

Cultural Influences on Conversational Gesture: Native Japanese Speakers in the United States

Beth L. Macauley
University of Tulsa, USA

Ken Nakatani
Washington State University

Abstract

In order to determine the effects of language and culture on gesture production, eight native Japanese persons living in the United States were videotaped while engaged in Japanese and English conversations with an examiner. The number and type of gestures produced during each conversation were calculated. Results indicated that twice as many emphasis gestures were produced during the English conversations than during the Japanese conversations while the number of filler and content gestures remained the same. It is hypothesized that gesture production is influenced primarily by the culture and language in which one is living.

Introduction

Gestures are one part of non-verbal communication. McNeill (1992) defined gestures as the movements of the hands and arms that occur simultaneously with speech. Nespoulous, Perron and Lecours (1986) defined gestures as the movements of the body, or any part of the body, that express thoughts or feelings during interaction with others. Gestures are learned innately, not consciously, as blind people gesture even though they have never seen gesture (Iverson & Goldin-Meadow, 1998). However, there are similarities and differences in gesture production across cultures. For example, the gestures conveying information about emotions, sports, playing musical instruments, and using tools are identical in many parts in the world. Okada and Brosnahan (1990) reported that the gesture for "cutting with scissors" is produced by opening and closing the index and middle fingers for persons in Japan and America because the scissors are essentially the same (Okada and Brosnahan, 1990).

Gesture is an integral part of culture. To understand foreign gestures, it is critical to understand the culture as gestures occur more frequently in some cultures (*e.g.*, Hispanic) and not in others (*e.g.*, Japanese). Additionally, gestures may take different forms for different ethnic groups (Feyereisen and Lannoy, 1991). Efron (1972) observed cultural differences in the types of gestures used. Efron noted that Italian and Jewish immigrants to America differed in their use of gestures; the Italians made more use of kinetographs (showing a bodily action) and pictographs (drawing a picture) than Jewish people. The Jewish people produced gestures in narrower space that were shorter in duration with irregular rhythm and frequent changes of direction, than those of the Italian speakers. The Jewish immigrants executed the movements in the front and vertical planes and used mostly their hands and forearms unilaterally; the broader gestures of the Italians occupied the front, vertical, and lateral planes and involved the use of both arms simultaneously. Other differences concerned the social and ecological aspects of gestures. The Jewish immigrants often spoke close to or while touching their partner, whereas the Italians maintained greater inter-individual distances. Gestures with held objects or simultaneous gestures by the listener were observed only among the Jewish people. On the semantic level, the gestures performed by the Jewish immigrants described the thought pathways or showed the different steps of an argument; the Italian gestures conveyed symbolic or illustrative meanings and referred to concrete aspects rather than to abstract processes. Schefflen (1972) reported that British-Americans do not gesture broadly like Italian-Americans and that middle class British-American children are taught not to gesture because it is regarded as impolite.

Japanese and American-English speakers use gestures to express emotion, but Japanese people rarely talk about their emotions while Americans frequently talk about their emotions and tend to express their opinions more directly. Americans also use direct eye contact and are more likely to use gestures when speaking while Japanese people are very concerned with self-image and express themselves with respect and humility through verbal expression and overall body language. Within the Japanese culture, fewer gestures are used because speaking with gesture is regarded as rude. Okada and Brosnahan (1990) noted that the Japanese tended to gesture more than the Americans in happy situations. Americans often consider this difference excessive or even insincere. The difference in gesture production may be one source of miscommunication between the two cultures. The purpose of the present study was to examine cultural influence on gesture production by comparing

the amount of gestures produced during conversation in Japanese and English by native Japanese persons living in the United States.

Methods

Participants

Eight native Japanese speakers who were fluent in English and had lived in the United States for at least six months participated in this study (Table 1). All participants received a score of at least 500 on the *Test of English as a Foreign Language (TOEFL)*. All participants were informed of the procedures, and were told that the conversation was needed to assess their language skills. At the end of the conversation, a debriefing statement about gesture production was given to the participants and consent to study their gestures was obtained.

