Using Associative Group Analysis Methodology to Explore Unrecognized Cultural Background Knowledge in Cross-Cultural Communication Research

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1. Introduction

The aim of this paper is two-fold. The first purpose is to describe a research methodology that can analyze cultural background knowledge as a predictor in cross-cultural communication. This area of research is consequential because our cultural background knowledge or schema plays a significant role in communication. We often fail to recognize the communication values that, for the most part, smooth communication with people from the same culture. For example, Americans background knowledge assumes "directness" and "equality" while Japanese communication tendencies are towards "indirectness" and "social hierarchy". Such contrasting schemas are unrecognized for each speaker so that communication can be accomplished with little effort. However, when speakers from other cultures communicate, this background knowledge often differs and is often the underlying cause of cross-cultural misunderstandings. Thus, this paper addresses an important question asked by those in teaching and training in the field of Intercultural Communication (IC) - "How can we bring these culture-specific "assumptions" to a higher level of awareness?

The second purpose of this paper is to describe a research methodology relevant to IC that can be replicated and used as a way to train and educate students, business people or affected government officials. The application of this methodology can make cross-cultural participants more aware of the large cultural differences that go unrecognized in the communicative context which may adversely affect their decision making ability in a consequential situation.

2. Methodology Justification

Several cross-cultural studies have adapted a relatively new and particularly useful approach to analyzing cultural communication differences. First, Szalay and Deese's (1978), original Associate Group Analysis (AGA) methodology sought to permit a systematic way to compare cross-national beliefs by clarifying how two distinct groups integrate their perception and understanding of the world around them. More recently, Linowes et. al. (2000) have taken up this research and adapted it in an innovative way to better show visually these differences and their salience. In that study, AGA methodology was performed on Japanese and American business students to explore subjects understanding of key business management terms (Linowes et. al. 2000:71). The results produced visually appealing charts that clearly show the dominant mindsets of the participants' two respective countries which can help predict each groups expectations better. These dominant mindsets are represented by two graphic charts called a "semantograph" and a mental or meaning map (Linowes et. al. 2000:75). This methodology offers a more in-depth content analysis of the overall data than that of survey instruments alone.

> "Associative group analysis is an unstructured method of research used to reconstruct people's subjective images from the spontaneous distributions of their free associations. The method relies on the analysis of free associations to reconstruct the internal world and subjective meanings of people, arenas inaccessible by more direct methods. The basic unit of analysis is the stimulus word, or theme word, which evokes these associations and hence serves as a key unit in the perceptual representational system" (Linowes et. al. 2000:75-76).

The advantage of more direct methods of research, such as traditional survey instruments, is that they can highlight data from a large number of subjects and thus give a broader cross-sectional snapshot. Although these quick "snapshots" of subjects' opinions often fail to achieve a significant level of depth in their analysis, they can be tested for validity using statistical measures. Because AGA methodology does not formally test for significance as survey instruments can, it can be criticized for being less objective. However, it is argued here and indeed in the field of Intercultural Communication, that

subjective data is how we make meaning of the world around us. Objective data alone cannot further our understanding of how much a particular group values something or how salient it is in a particular context. Although, not all scholars necessarily agree on what exactly makes up a culture, it is clear that it is a phenomenon shaped by our personal experiences and worldview. That is, culture-specific knowledge is more likely to be shared by people with similar backgrounds, perceptions, experiences and motivations to hold a common "mental map" (Linowes et. al 2000:75) but unique from another group of people living in a different areas of the world.

Therefore, AGA methodology is intended to measure the following areas:

1. highlights thinking patterns across national groups
2. "…allows for a deeper level of understanding of cultural differences and provides an approach that may have greater predictive power and utility for cross-cultural research and cross-cultural training"
3. "…determine (s) how people actually perceive and evaluate a particular issue or concept…"
4. measures "…the deep layers of spontaneously held beliefs" of each national group (Linowes et. al. 2000:75-77).

Used in conjunction with more traditional survey instruments then, AGA methodology can offer much needed depth and richness to previously collected data as participants are allowed to freely and spontaneously associate theme words with the target data. Thus, the two approaches offer a practical and productive methodological counterbalance.

This approach of first using a general cross-sectional questionnaire to gather cross-cultural data in an exploratory fashion followed by the Associative Group Analysis methodology shall be presented and discussed in this paper. By approaching cross-cultural research in this way, it is believed that culture-specific communication can be linked to the larger concept of a speaker's national cultural background but also have more depth and objectivity. Matsumoto (1994) has specifically targeted what cultural influences can have on research methods. This study has used his examples (1994:48-51) as a model for analyzing nominal data that can help explain cultural influences in the final data analysis.

3. Terms

The terms "schema (ta)" and "background knowledge" are used interchangeably to imply unrecognized culture-specific knowledge that the speaker uses to interpret a text or utterance. "Intercultural" is used in a broader sense than "cross-cultural". The latter shall refer to two specific national cultures such as Japan and the US. Finally, "culture" is referred to as a *"pattern of learned group-related perception…that is accepted and expected by an identity group"* (Singer 1998:52).

4. Variables in Cross-cultural Research

Before starting the process of collecting data and analyzing it, it is useful to clearly define the variables and assumptions involved. The two research variables in this research are Japanese and American background knowledge. The ultimate goal of the methodology described in this paper is to shed light on the hidden knowledge that each cross-cultural participant brings to the communicative context that may result in a misunderstanding. Of course, one must assume that culture-specific background knowledge does indeed exist and does indeed affect cross-cultural communication in a significant way.

Thus, the variables for a cross-cultural study seeking to highlight the difference in communication can be defined as follows:

- **Dependent variable:** the cross-cultural misunderstanding or difference. It is dependent on the native culture's (C1) schemata.
- **Independent variables:** specific C1 schemata interpretations.
- **Intervening variable:** a person's personality or internal mental processes that we cannot identify for inclusion in the research.

In an indirect way, the output of a specific intervening variable itself is being explored since culturally specific schemata are often an internal or unrecognized process built-into the speaker's communication strategy. However, it is believed that by generalizing the study via cross-cultural questionnaires, there will be ample evidence that the both American and Japanese subjects each use a different set of cultural knowledge to interpret the same speech event in a unique way.

The null hypothesis (H0) is that culturally specific schemata have no influence on

cross-cultural miscommunication in the study. Some may argue, especially those in second language theory, that lexical differences can account for miscommunication. However, up to this point, an argument has been made for the existence of deeper unrecognized socio-cultural based schemata as the root of the most serious cross-cultural misunderstandings. The alternative hypothesis (H1) is that schema affect people in different ways and are not necessarily a product of cultural upbringing. That is, culture is too diverse or too amorphous, affecting each person differently (see Holliday 1999) and, therefore, cannot be linked to specific cross-cultural misunderstandings.

5. Research Design

The overall research design for this cross-cultural study was composed of three correlated components seen in Table 1 below.

Table 1—Research Design

Pre-testing	Cross-Cultural data collection	
	Part I	Part II
*Empirical data collected from impromptu student interviews, tests, journals, video	***Cross-sectional survey methodology** *Test for response significance: chi-square * **Control group study** *Test for Language differences: Chi-square *Test for culture response sets: ANOVA	* **Associative Group Analysis methodology** * Final Content analysis

The purpose of the design was to correlate the responses collected using traditional survey instruments (Part I) with a more open-ended qualitative approach (AGA methodology) in Part II that could yield a deeper level of analysis.

5.1 Background

The example data collection for the study described in this paper targets two national groups of cross-cultural participants: Japanese and American university students. These were "convenience samples" as the Japanese participants were students at the author's university and the American students were from a colleague teaching in the US.

For Part I, a large cross-sectional traditional survey instrument in the form of a multiple choice questionnaire was distributed to both national groups (See Appendices A and B). Because cross-cultural survey instruments were used in two different languages, one in English (Appendix B) for the Americans and its translated copy in Japanese (Appendix A) for the Japanese participants, it was necessary to establish a control group in order to analyze validity issues common to cross-cultural studies. Specifically, some cultures react differently to questionnaires. Japanese participants, for example, tend to check off fewer answers on survey type instruments than Americans do. This validity issue has been called *cultural response sets* (Matsumoto 1994:33) and is discussed further in section 6.3.2.

The initial cross-cultural questionnaire (Appendix A and B) sought to identify if there was potential for subjects to use a culture-specific background knowledge to interpret information differently than their cross-cultural counterparts. This was attempted done by having respondents choose the best interpretation of a short conversation.

