# Comparative Cultural Salience: Measures Using Free-List Data

ERIC C. THOMPSON
ZHANG JUAN
*National University of Singapore*

*In this article, we discuss procedures for comparing the cultural salience of semantic domains and their constitutive signifiers between groups of respondents based on free-list data. These methods allow us to assess the relative similarity and difference of the cognitive salience of elements within a domain across groups of respondents. We argue that cultural salience is an important but often overlooked variable in the structure of semantic domains. Comparing cultural salience provides one grounds for claims of cultural difference (or lack thereof) between different socially defined groups (e.g., national, ethnic, gender, academic). We use data collected on the cultural salience of countries in a project on perceptions of Southeast Asia as an example of the methods described.*

***Keywords:*** *free list; free recall; cultural salience; cognitive anthropology; semantic domains; Southeast Asia*

This article outlines methods using free-list data for testing comparative cultural salience of items within a semantic domain between groups of respondents. The arguments and methods build on previous research while organizing this field of inquiry in a way that can enhance future research, particularly with regard to comparative studies of semantic domains, their development, and their diffusion. Previous methodological writings on free-list data provide useful ways to collect (e.g., Weller and Romney 1988; Ryan, Nolan, and Yoder 2000; Brewer 2002; Brewer, Garrett, and Rinaldi 2002; Quinlan 2005) and organize aggregate data (e.g., Weller and Romney 1988; Smith 1993; Smith et al. 1995; Smith and Borgatti 1997; Sutrop 2001).

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Comparative analysis of free-list data has concentrated mostly on comparisons between individual rather than aggregate (group) lists, such as the use of list length to infer extent of knowledge in a domain (Gatewood 1984; Brewer 1995; Quinlan 2005). Authors frequently note or imply the potential for comparison across groups (e.g., Gatewood 1999). Borgatti (2002) offers an explicit method for comparative treatment of aggregate free-list data. Our work builds on this approach.

To illustrate the methods of analysis described here, we use free-list data collected from six universities, one each in China, Indonesia, Malaysia, the Philippines, Singapore, and Thailand, with approximately 180 respondents from each university. The free-list task, conducted in the language of instruction at each institution and administered by local research assistants, asked respondents to list the names of countries. Respondents were given 2 minutes to complete the task.

The data were collected as part of a larger research project examining cross-national perceptions of Southeast Asia within the emergent regional framework of the Association of Southeast Asian Nations (ASEAN). The ten members of ASEAN are Indonesia, Malaysia, the Philippines, Singapore, Thailand, Brunei, Cambodia, Laos, Myanmar, and Vietnam. Thus, the data are from five member countries of ASEAN and China. For clarity, we use *countries* to refer to the domain and items within the domain and *nations* to refer to the origins of the respondents. We do not claim that the university-student samples can be generalized to all citizens of a particular nation, only that the results are shaped by national frames of reference.

## FREE LISTING: TO WHAT END?

Free-listing or free-recall tasks commonly are used to solicit information about semantic domains and their elements. A semantic domain is "an organized set of words, concepts, or sentences, all at the same level of contrast, that jointly refer to a single conceptual sphere" (Weller and Romney 1988:9; see also Spradley 1979:100–105). In the most common form of free listing, a researcher asks respondents to list kinds or names of *X*, where *X* is the cover term for a domain (e.g., plants, animals, occupations, countries, fish, bad words). Free listing is most often used as an exploratory technique. Ethnographers, for example, use free listing to learn the words that are significant to the people with whom they are working in a cultural domain—names of useful plants, names of illnesses and their cures, kinship terms, and so on.

In cognitive psychology, similar tasks (usually called free recall) have been used to study memory. In these cases, respondents generally are given

stimuli in a laboratory setting and then asked to recall the stimuli (e.g., Roenker, Thompson, and Brown 1971). In anthropology, by contrast, free listing seeks to uncover longer term memory of stimuli that respondents have learned during a lifetime—in other words, their "cultural" knowledge (see Handwerker 2002:107–11). Free-list data are collected to determine not only the native contents of a cultural domain but also the relative salience of terms within the domain. In turn, salient terms are studied with techniques such as pile sorting and triad comparisons that probe the structure of the domain (Weller and Romney 1988; Romney et al. 1996; Gatewood 1999; Moore et al. 1999; Romney et al. 2000).

