done I prefer to use my connections, and 3) When getting things done I prefer to do whatever seems correct in the circumstances. This procedure resulted in 78 survey items. All survey items were then reviewed for clarity, structure, and ambiguous meaning.

Participants

The 78 item Lewis survey plus demographic questions were administered to a sample of 1222 university undergraduate and MBA students from five of universities in the United States. Because we expect there to be cultural variation in CSIS and cross-cultural scale validity is for a later stage in the research, for analysis we selected individuals who identified their citizenship...
and primary nationality as U.S. This resulted in a subsample of 608 respondents for factor analysis. The sample was 57% male and 43% female. Their average age was 24.1 (SD 6.09) with an average of 5 years work experience. Participants reported work experience in a variety of industries including 12.4% management, 27.1% business finance & administration, 25.1% sales and trading, and several other miscellaneous categories.

**Procedures**

The survey was posted on a secure website hosted by a university in the United States. Importantly, the survey was conducted in line with recommendations given in the field (Birnbaum, 2004; Dillmann, 2007). We used server-sided survey programming to avoid common technical selection biases, which generally exclude people who do not meet special browser requirements. We also pre-tested the survey on different computers to ensure that the survey looked the same before putting the survey on line. We also assigned each potential respondent a unique session ID and password, resulting in individualized survey links. This made it impossible for any respondent to participate in the survey more than once. On the first page of the survey we guaranteed the anonymity and confidentiality of individual surveys and emphasized that participation was voluntary. These measures taken to prevent common pitfalls of online research lead us to be at least as confident about the quality of our data as we would have been had we conducted a traditional paper and pencil survey (the same procedure was adopted for Studies 2, 3 and 4 as well).

The survey consisted of the revised Lewis survey items plus demographic questions. It took approximately 30 minutes to complete. All participants were debriefed about the purposes of the survey after they completed the survey.

**Results**
The 78 survey items were subjected to a principal components analysis with Varimax rotation. Because our approach was theoretically driven to isolate the different components of CSIS, we conducted 3 different factor analyses: (1) the 43 items that comprised Communication Style, (2) the 14 items that comprised Relationships, and (3) the 17 items that comprised Time (see Hammer et al., 2003 for an example of this approach). Because there were only 4 items measuring non-verbal communication, which is an example of both Space and low Directness, we did not have enough items to run a separate factor analysis for Space. Instead these items were included in the factor analysis for Communication Style. The internal consistency of the 78 items was examined first. We used a primary loading criteria of .40 for inclusion (Stevens, 1986; Holtgraves, 1997) and eigenvalues greater than 1 (Nunnely, 1978) to isolate the number of factors within each construct. Based on these criteria, 50 items did not load onto a factor. The emerging 28-item factor structure included 3 factors for Communication Style, 2 factors for Relationships, and 3 factors for Time, for a total of 8 factors. We then included the resulting 28 items into a single Principle Component Analysis with Varimax rotation and found that the same identical 8 factors emerged, lending support to the stability of the factor structure. Table 5 presents the results.

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

It can be seen from Table 1 that Communication Style was composed of three factors. “Interruption” included 4 items such as “In conversation, I always wait for a pause before I speak” and “I often interrupt other speakers” (reverse coded). The alpha reliability was .73 and it accounted for 8.5% of the variance. “Showing Emotion” included 7 items such as “When I deal with people, I let my emotions show” and “If I see something wrong, I tell people how I feel about it”. And the Alpha reliability was .76 and the variance accounted for was 10.3%. “Conflict
Avoidance” included 3 items such as “When I argue, I avoid confrontation” and “When I disagree with someone, I demonstrate the weakness in their argument” (reverse coded). The alpha Reliability was .67 and it accounted 6.6% of the total variance.

Relationships consisted of two factors: Mix Social/Professional and Face. Mix social /professional included 2 items: “When my work is finished for the day, I like to continue personal discussions” and “When my work is finished for the day, I like to involve my colleagues in other aspects of my life.” Alpha Reliability was .67 and it accounted for 5.56% of the variance. Face included 4 items such as “If I lose face in a situation, it is an extremely unpleasant experience for me” and “If I lose face in a situation, it makes me annoyed”. The alpha reliability for this factor was .70 and variance accounted for was 8.5%.