The questionnaire and its formulation started with informal interviews of small groups of Japanese students. This was done to measure any unforeseen problems in interpreting the questions and also for any needed modifications in language style or preference. One of the goals of each question was to make it simple, even generic in nature, so that subjects would have to activate their C1 schema to interpret the conversation or situation. This phenomena has been observed in the author's past research (Ryan: 2000). These initial test students were not used in the final version of the questionnaire (Part I). After minor difficulties, such as unclear lexis, were modified, the final version of the questionnaire was translated from English to Japanese. The original English version was sent to American respondents in three separate areas of the US: East, Southwest and Northeast. Students living in America whose native language was not (American) English were excluded from consideration.

6. Procedures

6.1 Empirical Data Collection

Before the final version of the Part I the multiple-choice questionnaire was completed, empirical data was informally collected in order to formulate potential areas where miscommunication may occur with native English speakers. This process took approximately one year. Collections methods used included the use student journals, video/audio recordings and small group interviews.

6.2 Questionnaires — Part I

Once the questions were formulated with the aid of the preliminary empirical data, a cross-cultural questionnaire was made and translated into Japanese (Appendix A) with the aid of two native Japanese speakers. It was then administered to 140 undergraduate university level Japanese students in Japan. These participants were not EFL students and were different from participants from which the empirical data originated. Participants were allowed 30 minutes to complete the questionnaire. The English version (Appendix B) was mailed to an American professor at a mid-west university in the US to administer it within the same time limit before mailing it back to Japan. The two language versions of the same questionnaire revealed the following demographic information:

Table 2

Cross-sectional Data:
Questionnaire (Part I)

Appendices A & B

Japanese	**American**
N= 140	N=47
Age =20.18	Age = 21.87
M = 91	M = 22
F = 49	F = 25

Once all the data were collected, the following procedures were performed on both language versions of the questionnaire.

First, the Japanese respondents' answers were translated into English and totaled for comparison with their American counterparts. The translation was performed by two native Japanese speakers. One Japanese speaker assistant back translated the first translation into English to verify any translation problems. The data collected from Part I are dichotomous, nominal data yielding frequency data. Participants were asked to check the best answer below a short conversation linked to a concept thought to be problematic cross-culturally. Subjects checked as many boxes as they thought appropriate for each conversation or situation. Therefore, raw scores for both Japanese and American respondents could be totaled in (see Appendix B) as a percentage of the total number answered for their own group. For example, in situation one (Appendices A and B) where two friends are discussing a grandfather's funeral, only 5.0% the total 140 Japanese respondents checked answer c) "Tom is a little strange", while 45% out the total 47 of the Americans checked the same response.

Part I questionnaire sought to test specific concepts thought to be problematic in communication between the two nationalities based on empirical data. For data presented in this paper, problematic cross-cultural language behavior such as meeting someone new, exchanging greetings, inferring from a particular physical appearance, new job expectations, leadership qualities, and personal space concepts were tested. For each a concept a short conversation is given from which participants choose the best answer to what is happening. The methodology for Part I compared the data collected from the cross-cultural questionnaires (Appendices A and B) using sample frequency data and a Chi-square test for significance (see Appendix D).

6.3 Control Study

Why establish a control group? Before we can discuss a study's final results, we must first to determine whether or not certain questions have potential validity issues so that they can be accounted for in the final study as well as offer additional cultural data to the final analysis.

6.3.1 Language of questionnaire

Translation of the questionnaire is in itself an important methodological issue to the study that presents several problems. We wanted subjects to be presented with the same information in order to equalize the data so that the results could then be compared.

However, two languages are not word-for-word translatable. It is possible that subjects would have chosen different answers if they had been given the "English only" version of the cross-cultural questionnaire. For this reason, a control group was established to test this validity issue via Chi-square test with the equivalent number of Japanese subjects randomly selected from the Japanese version (See Appendix C).

First, a small control group consisting of 24 undergraduate university EFL Japanese students was selected at the author's school who had not participated in previous surveys to answer the main study, Part I questionnaire in English. Then, to keep the design balanced, 24 out of the original 140 Part I Japanese translated questionnaires were randomly selected to use as the contrasting variable. The purpose of this or any non-parametric data were not to make cause-effect claims but rather to reject *the null hypothesis (Ho) that there was no relationship between the Japanese and English version of the questionnaire for the Japanese participants.* That is, were there any differences when Japanese participants took the English questionnaire as opposed to the Japanese version. We would expect some significant differences to appear due to the differences in languages.

6.3.2 Testing for Cultural Response Sets

Another major area of concern for cross-cultural surveys is what can be called *cultural response sets* (Matsumoto 1994:33) or *extreme response sets* (Cheung and Rensvold 2000:189). Some cultures respond to questionnaires differently by, for example, checking more or, as in the case of Japanese, choosing fewer answers that are not overly strong or opinionated. To check for control response sets, the raw data for each question in Part I were compared with the control group data. This comparison was done using an ANOVA procedure described in the methodology section 7.3.

6.4 Associative Group Analysis - Part II

After this general cross-sectional data has been collected and analyzed, the researcher has a better idea of what areas of communication differ or may be problematic for each national group. *Associative Group Analysis (AGA)* methodology (Linowes et. al 2000) can now be used on a new set of participants within each national group to explore potential of the problematic areas of the cross-culture context. The exact procedures for data collection for each stage of data collection are described below.

The AGA questionnaires were administered in both Japanese (Appendix E) and English (Appendix F). To ensure reliability, each theme word was translated by a native Japanese speaker, and then back translated by a different native Japanese speaker. The questionnaire was administered to 40 Japanese undergraduate level students at a Japanese university in Japan. At the same time, questionnaires were administered to 40 different American undergraduate students at the same large mid-western university in the US.

One problem resulted in the data collection stage. Nine out of the forty American participants were not native (American) English speakers and had to be excluded from the study. To keep the study properly balanced then, nine of the forty Japanese questionnaires were randomly chosen to be excluded from the study as well. It is believed that this did not have a significant impact on data results.

Below each theme word are 8-10 blank lines for participants to freely associate with the theme word given (see Appendices E and F). That is, participants are allowed to write whatever came to mind without any restrictions. The goal of this technique if or participants to spontaneously produce data based on their cultural background knowledge. Participants were given one minute to complete each theme word association and were not allowed to go back and modify their first answer.

The American respondents' questionnaires were mailed back to Japan to be compared with the Japanese responses. The Japanese questionnaires involved time-consuming translation and meaning verification between a team of two native Japanese speakers and two native (American) English speakers. Once all the Japanese responses were translated into English and problematic expressions were discussed, the Japanese responses were aggregated into a point category to reflect the readiness with which the word came to mind using Kelly's test-retest method (1985) to be described in section 7.4. Likewise, the American respondents' answers were totaled for comparison and subsequent content analysis.

7. Methodology

7.1 Part I questionnaire

For Part I, a test for significance was performed using descriptive statistics to determine if there were any significant differences between the two respective groups responses. Specifically, all Part I questions were tested using an independent 2-level chi-square measurement procedure as the data involved frequencies. To keep the proce-

dure balanced, 47 out of the 140 Japanese questionnaires were randomly selected to compare with the 47 total American English questionnaires. The Chi-square computations performed on all the questions for Part I are listed in Appendix D.

7.2 Control Study: Test for language differences

Because of the small but equal number of subjects (N＝24), the significance level for the control study testing for language differences was chosen at p 〈.01. Each response was analyzed and if both responses did not have at least four responses, it was not tested. The independent variable was language — Japanese or English. The dependent variables were the boxes available for selection. An independent 2-level measurement procedure was performed using the Chi-square procedure to test for any significant differences in responses between the English language questionnaire and the Japanese language questionnaire taken from Japanese students. The significant results along with possible interpretations are reproduced in the results section 8.1.1.

7.3 Control Study: Test for Control Response Sets

As was discussed in section 6.3.2, one major limitation of any cross-cultural survey is the danger of cultural response sets. That is, the concern of whether or not a question means the same thing to both cultures surveyed (Matsumoto 1994:27) or when "one group systematically gives higher or lower responses than another group, resulting in a scale displacement" (Cheung & Rensvold 2000:190). However, for Part I (Japanese participants vs. American participants), cultural response sets may have had a much larger impact. Although this is a serious threat to the internal validity of our study, it is also an important part of it. In this research, we are looking to identify not just the "threats" to the data but how this culture-specific interpretation of the context of interaction creates misunderstandings. Therefore, to verify the internal validity of the study and to aid in the interpretation in the forthcoming results (section 8), cultural response sets were tested for each question in Part I using an ANOVA procedure adapted from Matsumoto (1994:51). Specifically, a one-way ANOVA test was performed using culture as a single, between subjects independent variable (see section 8.1.2, Table 8). To balance the test, an equal number (47) out of the total (140) Japanese language questionnaires were randomly selected to compare with the American subjects. The results are described in section 8.2.