There are several techniques to determine salience of terms in a set of free lists. The simplest technique is the frequency of listed items (Weller and Romney 1988). Other indices take into account both the frequency and priority of listed items (i.e., their position in individual lists). Items with the greatest salience are those that respondents list most commonly and that respondents tend to recall more immediately than other items (Borgatti 1992). Two such salience indices have been proposed by Smith and Borgatti (Smith 1993; Smith et al. 1995; Smith and Borgatti 1997) and by Sutrop (2001).

Here, we report salience based on Smith's salience index rank (Smith's S; see Smith 1993), calculated using *ANTHROPAC 4* (Borgatti 1992). However, we tested the data using six measures: frequency, frequency rank, Smith's salience index statistic, Smith's salience index rank, Sutrop's salience index statistic, and Sutrop's salience index rank. In general, our results were consistent regardless of the measure we used, although Sutrop's salience index statistic tends to produce distributions in which one or two most salient items have much higher values than other items, and thus, appear as outliers in the domain. In using the techniques to follow, we recommend that researchers run the tests on several measures to ascertain whether particular results are highly influenced by the measure being used.

Regardless of which measure is used, the result is an aggregate list of items from respondents. The result we get from aggregate salience is assumed to be an outcome of shared knowledge. In other words, we take aggregate salience to be the equivalent of cultural salience.

## COMPARING CULTURAL SALIENCE

We address three questions here: (1) Are there detectable differences in salience across student populations in the salience of countries in their region and elsewhere in the world? (2) Are there detectable differences in salience of countries by gender or by field of study of the students in our

TABLE 1
Lists of Most to Least Salient ASEAN Countries from Six Nations (Ranked by Smith's S)

| *Malaysia* | *Thailand* | *Indonesia* | *Singapore* | *Philippines* | *China* |
|---|---|---|---|---|---|
| *1. Malaysia* | **1. Thailand** | *1. Indonesia* | *1. Malaysia* | *1. Philippines* | *8. Singapore* |
| **2. Thailand** | **2. Laos** | *2. Malaysia* | *2. Singapore* | *5. Malaysia* | **15. Vietnam** |
| *3. Singapore* | **6. Myanmar** | *4. Singapor* | *5. Indonesia* | *6. Indonesia* | *19. Malaysia* |
| *4. Indonesia* | *7. Malaysia* | **5. Thailand** | **7. Thailand** | **7. Thailand** | **23. Thailand** |
| *8. Philippines* | **9. Cambodia** | *8. Brunei* | **13. Vietnam** | *11. Singapore* | *30. Indonesia* |
| **12. Myanmar** | **10. Vietnam** | *11. Philippines* | *17. Philippines* | **21. Vietnam** | **32. Laos** |
| *13. Brunei* | *11. Indonesia* | **17. Vietnam** | **21. Laos** | **27. Cambodia** | **36. Myanmar** |
| **14. Vietnam** | *13. Singapore* | **25. Myanmar** | *22. Brunei* | *30. Brunei* | **43. Cambodia** |
| **17. Cambodia** | *21. Philippines* | **28. Cambodia** | **23. Cambodia** | **33. Myanmar** | *47. Philippines* |
| **20. Laos** | *24. Brunei* | **29. Laos** | **24. Myanmar** | **43. Laos** | *91. Brunei* |

NOTE: ASEAN = Association of Southeast Asian Nations; "Mainland" countries shown in bold; "Maritime" countries shown in italics.

sample? (3) Are the differences between universities in different nations greater than differences of gender, ethnicity, or field of study? If they are, this finding would support the hypothesis that knowledge of this domain is primarily learned within and shaped by the cultural mechanisms of nation-states (i.e., national schools systems, media, and the like). Alternatively, if men and women or social-science majors and science majors have very different knowledge of this domain, it would be hard to argue that this knowledge is shaped primarily by the political cultures of nation-states.