Time consisted of three factors: Schedule Flexibility, Multi-tasking, and Patience. Schedule flexibility included items such as “I like to have things open and fluid” and “I like to operate with timetables and schedules” (reverse coded). Alpha Reliability was .66 and variance accounted for was 6.65%. Multi-tasking included 2 items: “I prefer to combine several tasks at the same time”, and “I do not like to engage in several activities at the same time” (reverse coded). Alpha reliability was .76 and variance accounted for was 5.65%. Patience consisted of 2 items: If I find a speaker boring, I listen and wait respectfully” and “If I find a speaker boring, I try to liven things up or leave” (reverse coded). Alpha Reliability for this factor was .75 and it accounted for 5.72% of variance.

Discussion

Of the 78 original Lewis items, only 28 held up to factor analysis and showed satisfactory reliability for measuring three aspects of Communication Style ( Interruption, Showing Emotion, and Conflict Avoidance), two aspects of Relationships (Mix Social/professional and Face), and
three aspects of Time (Schedule Flexibility, Multi-tasking and Patience). However, we did not have any items that captured the Space context, and there are other concerns that warrant further elaboration of the scale content.

**Study 2: Further Development of the CSIS Scale**

**Survey Development**

Since many aspects of CSIS were not captured by the 28-item scale survived from the Lewis survey, we borrowed and created items to fill the void, continuing the process of item identification in Study 2. For communication style, in addition to Lewis’ items, we also included Holtgraves’ direct/indirect scale (Holtgraves, 1997), Gudykunst’s communication scale (Gudykunst, 1996), and Thomas & Kilman’s (1974) scale. For the interpersonal relationship component, we included items from Gudykunst that measured interpersonal sensitivity and openness, Yamagishi’s (1994) items on trust, and created our own items. For the time component, in addition to the Lewis items, we included Tinsley’s four items measuring multi-tasking. Finally for the space component, we included Gudykunst’s items on silence and dramatic expression, and developed new items to reflect people’s understanding and behavior regarding closeness, loudness, visual contact, and touching in communication. As a result, the survey consisted of a total of 258+ items.

**Participants**

The participants were 2,818 Americans who lived in different parts of the U.S. The average age was 40.62 (SD = 11.20), 51% of them were male, with over 95% of them being Caucasians. On average, this sample speaks 1.12 languages (SD = .33), lived more than 6 months in 1.08 countries (SD = .28), and had 2.80 months (SD = 15.31) of international business experiences. Approximately 15.3% had high school education, 67.7% had some college or 4-year
college, and 15.4% had graduate degree (Master or above). Their occupation covers a wide range, from architectural engineering to business and financial operation to construction and extraction, to farming fishing and forestry, to health care, to transportation, etc.

**Procedures**

Pilot testing of the survey indicated it was too long to administer at one time. Participants suffered from frustration and fatigue. Therefore, we divided the items into three sub-surveys (labeled communication, relationship, and space/time respectively) and randomly assigned one of the sub-surveys to each participant in order to reduce the potential exhaustion effect. The same processes in Study 1 were adopted to ensure the quality of the survey responses.

The surveys were posted on a secure website by Zoomerang, and participants volunteered to participate. At the end, 981 participants completed the Communication survey, 922 participants completed the Relationship survey, and 909 participants completed the Space/Time survey.

**Results**

We report two sets of results that test internal consistency reliability of the items. Using separate samples, we first report results from exploratory factor analysis (EFA) that used half of the data; and then we report results from confirmatory factor analysis (CFA) that used the other half of the data (Hinkin, 1995; DeVellis, 1991).