7.4 Associative Group Analysis — Questionnaire Part II

For the data presented in the paper as a practical example, AGA methodology was performed on each participants' results yielding a list of words that the participant spontaneously associated with a given theme words. Some of the "theme words" were linked to the conversational situations in Part I to further investigate the concepts thought to be problematic in cross-cultural communication between Japanese and Americans. The example presented below is given as an example from Part I (question #1) concerning "funerals" since this concept showed a significant difference between the two groups. To perform AGA methodology, the *theme word* "funeral" was given to both cross-cultural participants yielding a correlated *response list* of words that each participant associates with it.

In this abbreviated data example, each participant's list of responses is weighted according to the readiness that the word came to mind (rank-order). The full result shall be displayed in section 8. The weighting of each response list was done empirically via differential stability of rank place using the test-retest method (Kelly 1985). This technique was modeled after Linowes' et. al. 2001 study. Starting at the top of each participant's word list, each word was ranked 6, 5, 4, 3, 3, 3, 3, 2, 2, 1…. For a word to be included in the weighting, it had to be generated on two or more participants' word lists. Thus, each theme, such as "funeral" , generated two response lists — one Japanese and the other American.

Table 3

"Funeral"

Example of a Weighted Response List and Scoring

Abbreviated scored responses to stimulus word "funeral" (*soushiki* 葬式)

American responses		Japanese responses	
Death	126	Black	59
Black	73	Sad/sorrow	56
Sad (ness)	73	Tears	40
Total (Salience):	272		155

Each national groups' word list can be totaled yielding a weighted response list or salience of word associations for a given theme word.

Thus, the total response list for each group yields a "mental map" that measure the

"dominant mindset" (Linowes et. al 2000: 71) of Japanese and Americans for the particular concept being tested. In addition, the salience of each theme is measured.

> "The salience of a theme is the total response score generated by all associations to that theme by all respondents. It is a measure of "meaningfulness," in the sense that it reflects the total magnitude of associations linked to the theme in respondents' minds and so serves as a measure of what is foremost in peoples' minds" (Linowes et. al 2001:78).

7.4.1 Content Analysis

The AGA method is intended to measure the participants' national cultural schema. This was aided by categorizing the response lists using *content analysis* by two native English speakers and one native Japanese speaker list.

The final method performed on the data collected involved creating a culture-based schema for each theme word via content analysis. This procedure was done by a team of two native (American) English speakers and one native Japanese speaker. Both groups' response lists are compared and anlayzed in the results section 8.2 in order "to determine the components of meaning for each word" (Linowes et. al. 2001:78). This schema creation was done by examining each word and creating a common set of broad-based categories for both national groups word lists.

Continuing with the example of "funeral", the Japanese participants listed words foremost in their minds such as, "*incense stick, temple block, white flower, and chrysanthemum*". These words are then combined into a single content category schema represented by the words "*Religious Props*". The word "prop" seemed is a more general schema which could hold the overall meanings to the more specific words.

Table 4 - Example of component analysis for "funeral"

Components of perception and evaluation of the stimulus word "funeral" (*soushiki*)

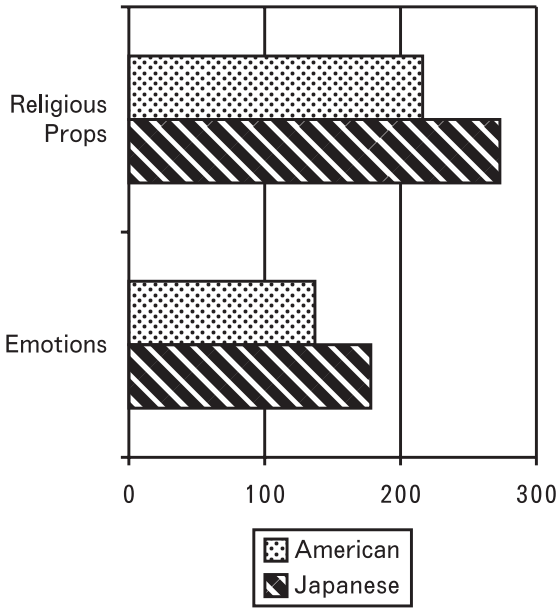
Content Category (Abbreviated) Underlying responses	American score	Japanese score
Emotions A: Sad (ness) (73), Cry (ing) (38), Dark/gloomy/Gray (13), Mourning (11) J: Sad/sorrow (56), Tears (40), Dark (23), Lonely/bereave (19), Mourning (18), Cold (8), parting/separation (6), Rain (6)	**135**	**176**
Religious Props: A: Black (73), Flowers (47), Coffin (34), Casket (24), Grave (yard) / cemetery (20), Limo/cars (9), Food (7), J: Black (59), Incense (29), Chrysanthemum (28), Grave (24), Flower (22), Black clothes (21), Temple block (11), Black & white (11), Bones (11), Temple (11), Coffin (10),White (10), Cross (8), Hearse (8) White flower (7)	**214**	**270**
Total:	**349**	**446**

As a result of categorizing by content both the American and Japanese participants words into an appropriate schema, two numbers (American and Japanese) were generated for each content category by adding the weighted score for each word. In the abbreviated "funeral" example (Table 4), Japanese participants recorded a total score of 446 versus 349 for the Americans. Thus, the salience or "meaningfulness" the word funeral was greater for these two content categories for the Japanese than for the Americans.

Once the content category point values were determined, a "semantograph" (Linowes et. al. 2001:78) can be created visually showing the associations each national group makes in each content category or their cultural schema (see Graph 1 below).

Graph 1

Example of a semantograph



Once all theme word responses are totaled for both groups, the salience of each theme word can be determined by adding the composite scores (see section 8.3.1) of each word list.

8. Results

8.1 Control Group Study

8.1.1 Test for language differences results

Out of the 12 situations tested from Part I of the main questionnaire, only two questions (#10,11 Appendix C) showed a statistically significant difference allowing us to reject the null hypothesis at the $p < .01$ level of significance for the other ten questions. Significant differences in the questionnaires are not surprising as language competence and social identity can play a strong role in how language is used. It is the relativity of language in regards to one's perception of cultural identity that is found to be most interesting. Again, the purpose of the control group was not to make casual claims, as there was not a true random sampling, but rather to become aware of validity issues before the analysis of the main study.

Table 5
Appendix C—Control Group Study Results
Question 10

10. Situation: You are at home and a stranger holding a box opens your front door and shouts, "excuse me". What would you probably do?

	Japanese	English	Chi-Square
[a]	1	2	-
[b]	0	2	-
[c]	5	8	.692
[d]	0	3	-
[e]	2	4	0.67
[f]	21	7	7.0***
[g]	2	3	-
[h]	3	4	.143
[i]	2	1	-

***p < .01

In Table 5, Question 10 shows a significant difference in one response. Response [f], "*I would ask him what he wants,*" was preferred by (Japanese) participants in their native language. The control group of participants who answered the English language version showed a significant preference when compared to the Japanese one. The Japanese participants may very well be mentally picturing themselves in Western living context where, at least in the US, it is alarming for a stranger/deliveryman to open your front door unannounced. In Japan, this is not the case. Delivery personnel, solicitors or neighbors often do this type of behavior, especially in rural Japan where many homes have no doorbells. As a result, the Japanese participants may be modifying their expectations due to a cultural perception of living in the "other" culture.

Table 6
Appendix C—Control Group Study Results
Question 11

11. Situation: You have just graduated from college and have a new job and are attending your first meeting. What actions would you probably do?

	Japanese	English	Chi-Square
[a]	7	11	.0889
[b]	1	1	-
[c]	5	4	0.111
[d]	3	3	-
[e]	13	1	10.29***
[f]	4	7	.818
[g]	1	1	-

***p 〈 .01

Question 11 (Table 6) revealed the largest discrepancy between the two language versions of the questionnaire. The Japanese language participants of the main study significantly chose [e], "*I would keep quiet and only listen to everyone attentively*" while the English language version participants preferred [a], "*I would introduce myself to everyone*" and [f], "*I would try to ask as many relevant questions as possible*" ; both of which one would expect in an American context. Clearly Japanese participants' perception of how to behave with Americans is influencing their response on the questionnaire. In a Japanese workplace context, one does not reveal his or her true position on matters until (s) he is aware of the other's feelings. This results in silence or indirectness and may be interpreted as respectfulness or humility by others with the same cultural identity. Conversely, American, who value directness and openness in the same context, would try to appear interested and active by asking a lot of questions. This behavior implies honesty and trustworthiness to those with the same cultural identity.

8.1.2 Test for cultural response sets

Using the methodology described in section 7.3, the Japanese control groups' (N＝24) responses were compared with the American participants scores in Part I. The number was equalized at 24 by randomly selecting only 24 of the 47 American questionnaires. All participants were allowed to check as many responses as they believed were relevant to the conversation in their native language. In the Table 7, we can see the total frequencies

for which the Japanese and American students checked the answers for Part I.