In all these cases, our attention is to differences that indicate how nation-state frames of reference as well as the cognizance of an ASEAN regional grouping shape (or do not shape) the salience of items in this domain. Our consideration of what counts as a substantive (or interesting) difference, some of which we highlight below, is driven by these research interests. If the methods here are applied to other domains, the substantive significance of the results will similarly be specific to the domain and research questions under consideration. To answer these questions, we need methods to test and judge the degree of similarity or difference between two or more aggregate lists. In some cases, simple visual examination of rank-ordered lists can provide useful information. For example, as shown in Table 1, we can compare the results of the rank order of ASEAN countries within the overall list of countries across the six universities.

These results point to two aspects of salience: the overall salience of items within the domain and the order or organization (by salience) of the items. With regard to the first, Thai and Malaysian university students show the greatest consciousness of ASEAN countries, as reflected in their overall ranking of

TABLE 2
Lists of Most to Least Salient Western Countries
from Six Nations (Ranked by Smith's S)

| *Malaysia* | *Thailand* | *Indonesia* | *Singapore* | *Philippines* | *China* |
|---|---|---|---|---|---|
| 5. America | 4. America | 3. America | 3. America | 2. America | 1. America |
| 7. England | 5. England | 6. England | 6. England | 9. France | 4. England |
| 11. Australia | 12. France | 10. Australia | 8. Australia | 10. Australia | 5. France |
| 19. France | 16. Australia | 12. France | 11. France | 12. England | 6. Germany |
| 21. Russia | 17. Canada | 13. Germany | 12. Germany | 13. Canada | 9. Italy |
| 22. Canada | 18. Italy | 14. Italy | 14. Canada | 16. Germany | 10. Canada |
| 23. Germany | 19. Germany | 16. Holland | 18. Russia | 17. Spain | 11. Russia |
| 25. Italy | 20. Russia | 22. Russia | 20. Italy | 18. Russia | 14. Australia |
| 31. Spain | 22. Spain | 23. Canada | 25. Holland | 19. Italy | 16. Spain |
| 34. Holland | 26. Holland | 31. Spain | 31. Spain | 35. Holland | 20. Holland |

those countries. Among Southeast Asians, Filipino students have the lowest cognizance of ASEAN countries. But compared to other Southeast Asians, Thai students order the domain differently.

Southeast Asia is commonly recognized as culturally and historically differentiated between mainland (predominantly Buddhist) and maritime (predominantly though not exclusively Malay-Muslim) countries. Among Thai students, mainland countries are more salient, whereas the lists for Malaysia, Singapore, Indonesia, and the Philippines are all weighted toward maritime Southeast Asia. The salience of countries in the Chinese list does not display any such mainland-maritime split, but rather, it is weighted first toward countries that are industrialized or rapidly industrializing (Singapore, Malaysia, Thailand) and then toward countries that border on mainland China (Vietnam, Laos, Myanmar).

In contrast to these differences among respondents in the salience of ASEAN countries, there appears to be much less difference in the salience of Western countries. Table 2 shows the ranked salience across the six universities for the ten most salient Western countries. Overall salience of this group of Western countries appears similar in the five Southeast Asian nations but relatively higher in China.

So far, these conclusions have been drawn from a simple visual inspection of the aggregate lists. To improve comparison of salience across groups and subgroups (and to summarize the results in ways that can simplify and lend precision to our interpretation), we introduce two additional methods: comparing sums or average ranks and comparing correlation coefficients. Each approach requires somewhat different treatment of the data. In the following

sections, we provide guidelines for applying these two measures to aggregate free-list data, illustrate the methods with results from our free lists of countries, reflect on extensions to other research, and discuss limitations of the methods.

### Sum or Average Ranks

Returning to the results in Table 1, the average of ranks (sum ÷ number of items) for the ASEAN countries among each group of respondents is Malaysia (9.4), Thailand (10.4), Indonesia (13.0), Singapore (13.5), Philippines (18.4), and China (34.4). The results reinforce our interpretation based on inspection: ASEAN member nations are most salient in Thailand and Malaysia, less so in Indonesia, Singapore, and the Philippines, and not particularly salient in China.