*EFA Results.* Upon a close look of the data, we found that some participants left many questions unanswered; as a result, these participants (a total of 254) were excluded from further analyses. We then randomly selected roughly half of the participants from each sample to run the EFA using varimax rotation. We report these results briefly in text format as subsequent results provide more detail on scale items.
First, 10 factors emerged from the Communication survey, explaining 63.82% of the total variance. These factors were: emotion expression (7 items, \( \alpha = .88 \)), hiding meaning (4 items, \( \alpha = .77 \)), uncovering deep meaning (5 items, \( \alpha = .84 \)), guessing meaning (4 items, \( \alpha = .81 \)), ambiguous communication (6 items, \( \alpha = .82 \)), guessing feelings (7 items, \( \alpha = .84 \)), avoid conflict/tension (4 items, \( \alpha = .78 \)), avoid argument (6 items, \( \alpha = .84 \)), assertive persuasion (7 items, \( \alpha = .83 \)), and precise communication (3 items, \( \alpha = .71 \)). Second, eight factors emerged from the Relationship survey, explaining 64.87% of the total variance. They included: humbleness in communication (13-item, \( \alpha = .86 \)), truth bending (6-item, \( \alpha = .88 \)), attention to status (4-item, \( \alpha = .82 \)), initiating conversation (4-item, \( \alpha = .81 \)), importance of networking (2-item, \( \alpha = .70 \)), face saving (3-item, \( \alpha = .83 \)), importance of familiarity (3-item, \( \alpha = .75 \)), and work/life mix (3-item, \( \alpha = .65 \)). Finally, nine factors emerged from the Space/Time survey, explaining 62.15% of the total variance. They were: no touch/no eye contact (8-item, \( \alpha = .85 \)), vivid communication (6-item, \( \alpha = .85 \)), touching is good (7-item, \( \alpha = .83 \)), facing directly (4-item, \( \alpha = .86 \)), interruption (4-item, \( \alpha = .76 \)), silence (5-item, \( \alpha = .73 \)), multi-tasking (4-item, \( \alpha = .74 \)), loudness (2-item, \( \alpha = .71 \)), and physical closeness (2-item, \( \alpha = .86 \)).

These factors seem to represent each component of the CSIS more adequately than the 28-item scale survived from the Lewis survey. To further test the convergent/discriminant validity, we conducted CFA using the other half of the data.

*CFA Results.* The CFA results are presented in Figures 1a, 1b, and 1c. It can be seen that an 8-factor model fit the data well for the Communication survey (CFI = .91, IFI = .91, NNFI = .90, RMSEA = .08, n=403, df = 271), a 7-factor model fit the data well for the Relationship survey (CFI = .91, IFI = .91, NNFI = .90, RMSEA = .01, n = 421, df = 303), and a 6-factor model fit the data well for the Space/Time survey (CFI = .92, IFI = .92, NNFI = .90,
RMSEA = .07, n = 411, df = 120). Therefore, a 21-factor model with a total of 71 items was the resulting measurement of CSIS.

----- Insert Figures 1a, 1b, and 1c about here -----

Discussion

A closer look at the CFA results indicates that while the dimensions of Communication Style and Relationship are well represented, the items representing the Time and Space dimensions are still not adequate. For example, there is only one component (multi-tasking) that taps into the Time context, whereas some aspects of Space such as loudness or closeness are not represented. Therefore, in Study 3, we created new items to capture the context of Time and Space more appropriately.

Study 3: Further Development of the Time and Space Measures

Survey Development

Based on a broader search of the current literature on Time and Space, we created 48 new items to capture the missing components in the Time and Space dimensions of CSIS. Some of the items were adapted from existing scales (e.g., Monochronic/Polychronic Orientation Scale developed by Bluedorn, Kalliath, Strube, & Martin, 1998 org culture dimension), other items were created by the authors after many rounds of discussions. All of these items were designed to measure time orientation, attitude toward deadline, schedule flexibility, tolerance for lateness or interruptions of the Time dimension and dramatic facial expression, physical closeness and loudness of the Space dimension.

Participants and Procedure

The survey was conducted through Zoomrangi. Two hundred and fourteen people participated in the on-line survey. The mean age of the sample was 37.1 (SD = 11.7), and
approximately 48% of the participants were female. On average, 78% of the participants speak one language and 80% of them have lived in one country. On the other hand, 10% of participants speak two languages, and 7% of them lived in two countries more than 1 year. Moreover, this sample had an average of 2.8 months (SD = 6.88) of international experience.

Results

Study 3 was designed primarily for item identification. Therefore, we present results only for EFA (principal component with varimax) for the new items. The analysis yielded an 8-factor solution, with four new factors representing Time and four new factors representing Space. The four new factors in the Time dimension are: Multi-tasking (10-item, alpha = .89), Schedule flexibility (4-item, alpha = .77), Time value orientation (3-item, alpha = .65), and Deadline Salience (2-item, alpha = .77). The four factors in the Space dimension include Dramatic communication (10-item, alpha = .87), Loudness perception (2-item, alpha = .80), Physical closeness (4-item, alpha = .76), and Attitude toward close distance (2-item, alpha = .89). Thirteen items did not load significantly on any of the above factors and were dropped from further analysis.