Table 7

Average response rates for Part I	
Japanese = 17.12	Americans = 21.08

The Japanese students averaged 17.12 checked boxes out of a total 87 possible boxes for Part I while their American counterparts averaged 21.08. Was this significant and were their cultural response sets at work? To answer these two questions, descriptive statistics were used to arrive at a mean and standard deviation for each question. Then, the one-way ANOVA test was done described in methodology section 7.3.

In Table 8, Questions 1,5,7,8,9,10,11 all show the Americans had a significantly higher mean than the Japanese did.

Table 8
Significant responses across questions for English and Japanese language versions of the questionnaire

1.

Response Data across Questions

	Japanese	American
Mean Responses	1.02	1.51
Sd	.145	.688

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	F Ratio
Culture (between groups)	5.64	1	5.64	22.83*
Error (within groups)	22.74	92	0.247	
Total	28.38	93		

*P 〈.05

5.

Response Data across Questions

	Japanese	American
Mean Responses	1.21	1.57
Sd	.463	.801

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	F Ratio
Culture (between groups)	3.046	1	3.04	7.12*
Error (within groups)	39.37	92	0.428	
Total	42.42	93		

*P 〈.05

7.

Response Data across Questions

	Japanese	American
Mean Responses	1.19	1.43
Sd	.398	.617

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	F Ratio
Culture (between groups)	1.35	1	1.35	5.02*
Error (within groups)	24.79	92	0.267	
Total	26.15	93		

*P 〈.05

8.

Response Data across Questions

	Japanese	American
Mean Responses	1.21	1.89
Sd	.463	.814

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	F Ratio
Culture (between groups)	10.87	1	10.87	24.78*
Error (within groups)	40.34	92	0.438	
Total	51.21	93		

*P 〈.05

9.

Response Data across Questions

	Japanese	American
Mean Responses	1.47	1.81
Sd	.718	.970

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	F Ratio
Culture (between groups)	4.55	1	4.55	6.25*
Error (within groups)	66.99	92	0.73	
Total	71.54	93		

*P 〈.05

10.

Response Data across Questions

	Japanese	American
Mean Responses	1.36	1.91
Sd	.673	1.02

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	F Ratio
Culture (between groups)	7.11	1	7.11	9.52*
Error (within groups)	68.69	92	0.747	
Total	75.8	93		

*P 〈.05

11.

Response Data across Questions

	Japanese	American
Mean Responses	1.37	1.87
Sd	.532	.90

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	F Ratio
Culture (between groups)	5.88	1	5.88	10.75*
Error (within groups)	50.28	92	0.546	
Total	56.16	93		

*P 〈.05

These differences indicate that Japanese consistently chose fewer possible alternatives for each conversation or situation and that Americans have a tendency to check more answers than their Japanese counterparts.

Although this phenomenon is indeed a limitation, it can also provide valuable insight into both cultures dominant mindsets regards the context being investigated. For instance, for the Americans, giving a relatively large amount of opinionated information help fulfill the American self-identity of, "I am independent". For Japanese, on the other hand, showing restraint in this context shows humility and respectfulness to one's elders thereby fulfilling the Japanese self-identity of group interdependence based on social harmony. Nevertheless, the affect of these cultural responses should be recognized and taken into account in the final interpretation of the cross-cultural study's interpretation.

8.2 Part I Questionnaire Result: "Funeral"

The cultural-specific custom of "funerals" was explored in question one. This question was posed because of the distinct beliefs and behavior Americans and Japanese have when someone dies. Japanese typically will hold a Buddhist ceremony after which the body is cremated. It is a Japanese law that the body must be cremated due to the lack of burial space. During the private funeral ceremony, members of the family will pick out the bones from the ashes. This is an almost completely foreign practice to native English speakers whose traditional image is typically a graveside Christian ceremony. Significant

responses analyzed statistically are highlighted in bold for each question.

Table 9
Appendix B: Part I Results

Question 1, Part I

1. Situation: Two new friends talking.

A: Hi Tom, I was sorry to hear about your grandfather's death.
B: Thanks. I am still a bit shocked.
A: Oh, I hope you are doing OK.
B: Well, I'm not really looking forward to picking out his bones from the ashes.
A: Oh, really?

a)[ ] Tom's grandfather probably died in a fire. **J:11.4% A:36.2%**
b)[ ] Tom's grandfather was cremated. **J:77.1% A:38.3%**
c)[ ] Tom is a little strange. **J:5.0% A:45%**
d)[ ] Tom owns a funeral home. J:0.7% A:6.3%
e)[ ] Tom is a morbid person. **J:0.7% A:14.9%**
f)[ ] I don't know/ other: J:10.7% A:10.6%

In responses [a], [b], [c] and [e], there appeared to be differences in participants' responses across cultures. The possible significance for each question in Part I was scrutinized using a Chi-square procedure by randomly selecting 47 out of the 140 Japanese questionnaires and comparing them with the matching 47 total American responses.

Table 10
Appendix D: Chi Square Results for #1

1. Situation: Two new friends talking.		
Japanese	American	Chi-Square
[a] 7	17	4.17***
[b] 35	18	5.45***
[c] 2	21	15.69***
[d] 0	3	-
[e] 0	7	7.0***
[f] 4	5	.111

***p 〈 .05

These differences were indeed statistically significant (see Table 10). Particularly response c), "*Tom is a little strange*" because of the potential to negatively associate a commonly held cultural practice with culture. American subjects obviously have no background knowledge of Buddhist funerals and judged this comment to be "morbid" possibly leading to a negative impression of the speaker due to culture-specific schema.

Another consideration between the numbers of significant responses was the existence cultural response sets of participants choosing more or fewer answers (F ratio = 22.83). Americans chose significantly more responses for this question than the Japanese did.

8.3 Part II: Associative Group Analysis Example Result

To add more depth to this type of cross-cultural data, Associative Group Analysis (Part II) data can be performed to explore further the mental representations that each speaker brings to the speech context when they hear/read a particular theme word. In the data example below, the theme word "funeral" was given (Table 11). For this question, participants' response lists were totaled using the procedures described in section 6.4.

This question generated the highest number of salient responses (532) of all sixteen words (see section 8.3.1) for the Japanese respondents. This indicates that the word funeral represents highly ritualistic and meaningful information to them. Similarly, the Americans salience score (541) was the second most meaningful indicating that strong emotional events such as a funeral are indeed very meaningful to both groups.

Common sets of categories were determined so that differences could be seen as a single schema. Table 12 lists the full component analysis for both Japanese and American response lists for the theme word "funeral".

From this content analysis, we can see that each group has a different mental representation of the word funeral leading them to choose significant differences in the conversation in Table 9. What Americans interpret as "strange" and "morbid" is normal to the Japanese group because of different background knowledge. Perhaps more importantly, a different conclusion was made by each group, *a) Tom's grandfather probably died in a fire*", by the American respondents and, *b) Tom's grandfather was cremated*", by the Japanese.

As a result of putting each response list item into a single common category, a "semantograph" (Linowes et. al. 2000:78) can be produced using the procedures described in section 6.4 to give easier understanding of each groups mental representation or

"schema" of the word.

Table 11 - Response list for "funeral"

Scored responses to stimulus word "funeral" (*soushiki* 葬式)

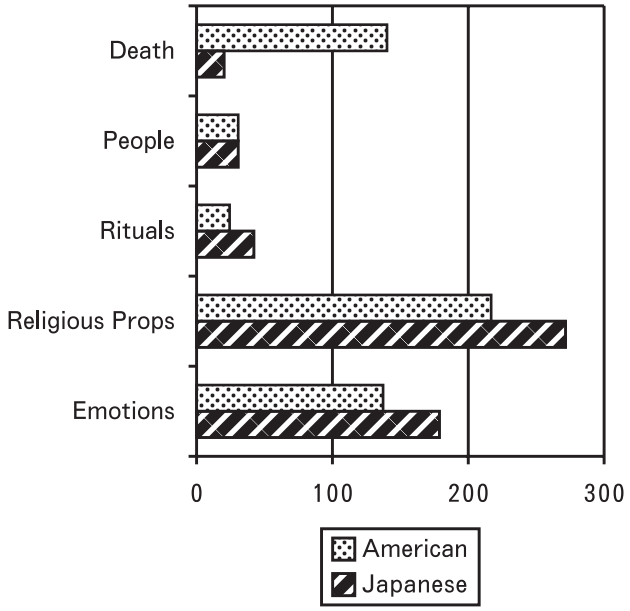
American responses		Japanese responses	
Death	126	Black	59
Black	73	Sad/sorrow	56
Sad (ness)	73	Tears	40
Flowers	47	Incense (stick)	29
Cry (ing)	38	Buddhist monk	28
Coffin	34	Chrysanthemum	28
Casket	24	Grave	24
Grave (yard)/cemetery	20	Dark	23
Family	19	Flower	22
Burial	17	Black clothes	21
Dying	14	Lonely/bereave	19
Dark/Gloomy/Grey	13	Death/die	18
Mourning	11	Mourning	18
Friends	10	Buddhism scriptures/	
Limo/cars	9	prayers/invocation	18
Food	7	Cremation	13
Sermon/Preacher	6	Temple block	11
		Black and white	11
		Bones	11
		Temple	11
		Coffin	10
		White	10
		Fold legs under	
		while sitting	9
		Cold	8
		Cross	8
		Hearse	8
		White flower	7
		Rain	6
		Parting/separation	6
Total (Salience) :	541		532