TABLE 1. Participant Information

Participant Number	Native Language	Second Language	Age	Sex	Education (years)	TOEFL Score	Years in U.S.A.
1	Japanese	English	29	F	19	A	4 : 6

2	Ja pa ne se	En gli sh	2 4	F	16	A	2 : 5
3	Ja pa ne se	En gli sh	2 3	F	17	A	2 : 0
4	Ja pa ne se	En gli sh	2 1	F	14	B	2 : 1 0
5	Ja pa ne se	En gli sh	2 0	M	13	B	1 : 2
6	Ja pa ne se	En gli sh	2 2	F	16	B	0 : 6
7	Ja pa ne se	En gli sh	3 0	F	16	B	1 : 1 0
8	Ja pa ne se	En gli sh	2 1	F	12	B	1 : 1 0

A – received score greater than 550 on the *TOEFL*

B- received score greater than 500 on the *TOEFL*

Procedure

Each participant was videotaped during an interview with the examiner in a quiet room. The examiner was a native Japanese person fluent in Japanese and English. The participants and interviewer were seated in a face-to-face conversation position. The video camera was placed behind the examiner and off to the side so that it would not disrupt the attention of the participants. Conversation was elicited first in Japanese and then in English through ten open-ended questions (Table 2).

Table 2. Questions and Statements used to elicit Conversation

Tell me something interesting about yourself.
What are your hobbies?
Tell me about your family.
If you could travel anywhere in the world, where would you go?
Tell me about the most memorable experience in your life.
Tell me how to make a cup of hot tea.
Tell me about your summer vacation.
What do you usually do on Sunday?
Tell me about your house/apartment.
If you had \$1,000,000 right now, how would you use it and why?

Scoring

All of the conversations were scored independently by two graduate students who were fluent in Japanese and English. The two students completed a training session and were required to achieve 90% inter- and intra-rater reliability before scoring the participants' conversations. The total number of gestures, total time of conversation, total time of participant's part of the conversation, category of gesture, subcategory of gesture, total number of gestures per category were recorded. A gesture per minute ratio (GPM) was calculated using the formula below to standardize the gesture data:

Gesture per minute (GPM) = $\frac{\text{total number of gestures}}{\text{total time participants talked in minutes}}$

Type of gesture was categorized according to the three main gesture categories, emphasis, filler, and content (Ekman and Friesen, 1969) and subcategories of content

gestures as described by Macauley, Foundas, Raymer, Maher, Rothi, & Heilman (1995). A complete description of the gesture categories can be found in Table 3.

Table 3. Gesture Classification System

EMPHASIS

Batons: A baton is a movement of the hand which beats out time, accentuates, or emphasizes speech, not related to the content of the speech.

FILLERS

Ideographs: An ideograph is a movement of the hand which sketches the direction of a thought, and not related to content of the speech. An ideograph may express or replace a word where there is momentary word-recall difficulty.

CONTENT

Deictic: A movement of the hand which involves pointing to a present object. A characteristic deictic movement is the pointing to an object with the index finger.

Kinetographs: A movement of the hand which depicts a physical movement such as brushing hair or using a screwdriver

Orthographs: A movement of the hand which indicates an emblem, movement that has linguistic meaning such as waving good-bye, hitchhiking, and thumbs up.

Pictograph: A movement of the hand which draws a picture of the referent.

Descriptive: A gesture that draws an object. Example, gesturing the outline of a wheel.

Locational: A gesture that indicates the location of the referent in relation to another object. Ex. Pointing west and then east to indicate Atlantic and Pacific oceans