To test for differences in subsets of the domain and given our interest in regionalism and evidence that respondents themselves organize the domain regionally, we examined four subcategories: ASEAN countries; other Asian countries (China, Japan, India, South Korea, Taiwan, Pakistan, North Korea, Afghanistan, Hong Kong, Bangladesh); Western countries (see Table 2); and other countries (Brazil, Iraq, Iran, Argentina, Saudi Arabia, Mexico, Egypt, South Africa, Chile, Turkey).

Table 3 shows that for Southeast Asian respondents, ASEAN and Western countries are most salient, while other Asian and other countries are less so. For the Chinese students, Western countries as a whole are clearly the most salient, followed by other (non-ASEAN) Asian countries. Among the Chinese respondents, the salience of ASEAN countries was equivalent to that of other (non-Asian, non-Western) countries. Although students from all six nations share a cultural domain of countries, the average salience ranks of types of countries within this domain are quite different between students in China and students from Southeast Asia and somewhat different for Filipino students compared to their ASEAN counterparts in Malaysia, Thailand, Indonesia, and Singapore.

## CORRELATION BETWEEN AGGREGATE LISTS

Our second diagnostic tool is comparing the correlation coefficients between the salience rank of countries in each group's aggregate list. We apply this method to subdomains first and then to overall group-to-group comparison.

Correlation between lists for the ASEAN countries substantiates our visual inspection (Table 4). Aggregate lists from Malaysia, Singapore, Indonesia, and the Philippines are all highly correlated with one another, whereas the lists for Thailand-China and China-Singapore are moderately correlated. By contrast, the salience of Western countries is highly correlated

TABLE 3
Average Rank (Smith's S) by Category at Universities in Six Nations

| *Category* | *Malaysia* | *Thailand* | *Indonesia* | *Singapore* | *Philippines* | *China* |
|---|---|---|---|---|---|---|
| ASEAN mean | 9.40 | 10.40 | 13.00 | 13.50 | 18.40 | 34.40 |
| Std. error | 2.13 | 2.35 | 3.46 | 2.88 | 4.54 | 7.38 |
| Median | 10.00 | 9.50 | 9.50 | 15.00 | 16.00 | 31.00 |
| Std. deviation | 6.74 | 7.43 | 10.95 | 9.09 | 14.35 | 23.34 |
| Western mean | 19.80 | 15.90 | 15.00 | 14.80 | 15.10 | 9.60 |
| Std. error | 3.04 | 2.23 | 2.65 | 2.77 | 2.73 | 1.86 |
| Median | 21.50 | 17.50 | 13.50 | 13.00 | 14.50 | 9.50 |
| Std. deviation | 9.61 | 7.05 | 8.39 | 8.75 | 8.65 | 5.87 |
| Other Asian mean | 24.80 | 25.10 | 35.20 | 28.20 | 23.80 | 21.63 |
| Std. error | 4.30 | 4.743 | 7.83 | 5.58 | 5.91 | 7.38 |
| Median | 28.50 | 27.50 | 35.00 | 30.50 | 21.50 | 12.50 |
| Std. deviation | 13.61 | 15.00 | 24.77 | 17.66 | 18.70 | 20.87 |
| Other mean | 33.70 | 41.20 | 29.10 | 37.60 | 32.50 | 35.20 |
| Std. error | 3.87 | 3.32 | 2.90 | 3.42 | 4.23 | 4.37 |
| Median | 35.50 | 42.50 | 28.00 | 39.50 | 25.50 | 33.50 |
| Std. deviation | 12.25 | 10.47 | 9.18 | 10.81 | 13.38 | 13.81 |