Table 12—Component analysis

Components of perception and evaluation of the stimulus word "funeral" (*soushiki*)

Content Category Underlying responses	American score	Japanese score
Emotions A: Sad (ness) (73), Cry (ing) (38), Dark/gloomy/Gray (13), Mourning (11) J: Sad/sorrow (56), Tears (40), Dark (23), Lonely/bereave (19), Mourning (18), Cold (8), parting/separation (6), Rain (6)	135	176
Religious Props: A: Black (73), Flowers (47), Coffin (34), Casket (24), Grave (yard) /cemetery (20), Limo/cars (9), Food (7), J: Black (59), Incense (29), Chrysanthemum (28), Grave (24), Flower (22), Black clothes (21), Temple block (11), Black & white (11), Bones (11), Temple (11), Coffin (10), White (10), Cross (8), Hearse (8), White flower (7)	214	270
Rituals: A: Burial (17), Sermon/preacher (6) J: Buddhist scriptures/prayers/invocation (18), Cremation (13), fold legs under while sitting (9)	23	40
People: A: Family (19), Friends (10) J: Buddhist monk (28)	29	28
Death: A: Death (126), Dying (14) J: Death/die (18)	140	18
Total:	541	532

Graph 2 — Component analysis for "funeral"



From this data, we can see that the American dominant mindset for funeral is "death". Americans also had a strong religious affiliation with the word funeral. Japanese, on the other hand, associated the religious props such as, "incense" or "ashes" with the word. Both groups have a strong emotional association with the event with the Japanese having a slightly stronger meaning affiliation.

Finally, responses [c] and [d] offer evidence to make the following interpretation: Americans may have a negative reaction to a cross-cultural speaker who assumes a Buddhist funeral ceremony schema. They, therefore, may have an unfavorable interpretation of the speaker's communicative behavior in this context.

8.3.1 Category Salience Scores

In the author's study, there were 16 theme words tested (see Table 13 below). Salience was defined in section 7.4 as a measure of "meaningfulness" (Linowes et. al. 2001:78) to each national group. However, as we have discussed, this measure is tempered with the knowledge that control response sets may in effect thereby influencing how a person from a particular culture may interpret the survey questions.

Table 13
Dominant themes in American and Japanese mental representations

The rank of the most salient terms from the given list of 14 theme words			
American		Japanese	
1. Family	599	Funeral	532
2. Funeral	541	Family	501
3. Classroom	515	Company	466
4. Company	439	Hard worker	363
5. University student	432	Comfortable house	336
6. Comfortable house	431	University student	327
7. First grade student	402	Foreign language	316
8. Foreign language	399	Classroom	292
9. Hard worker	380	Leader	272
10. Gifted	376	First grade student	262
11. New job	362	Short hair	256
12. Qualified	316	New job	251
13. Short hair	282	Gifted	238
14. Leader	250	Qualified	230
Total score:	5724		4642

The most different salient themes and where they rank on the others' list:

3. Classroom	(8)	4. Hard worker	(9)
7. First grade student	(10)	9. Leader	(14)
10. Gifted	(13)	11. Short hair	(13)
12. Qualified	(14)	13. Gifted	(10)

The resulting composite of each category (Table 13) allows for comparison of the total point value for each content category. In the author's example, this gave two point values, one for the Japanese and one for the American group. This data can then be compared showing the largest differences in salient themes (see bottom half of Table 13). In the example above, "classroom", "first grade student", "gifted", and "qualified" had the largest discrepancies when compared with their Japanese counterparts salience. Specifically, "classroom" ranks third out of 14 theme words in salience for the American respondents but only eighth for the Japanese. Conversely, "hard worker" ranked fourth of out 14 for the Japanese in terms of meaningfulness but was only ninth for the American group.

9. Limitations of the cross-cultural study

As with any research design experimental in nature, there are a large number of variables and confounding issues we must take into consideration. Realistically, we can only attempt to control and measure as many of these issues as possible and hope that the data offers adequate justification for future research. Potential confounding issues for any study of the cross-cultural questionnaire and ethnographic in nature include: ethnicity, personality, parenting, sex, age, demographic variables, self-esteem, linguistic competence in the target language, and cultural competence. The best we can do is to equalize these confounds by keeping subjects equal across groups as much as possible and by randomizing our sample whenever possible. However, as was mentioned earlier, the data collected for this study can best be described as "convenience sample" (Rudestam and Newton 2001:79) as participants were determined by those professors agreeing to administer the questionnaires. Still, by having an awareness of these problematic issues can help give better insight in the findings and their limitations.

Absolute causal associations cannot be made between the dependent (cross-cultural miscommunication) and the independent (Japanese and American culture) variables as the requirements for external and internal validity have not been completely met. However, because we have incorporated some randomization and attempted to equalize confounding variables as much as possible, generalization is justifiable to some degree (Hatch & Lazaraton: 1991). This is important because we are assuming that although a person is capable of assuming new cultural identities in small group contexts, they cannot shed a life-long set of valued cultural beliefs in the short-term. As a result, there will be unrecognized misunderstandings because of culturally specific schema, which goes mostly unrecognized by each participant. It is, therefore, important to be able to show a link between the sample data in the study and the larger target cultures.

Perhaps the most challenging part of this type of cross-cultural research is, not coming up with potentially problematic cross-cultural concepts, but rather putting them in an appropriate survey format so that C1 schema could be linked to these misunderstandings. An important factor in choosing an exploratory questionnaire, as opposed to interviewing individuals, to explore cross-cultural miscommunication was the desire to link the underlying concepts of each situation to a larger national culture mindset. In addition, the questionnaire gave concrete data that could be more clearly interpreted without

immediate translation issues.

With a paper questionnaire, confounding issues could be balanced and accounted for more effectively. For instance, Japanese are less likely to give a straightforward potentially face-losing reply to a personal interview with their teacher than with an anonymous questionnaire. In addition, with survey instruments, there can be some degree of generalization to the larger American and Japanese populations as a larger cross-section can be taken. However, because questionnaires are often limited in their depth, a more rigorous methodological approach is needed. Thus, Associative Group Analysis methodology can offer a more open-ended free association to give a deeper analysis than would have been possible with survey instruments alone.

10. Conclusion

Associative Group Analysis methodology combined with the traditional survey instrument can be an effective way to add more depth to cross-cultural studies. By making groups with distinct cultural identities more aware of their own unrecognized background knowledge, cross-cultural communication and information can be exchanged more effectively and with less chance of misunderstandings. The methodology of exploring unrecognized background knowledge in particular contexts could also effectively be applied to specific cross-cultural contexts in important areas such as conflict resolution, intercultural training and education and business negotiation.

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Appendix A—Japanese Questionnaire Part I

Part I.

以下の 12 の状況を思いうかべて適当と思うな答えをチェックしてください。複数回答も可.