These results help address one of the most serious weaknesses in the existing CSIS measure, i.e., lack of items that measure the various aspects conceptualized in the Time and Space dimensions of the CSIS framework. With these new 35 items adding to the 71-item scale developed in Study 2, we are ready to conduct a full fledge convergent/discriminant validity test of our newly developed CSIS scale (Hinkin, 1995; DeVellis, 1991).

Study 4: Test of the Convergent/Discriminant Validity of the CSIS Scale

Participants and Procedure
The survey contained a total of 106 items (71 items from study 2 and 35 items from study 3). Four hundred and sixteen people participated in this survey of 106 items through Zoomerang. The mean age of the sample was 38.6 (SD = 11.5), and approximately 54% of them were male. 71% of the participants speak one language and 75% of them have lived in one country. On the other hand, 14% of the participants speak two languages and about 8% of them have lived in two countries for more than 1 year. Moreover, participants in this sample had an average 2.5 months of international experience.

**Results**

We conducted two sets of CFAs in this study. First, we conducted a CFA on the overall fit of the data to the 4-dimension model of CSIS by comparing the 4-factor model with alternative 3-factor models. After we see the results that the 4-factor model fits the data the best, we then conducted CFAs for each of the four dimensions to demonstrate the fit of its components, respectively.

**CFA results on overall model fit.** Table 2 summarizes the model fit comparisons:

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

These results suggest that the 4-dimension full model fits the data the best, which support our theoretical conceptualization of the CSIS framework.

**CFA results for each of the 4 dimensions.** Separate CFAs were conducted to test the model fit for each of the dimensions. The analyses revealed that for Communication Style, a 7-factor model fit the data well (CFI = .93, IFI = .94, NNFI = .94, RMSEA = .05, Chi-Square = 230.57, df = 168). The seven factors are: Emotion Expression (3 items, alpha = .63), Inferring meaning (3 items, alpha = .75), Ambiguity in communication (3 items, alpha = .68), Inferring feelings (3 items, alpha = .74), Avoid conflict/tension (3 items, alpha = .84), Avoid argument (3
items, alpha = .84), and Assertive persuasion (3 items, alpha = .80). For Relationship Context, we found that an 8-factor model fit the data well (CFI = .91, IFI = .91, NNFI = .90, RMSEA = .06, Chi-Square = 892.37, df = 436). The eight factors are: Humbleness in communication (8 items, alpha = .68), Truth bending (4 items, alpha = .81), Attention to status/hierarchy (4 items, alpha = .71), Initiating conversation (3 items, alpha = .73), Importance of network (2 items, alpha = .63), Face saving (3 items, alpha = .72), Importance of familiarity (3 items, alpha = .71), and Work/Life Mix (5 items, alpha = .83).

For the Time context, we found that a 4-factor model fit the data well (CFI = .92, IFI = .92, NNFI = .90, RMSEA = .07, Chi-Square = 244.74, df = 84). The four factors include Multi-tasking (6 items, alpha = .84), Schedule flexibility (4 items, alpha = .76), Time-value orientation (3 items, alpha = .70), and Deadline salience (2 items, alpha = .74). Finally, for the Space context, a 9-factor model fit the data well (CFI = .93, IFI = .93, NNFI = .91, RMSEA = .06, Chi-Square = 530.34, df = 263). The nine factors include No touch/No eye contact (2 items, alpha = .69), Touching is good (3 items, alpha = .70), Facing directly (3 items, alpha = .92), Interruption (3 items, alpha = .56), Silence (3 items, alpha = .64), Dramatic communication (5 items, alpha = .72), Loudness perception (2 items, alpha = .73), Physical closeness (3 items, alpha = .67), and Attitude toward close distance (2 items, alpha = .89).

A complete 94-item CSIS scale is presented in Table 3.

Discussion

Table 4 presents a summary of the item generation and validation process across the four studies. We used multiple rounds of item generation and internal consistency testing so that we could capture the full breadth of the communication, relationship, time, and space aspects of
low/high context in Hall’s many writings that we believe will be relevant and useful for management and marketing researchers.

This study makes several important contributions to cross-cultural research. First, the CSIS construct challenges and expands the current study of culture in organizational research by moving beyond the unstated assumptions of cultural values to explore the adaptive side of culture, which is more observable and measurable. Second, by clearly defining four dimensions of CSIS, we clarify the complex role of contextual information in the communication process and how cultures may vary in the kind of context they attend to in social interaction. This classification provides a new perspective to view cultures and cultural differences. With a conceptual and measurement approach such as ours, we are able to expand the dichotomous low/high context classification to account for multiple other kinds of cultures, including Direct, Expressive, and Reserved cultures. CSIS can also be applied at the individual level to describe an individual’s communication and social interaction style.