TABLE 4
Correlation between Lists for ASEAN Countries (Pearson's *r* Coefficients)

| | *Malaysia* | *Thailand* | *Indonesia* | *Singapore* | *Philippines* | *China* |
|---|---|---|---|---|---|---|
| Malaysia | 1.000 | –.001 | .891** | .861** | .866** | .387 |
| Thailand | –.001 | 1.000 | –.296 | .163 | –.192 | .641* |
| Indonesia | .891** | –.296 | 1.000 | .816** | .805** | .119 |
| Singapore | .861** | .163 | .816** | 1.000 | .756** | .640* |
| Philippines | .866** | –.192 | .805** | .756** | 1.000 | .335 |
| China | .387 | .641* | .119 | .640* | .335 | 1.000 |

NOTE: ASEAN = Association of Southeast Asian Nations.
*Correlation is significant at .05 level (one tailed); **correlation is significant at .01 level (one tailed).

in almost all cases among all the groups of students surveyed, with one glaring exception—between Indonesia and the Philippines (Table 5). This exception highlights the usefulness of this analysis in interpreting free-list results. Returning to Table 2, we see the cause of this exception. Either Spain or Holland is dead last in salience for all six of our samples. In four of the six, both Spain and Holland are last and next to last. For Indonesia, Holland (its

TABLE 5
Correlation between Lists for Western Countries (Pearson's *r* Coefficients)

| | *Malaysia* | *Thailand* | *Indonesia* | *Singapore* | *Philippines* | *China* |
|---|---|---|---|---|---|---|
| Malaysia | 1.000 | .915** | .753** | .920** | .814** | .731** |
| Thailand | .915** | 1.000 | .731** | .841** | .813** | .858** |
| Indonesia | .753** | .731** | 1.000 | .835** | .424 | .629* |
| Singapore | .920** | .841** | .835** | 1.000 | .737** | .776** |
| Philippines | .814** | .813** | .424 | .737** | 1.000 | .771** |
| China | .731** | .858** | .629* | .776** | .771** | 1.000 |

*Correlation is significant at .05 level (one tailed); **correlation is significant at .01 level (one tailed).

former colonial power) is seventh; and for the Philippines, Spain (its former colonial power) is seventh.

Moving from comparative correlation of subdomains such as ASEAN or Western countries to direct comparison of the domain across groups requires further conceptual work. Free-list exercises typically result in very long lists of words or phrases, many of which may be mentioned by just one informant. Using a minimal cutoff of two mentions of an item can still leave researchers with an unwieldy list including marginally salient items. Scree plots of items by number of mentions often display a clear "elbow," or cutoff, in the number of mentions and/or salience (e.g., Quinlan 2005:226–27). But in many cases, including with our data, such an elbow is hard to identify.

It is likely that differences in the number of items retained will affect comparisons of free-list results between groups of informants. To test this effect, we compared groups of students repeatedly, using cutoff points of ten, twenty, thirty, forty, or fifty items in the domain. Table 6 shows the results of comparing the rank order of salience for each national sample (rows) against rankings of the ten most salient items for the other nations (columns). This correlation matrix is asymmetrical, because cell *ij* involves a different set of countries than does cell *ji*. For example, the second row in the first column shows the correlation between the Thai and Malaysian samples for the ten most salient items in the Malaysian sample. The first row in the second column shows the correlation between the Thai and Malaysian samples for the ten most salient items in the Thai sample.

Examining the results in Table 6 as a whole, we see that at the very top of the domain, salience and order of the items is (roughly) symmetrically similar among Indonesian, Singaporean, and Malaysian university students and symmetrically different between those three groups and that of Filipinos and Thais. Positive correlations between the first three groups are all relatively

TABLE 6
Correlations to Domain (Top Ten) Salience by Nation (Pearson's *r* Coefficients)

| *Students' Country of Origin* | *Malaysia 10 Most Salient* | *Thailand 10 Most Salient* | *Indonesia 10 Most Salient* | *Singapore 10 Most Salient* | *Philippines 10 Most Salient* | *Chinese 10 Most Salient* |
|---|---|---|---|---|---|---|
| Malaysia | 1.000 | .276 | .808** | .771** | .445 | .624* |
| Thailand | .401 | 1.000 | .331 | .274 | .143 | .865** |
| Indonesia | .840** | .218 | 1.000 | .805** | .318 | .682* |
| Singapore | .677* | .222 | .563* | 1.000 | .012 | .635* |
| Philippines | –.125 | .062 | .339 | .193 | 1.000 | .829** |
| China | –.104 | .114 | .107 | .007 | –.185 | 1.000 |