1. 状況：最近知り合いになった二人の友人どうしが話をしています。

Ａ：トム，君のおじいさんが亡くなったのは。お気の毒だったね。

Ｂ：いいんだ。まだ少しショックだけど。

Ａ：早く元気になってね。

Ｂ：ああ，でも遺骨を拾うのは気が重いよ。

Ａ：そう？

［ ］ トムの祖父はおそらく火事で死んだ。

［ ］ トムの祖父は火葬された。

［ ］ トムは少し変わっている。

［ ］ トムは葬儀場を所有している。

［ ］ トムはの性格には病的なところがある。

［ ］：わからない／その他＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

2. 状況：近所に住む二人がばったり出会いました。

Ａ：こんにちは。出かけるには，いい天気ですよね。

Ｂ：ええ。私はこれから洗濯をしようと思っていたところなんですよ。

Ａ：ああ。

［ ］ Ｂはおそらく Ａを理解していなかった。

［ ］ Ｂは少し変わっている。

［ ］ Ｂはおそらく乾燥機をもっていない。

［ ］ Ｂは天気がいい日に洗濯をするのが好きである。

［ ］ Ｂはおそらく洗たくものを外に干す。

［ ］ Ｂ冗談を言おうとしている。

［ ］ わからない／その他

3. 状況：二人の人がペットについて話しています。

Ａ：犬か猫を飼っていますか？

Ｂ：ええ，犬を飼っています。猫より犬の方が好きなんです。

Ａ：私も。どんな種類の犬を飼っていますか？

Ｂ：フォックス　テリアです。

Ａ：そなんですか？どこで飼っていますか？

Ｂ：玄関のドアにチェーンでつないで飼っているんですよ 。

Ａ：そうなんですか。

［ ］ Ｂはおそらくとても忙しい。

［ ］ Ｂはおそらく不法不侵入を恐れている。

［ ］ Ｂはおそらく良い飼い主である。

［ ］ Ｂはおそらく悪い飼い主である。

［ ］ Ｂは良くも悪いくもない，普通の飼い主である。

［ ］ Ｂはおそらく，それ程動物が好きではない。

［ ］ Ｂは冷たい人である。

［ ］ わからない／その他：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

4. 状況：あなたは坊主頭の若者のグループに会いました。 このグループのことをどう思いますか？

［ ］ 何かスポーツクラブのメンバーである。

［ ］ おそらく野球選手である。

［ ］ 流行のヘアスタイルを見せびらかしている。

［ ］ おそらく高校生である。

［ ］ おそらく軍隊の人である。

［ ］ 何かの会に入会した帰りである。

［ ］ わからない／その他＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

5. 状況：教師が教室に初めて入ると，男子は右側に女子は左側に座っていました。

［ ］ 生徒は先生をからかっている。

［ ］ おそらく男同士女同士座ったの方が気楽なのである。

［ ］ 生徒は友達同士座っている。

［ ］ これは変わっている。

［ ］ これはおそらく小学校の教室内でのことである。

［ ］ その学校はおそらく男女を別々にすることにとても厳しい。

［ ］：わからない／その他

6. **状況**：**自動車工場に勤める二人のエンジニアは，最近自動車事故が数件起こったので，リスク分析をして上司に提出しなければならない。二人の目的は，自動車事故でそれぞれのボルトにかかった圧力を算定することである。**
エンジニアＡは，問題となるボルトすべてについて，それぞれの実際の強度を調べようと考えている。これには長い時間がかかる。
エンジニアＢは，問題となるボルトの一部を調べ，多少の誤差を含めた全体的な強度を見積るつもりである。これは早く済む。

[ ] エンジニアＡはおそらく努力家で徹底主義である。
[ ] エンジニアＢはＡほど一生懸命には仕事をしていない。
[ ] エンジニアＢはＡより効率的で生産性も高い。
[ ] 上司はエンジニアＢの報告書よりエンジニアＡの報告書を好むだろう。
[ ] 上司はＡが報告書作成に長い時間をかけるのを心よく思わないだろう。
[ ] 上司はＢの報告書がＡの報告書ほど正確ではないことをについて心よく思わないだろう。
[ ] わからない／その他＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

7. **状況**：**あなたの会社では今週の土曜日に忘年会があります。あなたがその日予定していることは・・・**

[ ] デートをする。
[ ] 妻／夫や家族を一緒に連れて行く。
[ ] ひとりで行く。
[ ] 忘年会が終わるまでいる。
[ ] 行かない。
[ ] 何かおもしろい催しがあれば行く。
[ ] わからない／その他＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

8. **状況**：**あなたは，ある大手ソフトウェア会社の，ある課の代表者である。あなたの課にいる社員のうち 50 人は，ソフトウェア業界のなかで，自分たちは公平な賃金を受け取っていないと感じている。あなたなら，どのような行動をとりますか？**

[ ] 私なら，そのグループではない人たちに１日ストライキをしてもらう。
[ ] 私なら，そのグループの人たちに賃金引き上げを求める嘆願書に署名するよう求める。
[ ] 私なら，自分の課の社員に，要求が受け入れられるまでストライキをすることを求める。

[ ] 私なら，その問題について上司たちと膝を交じえて話し合う。
[ ] 私なら，何もしない。
[ ] 私なら，経営者に何らかの行動を起こさせるため，会社の外で一般の人々に向けた運動を始める。
[ ] 私なら，昼休みだけのストライキを起こさせる。
[ ] 私なら，目下，経営者側と話し会ってるところだとを同僚に言う。
[ ] わからない／その他＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

9. **状況**：
家族 A：家族 A には子供が 2 人おり，2 つの寝室がある少さな家に住んでいる。はほんど無く，暑い夏でもめったにエアコンを使わない。車は 1 台持っている。
家族 B：家族 B には，やはり二人の子供がいるが，寝室が 4 つある広い家に住んでいる。彼らは，たくさんの家具をそろえ，一夏中エアコンをきかせている。車は 2 台持っている。彼らの月収は，A さんの家族と同額である。
A さんの家族に対して，どのような印象を持ちましたか？
[ ] 彼らは変わっている。
[ ] 彼らは質素な生活をしている。
[ ] 彼らは賞賛に値する。
[ ] 彼らは自然の近くに暮らすことが好きだ。
[ ] 彼らは将来に備えて節約している。
[ ] 彼らは保守的である。
[ ] わからない／その他＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

10. **状況**：**あなたが家にいると，箱を持った知らない人が玄関のドアをあけ，「すみません」と叫びました。**
あなたならどうしますか？
[ ] 驚いて大声をあげる。
[ ] 警察に電話する。
[ ] 彼に，なぜ玄関のベルを鳴らしたりノックしたりしなかったのかをたずねる。
[ ] 自分の身を守るために武器を持ち出す。
[ ] 彼から箱を受け取る。
[ ] 彼に何がしたいのかをたずねる。
[ ] 彼に箱を届けて，くれたことを彼に感謝する。

[ ] 急いでペンをもってくる。
[ ] わからない／その他＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

11. **状況**：あなたは大学を卒業したばかりで仕事につき，初めて会議に出席しました。会議室の中には，約 15 人程度の同僚がいます。さて，あなたならどのような行動をとりますか？
[ ] 皆に自己紹介をする。
[ ] 何も言わない。
[ ] 時々議題に関連した意見を述べ，会議に積極的に参加する。
[ ] 話しかけられるまで待つ。
[ ] 注意深く皆の話を聞くだけで，静かにしてる。
[ ] 会議に関連のある質問をできるだけ多くしようとする。
[ ] わからない／その他：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

12. **状況**：ジェーンは，最近地元の生け花大会で優勝しました。その後，彼女は地元にある公立の短期大学で生け花を教えてもらえないだろうかと頼まれました。
その仕事に就くために：
[ ] 彼女はまだ子供の時からずっと，勉強を続けている。
[ ] 彼女は生け花の資格を持っている。
[ ] 彼女には生け花の才能がある。
[ ] 彼女は上手くなるために一生懸命努力した。
[ ] 彼女は心からその仕事を楽しんでいるのでとても上手である。
[ ] わからない／その他：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

Part I は終わりです。
PartI に戻ったり，答えを変えたりしないで下さい。

Appendix B—US Questionnaire　Part I

Raw Scores

Japanese (J)：N＝ 140	American (A)：N＝ 47
Age：20.18	Age：22.24
Male：　91	Male：22
Female：49	Female：25
(Part I) Average response rate：17.1	Avg. Response Rate：21.08

Part I.

Directions：　Below are 12 situations some with conversations. Please try to imagine the situation and check the appropriate answers.　You may check multiple boxes for a single question.

1.　Situation：Two new friends talking.

A：Hi Tom, I was sorry to hear about your grandfather's death.

B：Thanks. I am still a bit shocked.

A：Oh, I hope you are doing OK.

B：Well, I'm not really looking forward to picking out his bones from the ashes.

A：Oh, really?

a)[　] Tom's grandfather probably died in a fire.　**J：11.4%　A：36.2%**

b)[　] Tom's grandfather was cremated.　**J：77.1%　A：38.3%**

c)[　] Tom is a little strange.　**J：5.0%　A：45%**

d)[　] Tom owns a funeral home.　J：0.7%　A：6.3%

e)[　] Tom is a morbid person.　J：0.7%　A：14.9%

f)[　] I don't know/ other：J：10.7%　A：10.6%

2.　Situation：Two neighbors meeting outside by chance.

A：Hi, it's a great day to be outdoors, isn't it?

B：Yeah, I'm about to do some laundry.

A：Oh.

a)[　] B probably didn't understand A.　J：14.2%　A：29.8%

b)[　] B is a little strange.　J：4.2%　A：12.8%

c)[　] B probably doesn't have a clothes dryer.　J：11.4%　A：27.7%

d)[ ] B likes to do laundry on nice days. J：35% A：17%

e)[ ] B probably hangs his/her clothes outside. J：69.3 A：44.7%

f)[ ] B is probably trying to be funny. J：2.1% A：14.9%

g)[ ] I don't know/ other：J：7.1% A：14.9%

3. Situation：Two people talking about pets.

A：Do you have a dog or cat?

B：Yes, I have a dog. I like dogs more than cats.