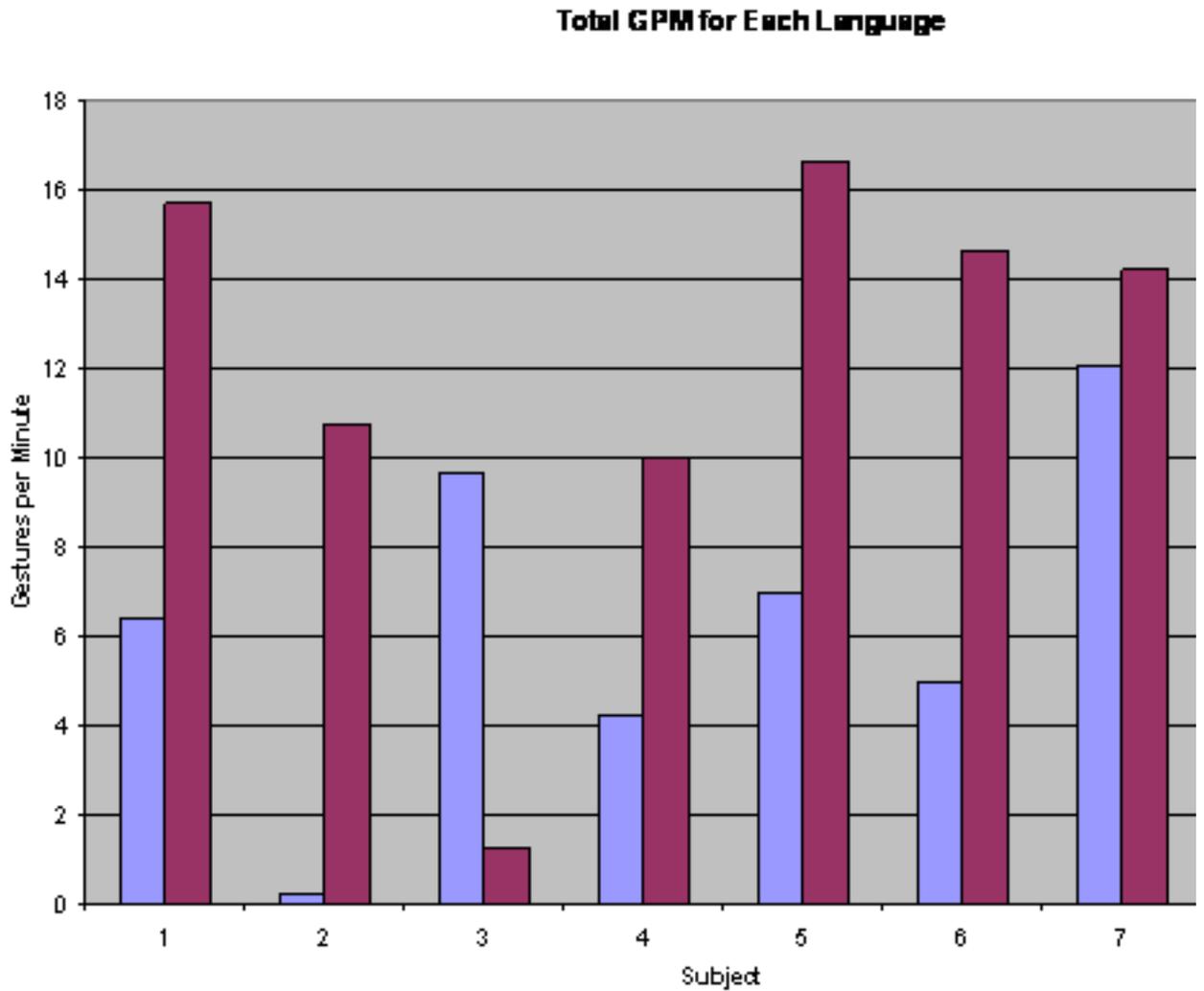
Quantitative: A gesture that indicates the size or quantity of an object. Ex. Holding hands apart to indicate the size of a fish.

Results

The GPM ratio for overall number of gestures produced doubled from Japanese to English conversations. The participants produced an average of 6.72 gestures per minute with a range of 0.22 to 12.06 while speaking Japanese and an average of 12.48 gestures per minute with a range of 1.28 to 16.61 while speaking English (Figure 1). This difference in the total gesture per minute ratio was significant when

a paired samples t-test was calculated ($p=0.04$, $df = 14$).

Figure 1.