Third, the definition and composition of CSIS we propose allows us to develop a reliable and valid measurement tool. Unlike existing measures of direct/indirect communication, the final version of the CSIS scale captures the full scope of Hall’s conceptualization of culture as communication. Moreover, the establishment of a valid measure is likely to facilitate future research in identifying antecedents and consequences of CSIS, and in developing a nomological network of CSIS. For example, possible consequences of CSIS in an organizational setting could include its influence on misunderstanding and conflict between work team members (based on the measure of communication style), planning behavior (based on the measure of time), and the role of relationships or social norms in driving people’s behavior in the workplace (based on measures of relationship and space). Furthermore, future research can also examine the
relationship between CSIS and leadership style and the effects of person-organization fit given
different organizational cultures.

The next step in scale development is to test CSIS scales along with existing related
scales show construct validity and external discriminant validity (Hinkin, 1995; DeVellis, 1991).
We will then test cultural antecedents of CSIS (e.g. individualism/collectivism,
analytical/holistic thinking) and organizational consequences of CSIS, such as those indicated
above. In addition, we are beginning to translate the scale into different languages for cross-
cultural testing and validation.
References


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<table>
<thead>
<tr>
<th>Communication Style</th>
<th>Relationships</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Interruption</td>
<td>Showing Emotion</td>
</tr>
<tr>
<td>In conversation, I always wait for a pause before I speak</td>
<td>.74</td>
<td></td>
</tr>
<tr>
<td>I often interrupt other speakers ®</td>
<td>.75</td>
<td></td>
</tr>
<tr>
<td>When someone else is talking, I never “talk over” them</td>
<td>.73</td>
<td></td>
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<tr>
<td>When I’m in conversation, I listen</td>
<td>.60</td>
<td></td>
</tr>
<tr>
<td>When I deal with people, I let my emotions show</td>
<td></td>
<td>.78</td>
</tr>
<tr>
<td>If I see something wrong, I tell people how I feel about it</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When I make a suggestion, I show how I feel about it</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I usually do not let my feelings show ®</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In general, I say what I feel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I argue my points passionately</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When I disagree with someone, I let my feelings show</td>
<td></td>
<td></td>
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<tr>
<td>When I argue, I avoid confrontation</td>
<td></td>
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<tr>
<td>When I disagree with someone:</td>
<td></td>
<td></td>
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<tr>
<td>I demonstrate the weaknesses in their argument ®</td>
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<tr>
<td>I avoid direct conflict</td>
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<tr>
<td>When my work is finished for the day:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like to continue personal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>discussions</td>
<td>If I lose face in a situation:</td>
<td>I like to have things open and fluid</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>I like to involve my colleagues in other aspects of my life</td>
<td>it is an extremely unpleasant experience for me</td>
<td>I like to have things open and fluid</td>
</tr>
<tr>
<td></td>
<td>it makes me annoyed</td>
<td>I like to operate with timetables and schedules®</td>
</tr>
<tr>
<td></td>
<td>it makes me unhappy</td>
<td>I like to work with highly flexible schedules</td>
</tr>
<tr>
<td></td>
<td>I do everything to avoid losing face</td>
<td>I like to work with unpredictable schedules</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If I find a speaker boring:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I listen and wait respectfully</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I try to liven things up or leave</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I prefer to combine several tasks at the same time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I do not like to engage in several activities at the same time®</td>
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</tr>
</tbody>
</table>

| .84 | .74 | .53 |
| .74 | .75 | .71 |
| .73 | .77 | .69 |
| .60 |  | .81 |
|  | .88 | .82 |

| .82 | .82 |
Table 2: Study 4 CFA Model Comparisons

<table>
<thead>
<tr>
<th>Model</th>
<th>CFI</th>
<th>IFI</th>
<th>NNFI</th>
<th>RMSEA</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\Delta \chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-dimension</td>
<td>.94</td>
<td>.95</td>
<td>.92</td>
<td>.06</td>
<td>62.55</td>
<td>48</td>
<td></td>
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<tr>
<td>3-dimension$^1$</td>
<td>.81</td>
<td>.82</td>
<td>.75</td>
<td>.11</td>
<td>111.36</td>
<td>51</td>
<td>48.81**</td>
</tr>
<tr>
<td>3-dimension$^2$</td>
<td>.82</td>
<td>.83</td>
<td>.77</td>
<td>.09</td>
<td>107.31</td>
<td>51</td>
<td>44.62**</td>
</tr>
<tr>
<td>3-dimension$^3$</td>
<td>.82</td>
<td>.83</td>
<td>.77</td>
<td>.09</td>
<td>107.63</td>
<td>51</td>
<td>45.08**</td>
</tr>
</tbody>
</table>