NOTE: Columns represent unique aggregate lists from each group of respondents of the 1st through 10th most salient countries (ranked by Smith's S); rows show the correlation of rankings for those ten countries between the nation originating the list and results from every other nation.
*$p < .05$. **$p < .01$ one-tailed test.

strong in both directions (*ij* and *ji*). Correlations of Filipino and Thai ranks to each other and to the other Southeast Asian groups are relatively weak or even negative.

The correlations between Chinese students' responses and those of Southeast Asian students (i.e., the last row and last column of Table 6) are strikingly asymmetrical. The reason highlights a significant theoretical issue in the distribution of items in semantic domains and cultural salience. The asymmetry is an effect of the organization of subdomains—ASEAN, Western, and other Asian—within the larger domain of countries. We conclude from the greater salience of ASEAN countries among respondents from Malaysia, Indonesia, Singapore, and Thailand (and to a lesser extent, the Philippines) that Chinese students and students in ASEAN countries do not have similar knowledge of the domain. The primary items in the domain among Chinese students consist mainly of Western and other Asian countries, the salience of which largely correlates across all six nations (Table 3).

The results show that similarities in cultural salience need not be symmetrical. In this case, with regard to salience, we can say that Southeast Asian students largely share the Chinese students' knowledge of the domain, but Chinese students do not share all of the Southeast Asian students' knowledge of the domain. Since this asymmetry is because of the salience and organization of a particular subdomain (ASEAN countries), we might expect to find similar cases in other research studying other domains, especially where the domain is large and complex with clearly

TABLE 7
Correlations to Domain (Top Fifty) Salience by Nation (Pearson's *r* Coefficients)

| *Students' Country of Origin* | *Malaysia 50 Most Salient* | *Thailand 50 Most Salient* | *Indonesia 50 Most Salient* | *Singapore 50 Most Salient* | *Philippines 50 Most Salient* | *Chinese 50 Most Salient* |
|---|---|---|---|---|---|---|
| Malaysia | 1.000 | .798** | .662** | .805** | .749** | .486** |
| Thailand | .818** | 1.000 | .681** | .835** | .685** | .671** |
| Indonesia | .697** | .715** | 1.000 | .612** | .808** | .660** |
| Singapore | .633** | .834** | .714** | 1.000 | .771** | .660** |
| Philippines | .716** | .740** | .735** | .713** | 1.000 | .602** |
| China | .449** | .566** | .482** | .603** | .608** | 1.000 |

NOTE: Columns represent unique aggregate lists from each group of respondents of the 1st through 50th most salient countries (ranked by Smith's S); rows show the correlation of rankings for those 50 countries between the nation originating the list and results from every other nation.
*$p < .05$. **$p < .01$ one-tailed test.

identifiable subdomains. As a diagnostic, showing us that particular disparities exist (or that they do not), the results also point us in the direction of further research to explain why the disparities exist (in the present case, the proximate cause is a complex mix of geography, history, geopolitics, mass media, and education, among other things).

When the domain of each group is extended to include fifty items, we see significant correlations and generally higher correlation coefficients between all groups (Table 7). Our analysis of correlations using several cutoffs (ten, twenty, thirty, forty, fifty items) shows a trend in the direction of greater correlation, as we would expect. The difference associated with the ASEAN subdomain is muted with the addition of more non-ASEAN countries, which tend to correlate highly across lists. After about forty items, however, we also notice some leveling or even reduction in the general level of correlation—an effect of more low-salience, "idiosyncratic" items' entering into the calculations.

## COMPARING DIFFERENT KINDS OF GROUPS

Next, we examine possible differences in salience scores across gender, ethnicity, and field of study. Field of study shows no differences. It did not matter whether students were from the arts and social sciences, engineering, or sciences (the three faculties from which we drew samples at each university); they produced aggregate lists that were highly correlated across

disciplines. Despite comments and expectations to the contrary by many of the social scientists with whom we worked while collecting data, social-science students did not exhibit different knowledge of this domain (as measured by cultural salience) from that of other students.