A：Me, too. What kind of dog do you have?

B：It's a Fox Terrier.

A：Really? Where do you keep it?

B：We keep her chained by the front door.

A：Oh, I see.

a)[ ] B is probably very busy. J：2.9% A：6.4%

b)[ ] B is probably worried about break-ins. J：8.6% A：17%

c)[ ] B is probably a good pet owner. J：5.7% A：4.3%

d)[ ] B is probably a bad pet owner. **J：24.3 % A：46.8%**

e)[ ] B is a normal pet owner. **J：52.1% A：21.3%**

f)[ ] B probably doesn't like animals that much. J：17.1% A：10.6%

g)[ ] B is a cruel person. J：5.7% A：14.9%

h)[ ] I don't know/ other ：**J：5% A：34%**

4. Situation：You see a small group of young men with crew cut or buzz cut hairstyles. What do you think about this group?

a)[ ] They are members of some kind of sports club. J：32.9% A：14.9%

b)[ ] They are probably members of a baseball team. **J：37.9% A：4.3%**

c)[ ] They are showing-off the latest hairstyle fashion. J：7.1% A：8.5%

d)[ ] They are probably high school students. J：19.3% A：4.3%

e)[ ] They are probably in the military. **J：2.9% A：74.5%**

f)[ ] They are going through some sort of initiation ceremony. J：10.0% A：6.4%

g)[ ] I don't know/ other：J：5.0% A：19.1%

5. Situation : The teacher walks into class for the first time and the boys are on the right side and the girls are on the left.

a) [ ] The students may be playing a joke on the teacher. J : 4.3% A : 10.6%

b) [ ] It is probably more comfortable to sit next to someone of the same gender. J : 37.9% A : 25.5%

c) [ ] The students are sitting by their friends. J : 27.9% A : 19.1%

d) [ ] This is strange. J : 17.9% A : 38.3%

e) [ ] This is probably an elementary school classroom. J : 15.7% A : 38.3%

f) [ ] The school is probably very strict about segregation. J : 16.4% A : 21.3%

g) [ ] I don't know/ other : J : 8.6 A : 0%

6. Situation : Due to a few recent car accidents, two engineers, who work in a car factory, must do a risk-analysis for their boss. Their goal is to determine the stress each bolt could take in a car accident.

Engineer "A" plans to examine all of the parts in question to see the actual strength of each item. This will take a long time.

Engineer "B" will take a small sample of the bolts in question to give an estimate of the overall strength plus or minus a small margin of error. This will be quick.

a) [ ] Engineer A is probably hard working and thorough. J : 70.7% A : 44.7%

b) [ ] Engineer B is probably not as hard working as A. J : 7.9% A : 6.4%

c) [ ] Engineer B is more efficient and productive than A. J : 45% A : 51%

d) [ ] The boss will probably prefer Engineer A's report to Engineer B's report. J : 23.6% A : 19.1%

e) [ ] The boss will probably not like that A's report took a long time. J : 27.1% A : 29.8%

f) [ ] The boss will probably not like that B's report is not as exact as A's. J : 17.9% A : 17%

g) [ ] I don't know/ other : J : 8.6% A : 10.6%

7. Situation : Your company is having its annual get-together this Saturday. You are planning to :

a) [ ] bring a date. **J : 12.1% A : 34%**

b) [ ] bring your spouse or family with you. **J : 2.1% A : 29.8%**

c)[ ] come by yourself. J：27.1 A：21.3%

d)[ ] stay until it ends. **J：42.1% A：21.3%**

e)[ ] not go at all. J：9.3 A：12.3%

f)[ ] only go if there was something interesting to see or do. J：22.9% A：19.1%

g)[ ] I don't know/ other：J：6.4% A：4.2%

8. Situation：You represent your section at a large software company. The 50 members of your section believe they are not paid equally with their peers in the industry. What kind of actions would you take?

a)[ ] I would ask the other members of the group to go on strike for one day. J：1.4% A：0%

b)[ ] I would ask the members of the group to sign a petition asking for better pay and benefits. J：35.0% A：51.1%

c)[ ] I would ask the members of my section to strike until our demands were met. J：7.1% A：2.1%

d)[ ] I would sit down and talk to upper management about the problem. J：55% A：80.9%

e)[ ] I would not do anything. J：9.3% A：2.1%

f)[ ] I would start a public campaign to pressure the supervisor to do something. J：1.4% A：0%

g)[ ] I would stage a lunchtime only strike. J：0.7% A：0%

h)[ ] I would tell my peers that I am discussing the problem with management. **J：11.4% A：51.1%**

i)[ ] I don't know/ other：J：6.4 A：2.1%

9. Situation：

A family

"A" family with 2 children lives in a small 2 bedroom house. They have little furniture and rarely use their air conditioning in the hot summers. They have one car.

B family

"B" family also has 2 children but lives in a large 4 bedroom house. They have plenty of furniture and keep their entire house air conditioned throughout the

summer. They have two cars. They have the same amount of monthly income as "A" family.

What is your impression of "A" family?

a)[ ] They are strange. J：1.4% A：0%

b)[ ] They are frugal with their money and live a simple life. J：57.1% A：66%

c)[ ] They are commendable. J：5.7% A：4.3%

d)[ ] They like living close to nature. J：7.1% A：6.4%

e)[ ] They are probably saving for the future. J：55% A：42.3%

f)[ ] They are conservative. **J：13.6% A：34%**

g)[ ] I don't know/ other：J：7.1% A：17%

10. Situation：You are at home and a stranger holding a box opens your front door and shouts "excuse me".

What would you probably do?

a)[ ] I would probably scream or yell in surprise. **J：1.4% A：31.9%**

b)[ ] I would call the police. **J：0.7% A：21.3%**

c)[ ] I would ask him why he didn't ring the doorbell or knock first. J：22.1% A：23.4%

d)[ ] I would grab some kind of weapon to protect myself. J：4.3% A：21.3%

e)[ ] I would go and take the box from him. J：10.7% A：2.1%

f)[ ] I would ask him what he wants. J：75.7% A：66%

g)[ ] I would thank him for giving me the box. J：5.0% A：4.3%

h)[ ] I would quickly go get a pen. **J：10.7% A：0%**

i)[ ] I don't know/ other：J：7.1% A：19.1%

11. Situation：You have just graduated from college and have a new job and are attending your first meeting. There are about 15 other co-workers in the room. What actions would you probably do?

a)[ ] I would introduce myself to everyone. J：32.1% A：51.1%

b)[ ] I wouldn't say anything. J：5.7% A：4.3%

c)[ ] I would try to occasionally contribute to the meeting by making relevant comments. **J：14.3% A：57.4%**

d)[ ] I would wait until I was spoken to before saying anything. J：16.4% A：

21.3%

e) [ ] I would keep quiet and only listen to everyone attentively. **J：44.3% A：19.1%**

f) [ ] I would try to ask as many relevant questions as possible. **J：12.1% A：29.8%**

g) [ ] I don't know/ other：J：4.3% A：8.5

12. Situation：Jane recently won a local competition for flower arrangement. She was asked to start teaching flower arrangement lessons at the local community college.

To get this job：

a) [ ] She probably has been studying since she was a small child. **J：13.6% A：4.3%**

b) [ ] She probably has a license to arrange flowers. J：26.4% A：12.3%

c) [ ] She probably has a natural "gift" for arranging flowers. J：40% A：55.3%

d) [ ] She probably worked very hard to become so good. J：45% A：44.7%

e) [ ] She is probably so good because she really enjoys her work. J：35% A：57.4%

f) [ ] I don't know/ other ：J：0.7% A：4.3%

Part I Finished. Thank you. Please do not go back and change any of your answers after answering them.

Sample Frequency Data and Chi-Squares from Control Group
Part I
Comparison of Japanese & English versions of Questionnaire given to Japanese Ss

1. Situation : Two new friends talking.

	Japanese	English	Chi-Square
[a]	0	5	-
[b]	21	15	1.0
[c]	2	0	-
[d]	0	4	-
[e]	0	1	-
[f]	4	0	-

$p < .01$

2. Situation : Two neighbors meeting outside by chance.

	Japanese	English	Chi-Square
[a]	4	5	0.11
[b]	0	0	-
[c]	3	2	-
[d]	10	11	.048
[e]	21	10	3.90
[f]	1	2	-
[g]	1	1	-

$p < .01$

3. Situation : Two people talking about pets.

	Japanese	English	Chi-Square
[a]	0	0	-
[b]	3	3	-
[c]	1	5	2.67
[d]	9	1	6.4
[e]	14	17	.29
[f]	4	0	4.0
[g]	1	0	-
[h]	1	1	-

$p < .01$

4. Situation : You see a small group of young men with crew cut or buzz cut hairstyles. What do you think about this group?