$^1$ Communication style & Relationships into 1 factor
$^2$ Time & Relationships into 1 factor
$^3$ Time & Space into 1 factor
Table 3: Study 4 The 95-item CSIS Scale

**Communication Style**

**Emotion Expression: alpha = .79**
- Feelings are a valuable source of information
- I orient to people through my emotions
- I use my feelings to determine how I should communicate.
- I trust my feelings to guide my behavior.

**Guessing meaning: alpha = .77**
- I catch on to what others mean even when they do not say it directly.
- I am able to recognize others’ subtle and indirect messages.
Even if I do not receive a clear response from others, I can understand what they intended.

**Ambiguity in communication: alpha = .71**
- I use silence to avoid upsetting others when we communicate.
- I avoid clear-cut expressions of feelings when I communicate with others.
- I use silence to imply my opinions.

**Guessing feelings: alpha = .76**
- I can tell when someone has something to tell me but is apprehensive about discussing it.
- I am very good at knowing the feelings other people are experiencing.
- I can tell from another person's behavior whether he or she likes me.

**Avoid conflict/tension: alpha = .70**
- When I argue, I avoid confrontation
- When I disagree with someone, I avoid direct conflict
- I generally avoid argument.

**Avoid argument: alpha = .81**
- I try to stay away from disagreement with another person.
- I try to keep my disagreement with others to myself in order to avoid hurt feelings.
- I try to avoid unpleasant exchanges.

**Assertive persuasion: alpha = .83**
- I argue my case to show the merits of my position.
- I am generally firm in pursuing my side of the issue.
- I assert my wishes.

**The Relationship Context**

**Humbleness in communication: alpha = .79**
- I try to adjust myself to others' feelings when we are communicating.
- I am modest when I communicate with others.
- I qualify (e.g., use "maybe," "perhaps") my language when I communicate.
- If I think the person will be hurt by my refusing an invitation, I provide additional reasons for my response.
- I listen very carefully to people when they talk.
- In interacting with someone I dislike, I keep my true feelings hidden.
- When flattered, I am humble.
- If I have something negative to say to others, I am tactful in telling them.

**Truth bending: alpha = .85**
- I often bend the truth, if it protects the social harmony
- I might make up information to make a story more interesting
- I often bend the truth if the truth would hurt someone.
- I often bend the truth if it will produce a better outcome in the end.
- Sometimes it is better not to tell the truth.
Attention to status/hierarchy: alpha = .82
I always begin conversations with a formal greeting
It is important to know someone's position so you can greet them accordingly
When addressing someone older than me, I tend to be rather formal
When addressing someone of a higher rank than me, I tend to be rather formal

Initiating conversation: alpha = .73
I find myself initiating conversations with strangers if I want to get to know them.
I am an extremely open communicator.
I can talk about intimate subjects about myself with most people.

Importance of network: alpha = .70
When doing business, I am most comfortable relying on my network of contacts
I feel more comfortable doing business with someone if we both know the same people

Face saving: alpha = .83
If I lose face in a situation, it makes me annoyed
If I lose face in a situation, it makes me unhappy
I do everything to avoid losing face

Importance of familiarity: alpha = .75
I feel more secure when I work with someone I know well than with someone I don't know.
A person with whom you have had a long relationship is likely to help you when you need it.
The people I trust are those with whom I have had long-lasting relationships.

Work/Life Mix  (alpha = .83)
I like it when my work colleagues know my family
It is important to keep work life and personal life separate ®
I consider my work colleagues an important part of my social circle
I often take my colleagues home to meet my family.
Oftentimes my clients or colleagues are my closest friends.