Male and female respondents displayed differences in salience only with respect to our category of other countries. The difference can be accounted for by a gendered "World Cup effect." In Singapore, Thailand, Malaysia, and Indonesia, men ranked football (soccer) powerhouses Brazil, Argentina, and to a lesser extent, Mexico and Chile significantly higher than did women. This was not, however, the case in the Philippines, where World Cup football has not traditionally been a prominent or widely followed sport.

Finally, our most interesting comparative results related to ethnicity. We expected nationality rather than field of study or gender to have the greatest influence on salience, because knowledge of this domain is likely to be shaped by mass media and formal education, both of which are mediated significantly by national frameworks. But we often think of culture as being associated with ethnic groups, mediated by common language, religions, customs, and the like. The particular constructions of ethnicity within our samples allow us to test hypotheses about ethnic versus national consciousness with regard to our domain.

We examined correlations and sum of ranks between eight groups: Malay-Malaysians, Chinese-Malaysians, Malay-Singaporeans, Chinese-Singaporeans, Thai-Thais, Chinese-Thais, Indonesians, and PRC Chinese. The first six groups represent individuals who are conationals but identify themselves as belonging to different ethnic groups. In these nations, ethnic differentiation (with respect to separate educational streams, media, and the like) is greatest in Malaysia, lower in Singapore, and negligible in Thailand. Also notable and of interest in our analysis is the strong historical, ethnolinguistic and religious commonality among Malay-Muslims (who include most Indonesians and Malays in Malaysia and Singapore) as well as weaker commonalities of the same sort between PRC Chinese and overseas Chinese in Southeast Asia.

Using the methods outlined here, we find that ethnicity does have a bearing on cultural salience for this domain—specifically in the case of Malay-Malaysians and Chinese-Malaysians. The former have knowledge of the domain similar to that of Indonesians (particularly with respect to countries of the Middle East and the broader Muslim world), whereas the latter have an orientation similar to that of Singaporeans (with a relatively strong orientation toward East Asia). However, the effects of ethnicity are not greater than nationality, even in the case of Malaysians. From close study of the data, using multiple techniques and variations on the methods described here, we

conclude that overall, there is a greater similarity among Malaysians than between Malays or Chinese and their coethnics in other nations. This finding is even stronger for Singaporeans and for Thai nationals. Moreover, all Southeast Asian students, whether Chinese, Malay, Indonesian, or Thai, have more in common with each other than with those from the People's Republic of China (details of the analysis have been reported in Thompson 2004).

## EXTENSION TO OTHER RESEARCH

A second example, drawn from literature on semantic domain analysis, illustrates how these techniques could be used with a very different domain. Moore and colleagues report findings from a free-list exercise with English-, Chinese-, and Japanese-speaking adults on emotions (Moore et al. 1999). They find that for fifteen emotions mentioned by at least six informants in each group of about fifty informants, English-, Chinese-, and Japanese-speaking respondents have a largely similar understanding of the domain based on judged similarity and difference among items (Moore et al. 1999). At the same time, they find significant differences for some items (shame, anxious, bored), particularly between English and Japanese speakers (Moore et al. 1999; Romney et al. 2000). Table 8 shows the percentage of times each of the fifteen emotions was mentioned and the rank ordering of those emotions for the three groups in the Moore et al. study.

Visual examination of the data suggests that for Japanese speakers, anguish and loneliness are more salient compared to English speakers, for whom love and excitement appear relatively more salient. The results from Chinese speakers appear to fall somewhere between those for English and Japanese speakers. The rank-order correlation between the English- and Japanese-speaking lists is .265. The English and Chinese lists are correlated at .728, whereas the correlation for the Chinese and Japanese lists is .516. The greater similarity between English and Chinese speakers than between Chinese and Japanese speakers is a good caution against popular assertions of broad similarities among "Asian cultures" in contrast to "Western cultures."