	Japanese	English	Chi-Square
[a]	11	10	.048
[b]	9	8	.059
[c]	2	0	-
[d]	6	3	1.0
[e]	1	4	1.8
[f]	4	1	1.8
[g]	3	1	-

$p < .01$

5. Situation : The teacher walks into class for the first time and the boys are on the right side and the girls are on the left.

	Japanese	English	Chi-Square
[a]	1	0	-
[b]	11	3	4.57
[c]	7	2	2.78
[d]	4	7	.818
[e]	4	9	1.92
[f]	4	4	-
[g]	2	1	-

$p < .01$

6. Situation : Due to a few recent car accidents, two engineers, who work in a car factory, must do a risk analysis for their boss.

	Japanese	English	Chi-Square
[a]	18	6	6.0*
[b]	5	5	-
[c]	13	5	3.56
[d]	8	5	.692
[e]	6	4	.400
[f]	8	2	3.6
[g]	1	2	-

$p < .01$

7. Situation : Your company is having it's annual get-together this Saturday. You are planning to :

	Japanese	English	Chi-Square
[a]	1	2	-
[b]	0	6	6.0
[c]	8	8	-
[d]	11	5	2.25
[e]	3	3	-
[f]	10	4	2.57
[g]	1	1	-

$p < .01$

8. Situation : You represent your section at a large software company. What kind of actions would you take? :

	Japanese	English	Chi-Square
[a]	0	2	-
[b]	10	5	1.67
[c]	2	3	-
[d]	14	12	.154
[e]	4	0	4.0
[f]	0	1	-
[g]	0	1	-
[h]	3	5	.50
[i]	3	0	-

$p < .01$

9. Situation : "A" family vs. "B" family. What is your impression of "A" family?

	Japanese	English	Chi-Square
[a]	1	1	-
[b]	9	12	.423
[c]	1	3	-
[d]	3	0	-
[e]	15	11	.615
[f]	7	3	1.6
[g]	2	2	-

$p < .01$

10. Situation： You are at home and a stranger holding a box opens your front door and shouts “excuse me”. What would you probably do?

	Japanese	English	Chi-Square
[a]	1	2	-
[b]	0	2	-
[c]	5	8	.692
[d]	0	3	-
[e]	2	4	.67
[f]	21	7	7.0***
[g]	2	3	-
[h]	3	4	.143
[f]	2	1	-

***p 〈 .01

11. Situation：You have just graduated from college and have a new job and are attending your first meeting. What actions would you probably do?

	Japanese	English	Chi-Square
[a]	7	11	.0889
[b]	1	1	-
[c]	5	4	.111
[d]	3	3	-
[e]	13	1	10.29***
[f]	4	7	.818
[g]	1	1	-

***p 〈 .01

12. Situation：Jane recently won a local competition for flower arrangement.
To get this job：

	Japanese	English	Chi-Square
[a]	3	4	.143
[b]	7	7	-
[c]	14	4	5.55
[d]	14	6	3.2
[e]	9	10	.053
[f]	0	1	-

p 〈 .01

Sample Frequency Data and Chi-Squares from
Part I - questionnaire

Comparison of Japanese & English versions of Questionnaire given to Japanese Ss

1. Situation : Two new friends talking.

	Japanese	American	Chi-Square
[a]	7	17	4.17***
[b]	35	18	5.45***
[c]	2	21	15.69***
[d]	0	3	-
[e]	0	7	7.0***
[f]	4	5	.111

***p 〈.05(3.84)

2. Situation : Two neighbors meeting outside by chance.

	Japanese	American	Chi-Square
[a]	6	14	3.2
[b]	1	6	3.57
[c]	7	13	1.8
[d]	17	8	3.24
[e]	31	21	1.92
[f]	0	7	7.0
[g]	6	7	0.077

***p 〈 .05

3. Situation : Two people talking about pets.

	Japanese	American	Chi-Square
[a]	2	3	-
[b]	6	8	0.286
[c]	6	2	2.0
[d]	9	22	5.45***
[e]	21	10	3.9***
[f]	6	5	0.09
[g]	3	7	1.6
[h]	3	16	8.89***

***p 〈 .05

4. Situation : You see a small group of young men with crew cut or buzz cut hairstyles. What do you think about this group?

	Japanese	American	Chi-Square
[a]	15	7	2.9
[b]	15	2	9.9***
[c]	3	4	0.14
[d]	6	2	2.0
[e]	3	35	26.95***
[f]	2	3	-
[g]	8	9	0.06

***p 〈 .05

5. Situation : The teacher walks into class for the first time and the boys are on the right side and the girls are on the left.

	Japanese	American	Chi-Square
[a]	1	5	2.67
[b]	17	12	0.86
[c]	11	9	0.2
[d]	10	18	2.29
[e]	10	18	2.29
[f]	4	10	2.57
[g]	4	0	-

p 〈 .05

6. Situation : Due to a few recent car accidents, two engineers, who work in a car factory, must do a risk analysis for their boss.

	Japanese	American	Chi-Square
[a]	32	21	2.28
[b]	5	3	0.5
[c]	20	24	0.36
[d]	10	9	0.05
[e]	11	14	0.36
[f]	8	8	-
[g]	9	5	1.14

p 〈 .05

7. Situation : Your company is having it' s annual get-together this Saturday. You are planning to :

	Japanese	American	Chi-Square
[a]	6	16	4.5***
[b]	2	14	9.0***
[c]	14	10	0.67
[d]	22	10	4.5***
[e]	3	6	1.0
[f]	6	9	0.6
[g]	1	2	-

***p 〈 .05

8. Situation : You represent your section at a large software company. What kind of actions would you take? :

	Japanese	American	Chi-Square
[a]	1	0	-
[b]	16	24	1.6
[c]	0	1	-
[d]	28	38	1.52
[e]	3	1	-
[f]	2	0	-
[g]	0	0	-
[h]	4	24	14.28***
[i]	3	1	-

***p 〈 .05

9. Situation : "A" family vs. "B" family. What is your impression of "A"family?

	Japanese	American	Chi-Square
[a]	1	0	-
[b]	30	31	0.02
[c]	5	2	1.28
[d]	4	3	-
[e]	20	20	-
[f]	5	16	5.76***
[g]	5	8	0.69

***p 〈 .05

10. Situation：You are at home and a stranger holding a box opens your front door and shouts “excuse me”. What would you probably do?

	Japanese	American	Chi-Square
[a]	0	15	15.0***
[b]	0	10	10.0***
[c]	11	11	-
[d]	3	10	3.77
[e]	6	1	3.57
[f]	30	31	0.02
[g]	1	2	0.33
[h]	5	0	5.0**
[f]	5	9	1.14

***p 〈 .05

11. Situation：You have just graduated from college and have a new job and are ttending your first meeting. What actions would you probably do?

	Japanese	American	Chi-Square
[a]	16	24	1.6
[b]	2	2	-
[c]	11	27	6.74***
[d]	5	10	1.67
[e]	20	9	4.17***
[f]	5	14	4.26***
[g]	3	4	-

***p 〈 .05

12. Situation：Jane recently won a local competition for flower arrangement.
To get this job：

	Japanese	American	Chi-Square
[a]	6	2	2.0
[b]	12	6	2.0
[c]	19	26	1.08
[d]	18	21	0.23
[e]	19	27	1.39
[f]	1	2	-

***p 〈 .05

下にあげた言葉を聞いたとき、何を連想しますか。
それぞれの言葉の下に、その言葉から連想する言葉をできるだけたくさん書いて下さい。

年齢：
性別：　男　　女

葬式	働き者	会社	家族
快適な家	専門家	リーダー	才能のある
ショートヘア	1 年生	教師	新しい仕事
教室	外国語	コミュニケーション	大学生

What do you think when you hear each word(s) below?

Please write as many related words or phrases as possible under each one.

Age:

Gender: M F

Funeral	Hard worker	Company	Family
University student	Qualified	Communication	Foreign language
Comfortable house	Classroom	Leader	New job
Gifted	Teacher	Short hair	First grade student

Using Associative Group Analysis Methodology to Explore Unrecognized Cultural Background Knowledge in Cross-Cultural Communication Research

Stephen B. RYAN

異文化を有する人々が混じり合う場面においては，各人の文化的背景の違いに意識が及ばない場合がある。文化的背景知識に気づかないことから，異文化間における意見の相違が起こる事が多々ある。文化的背景知識に関する研究手法は異文化に関する訓練や教育に携わる者にとって必須である。また，異文化教育は言語教育に留まらず，実務，外交，紛争解決の分野でも必要とされるものである。

本研究では，未認識異文化背景知識に焦点を当て，異文化研究に活用できる手法を提示する。母語話者と非母語話者の文化的意思疎通の傾向を認識することで，意思疎通の成功に寄与する重要な分野である。本稿では日米文化に関する著者の調査からの資料を使用している。