The Time Context

Multi-tasking
When I sit down at my desk, I work on one project at a time
I would rather complete an entire project every day than complete parts of several projects
When I work by myself, I usually work on one project at a time
I prefer to do one thing at a time
I do my best work when I have many tasks to complete®
I seldom like to work on more than a single task or assignment at the same time

Schedule flexibility
I usually operate with a daily schedule
Keeping to a schedule is important for me to get things done
I feel lost without a schedule or datebook.
I do not refer to a schedule or datebook often ®

Time value orientation
I feel it is very rude to be continually interrupted during a meeting with a counterpart
I feel it is very rude to be made to wait for a scheduled meeting with a counterpart
I view it as a sign of respect when my counterpart arrives on time for a meeting.

Deadline Salience
I pay strict attention to deadlines.
I feel great satisfaction in meeting deadlines.

The Space Context
No touch/No eye contact: alpha = .76
Touching someone during a conversation indicates a loss of control.
When speaking to someone I tend not to look at them.
Looking directly in the eyes of someone older or higher in status than oneself is impolite.

**Touching is good: alpha = .77**
I do not normally touch someone when I am talking to them. (R)
During a conversation, I will frequently touch the person I am talking to.
It is not unusual for me to hug or kiss someone before or after a conversation.

**Facing directly: alpha = .90**
If I do not directly face someone during a conversation I would be expressing inattentiveness.
If I do not directly face someone during a conversation I would be impolite.
If I do not directly face someone during a conversation I would show them I am uninterested.

**Interruption: alpha = .70**
I often interrupt other speakers (R)
When someone else is talking to me, I never talk over them
When I'm in conversation, I listen

**Silence: alpha = .73**
I think untalkative people are boring.
I feel uncomfortable if everyone else is talking except me in a social situation.
I do not like silences in conversations.

**Dramatic communication**
I tell jokes, anecdotes, and stories when I communicate
I tend to constantly gesture when I communicate
I verbally exaggerate to emphasize a point
I know how to build tension when I tell a story
I use a lot of colorful words when I talk

**Loudness perception**
It annoys me when people speak loudly
I would be acting rudely if I spoke loudly

**Physical closeness**
I typically touch someone on the arm when I say hello
When I am talking to people, I am not comfortable when there is a desk or some other barrier between us
When talking with someone, I like to be close enough to them so that I could easily touch them.

**Attitude toward close distance**
I would be acting rudely if I would stand so close to someone I’m talking to that I could easily put my arm around them
I would be acting pushy if I would stand so close to someone I’m talking to that I could easily put my arm around them
Table 4
Summary of Dimensions Captured Across 4 Studies

<table>
<thead>
<tr>
<th>CSIS Component and Key Dimensions</th>
<th>Study 1</th>
<th>Study 2 (CFA results)</th>
<th>Study 3</th>
<th>Study 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Style</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Indirect expression</td>
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<td>yes</td>
<td>yes</td>
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<tr>
<td>Indirect attention</td>
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<td>yes</td>
<td>yes</td>
<td>yes</td>
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<tr>
<td>Conflict management</td>
<td></td>
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<td>yes</td>
<td>yes</td>
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<tr>
<td>Persuasion style</td>
<td></td>
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<td>yes</td>
<td>yes</td>
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<tr>
<td>Showing emotion</td>
<td></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
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<tr>
<td>Relationship context</td>
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<tr>
<td>Hierarchy/roles</td>
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<td>yes</td>
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<td>yes</td>
</tr>
<tr>
<td>Harmony/Face maintenance</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
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<tr>
<td>Work/life mix</td>
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<td>yes</td>
<td>yes</td>
<td>yes</td>
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<tr>
<td>Truth telling</td>
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<td>yes</td>
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<td>Time context</td>
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<td>Time value orientation</td>
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<td>Deadlines</td>
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<tr>
<td>Multi-tasking</td>
<td>yes</td>
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<tr>
<td>Space context</td>
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<tr>
<td>Distant/close space</td>
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<tr>
<td>Touch</td>
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<td></td>
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</tr>
<tr>
<td>Interruption</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Silence</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Dramatic expression</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Other dimensions Captured that were not predicted</td>
<td>patience</td>
<td>Humble communication Facing directly</td>
<td>Loudness perception</td>
<td>Humbleness Facing directly Loudness</td>
</tr>
</tbody>
</table>
Figure 1a: Study 2 CFA Results for the Communication Survey

Chi-Square=937.75, df=271, p-value=0.06000, RMSEA=0.081

Figure 1b: Study 2 CFA results for Relationship Survey
Figure 1c: Study 2 CFA results for Space/Time Survey
Chi-Square=420.04, df=120, P-value=0.00000, RMSEA=0.078