## CONCLUSIONS

Our analysis falls in a no man's land at a point of articulation between qualitative and quantitative methods and approaches to social research. Qualitative research generally is described as investigating the meaning of things, whereas quantitative approaches focus on measuring phenomena.

TABLE 8
Percentage of Times that English, Chinese, and Japanese Informants Mention Each of Fifteen Emotions and the Rank of Each Emotion

| *Term* | *English Percentage* | *English Rank* | *Chinese Percentage* | *Chinese Rank* | *Japanese Percentage* | *Japanese Rank* |
|---|---|---|---|---|---|---|
| Happy | 90 | 1 | 73 | 1 | 91 | 1 |
| Sad | 88 | 2 | 42 | 3 | 89 | 2 |
| Anger | 83 | 3 | 41 | 4 | 34 | 6 |
| Love | 60 | 4 | 14 | 8 | 19 | 11 |
| Fear | 46 | 5 | 43 | 2 | 30 | 8 |
| Excitement | 46 | 5 | 22 | 7 | 19 | 11 |
| Hate | 40 | 7 | 11 | 9 | 45 | 5 |
| Anxious | 40 | 7 | 7 | 11 | 15 | 13 |
| Bored | 31 | 9 | 25 | 5 | 25 | 10 |
| Tired | 29 | 10 | 3 | 14 | 11 | 15 |
| Lonely | 19 | 11 | 7 | 11 | 68 | 3 |
| Envy | 17 | 12 | 8 | 10 | 15 | 13 |
| Anguish | 15 | 13 | 24 | 6 | 49 | 4 |
| Disgust | 12 | 14 | 7 | 11 | 32 | 7 |
| Shame | 12 | 14 | 3 | 14 | 26 | 9 |

SOURCE: Moore et al. 1999:533. Copyright @ 1999 by the American Anthropological Association. Used with permission.

Qualitative knowledge often is said to be descriptive in that it aims to demonstrate how and what things are or are not (see Kirk and Miller 1986). In our case, when we talk about the salience of countries for Thai students (for instance), we are making a qualitative statement, despite the use of numbers, that this is how Thai students think about this domain (see Handwerker and Borgatti 1998).

Finally, we caution again that the mean salience scores in our data are not from statistically representative samples of the countries in which we are working. In our judgment, the large observed differences in the average salience of ASEAN countries for Chinese students versus students from Southeast Asia is convincing, as is the lower salience among Filipino students. We would not, however, make much of the slight differences among the other four groups. Similarly, the differences in correlation across groups are indications of substantive differences in their cultural knowledge. But the statistical significance of these differences should be used only as rough diagnostics, as the data (rank salience of items) are not themselves a population sample (such as a sample of students). Methods such as those described by Borgatti (2002), which involve deriving distributions

from the data themselves, would likely be the most appropriate route to developing a direct significance test of our data, but computationally intensive methods are not yet widely available in the kinds of analysis tools used by most social science researchers. Still, by expanding our use of free-list data, we can expand our understanding of cultural patterns and variation, an important step in developing empirically grounded cultural theory.

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*ERIC C. THOMPSON (PhD, University of Washington) is an assistant professor in the Department of Sociology, National University of Singapore, where he teaches anthropology and research methods. His previous research has focused on urbanism as a social and cultural phenomenon in rural Malaysia ("Malay Male Migrants: Negotiating Contested Identities in Malaysia,"* American Ethnologist, *2003; "Rural Villages as Socially Urban Spaces,"* Urban Studies, *2004) and the role of Internet-mediated communication in Southeast Asian studies ("Internet-mediated Networking and Academic Dependency in Indonesia, Malaysia, Singapore and the United States,"* Current Sociology, *2006).*

*ZHANG JUAN (MSc, National University of Singapore) recently has completed her master's thesis, "Ethnic Boundaries Redefined: The Emergence of the 'Permanent Outsiders' in Singapore." She intends to pursue PhD research at Macquarie University, Sydney, Australia, on the subject of Chinese migration, identity, and networks in the Greater Mekong subregion.*