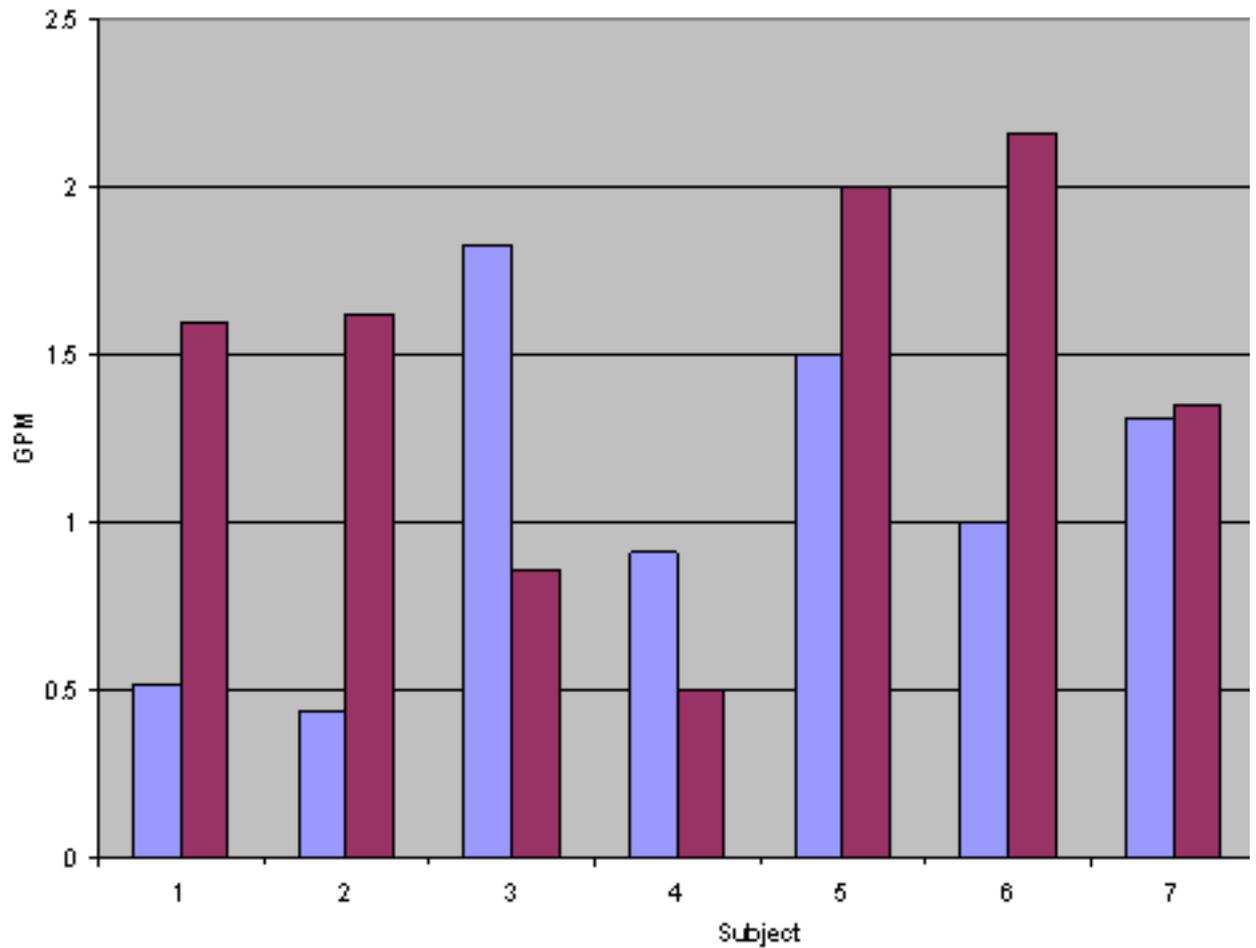


When the number of content gestures produced per minute was examined, it was found that the subjects produced an average of 0.95 content gestures per minute with a range of 0.13 to 1.88 content gestures per minute while speaking Japanese and produced an average of 1.29 emphasis gestures per minute with a range of 0.23 to 2.16 content gestures per minute while speaking English. This difference in the number of content gestures per minute was not significant when a paired samples t-test was calculated ($p=0.02$, $df = 14$). See Figure 2.

Figure

2.

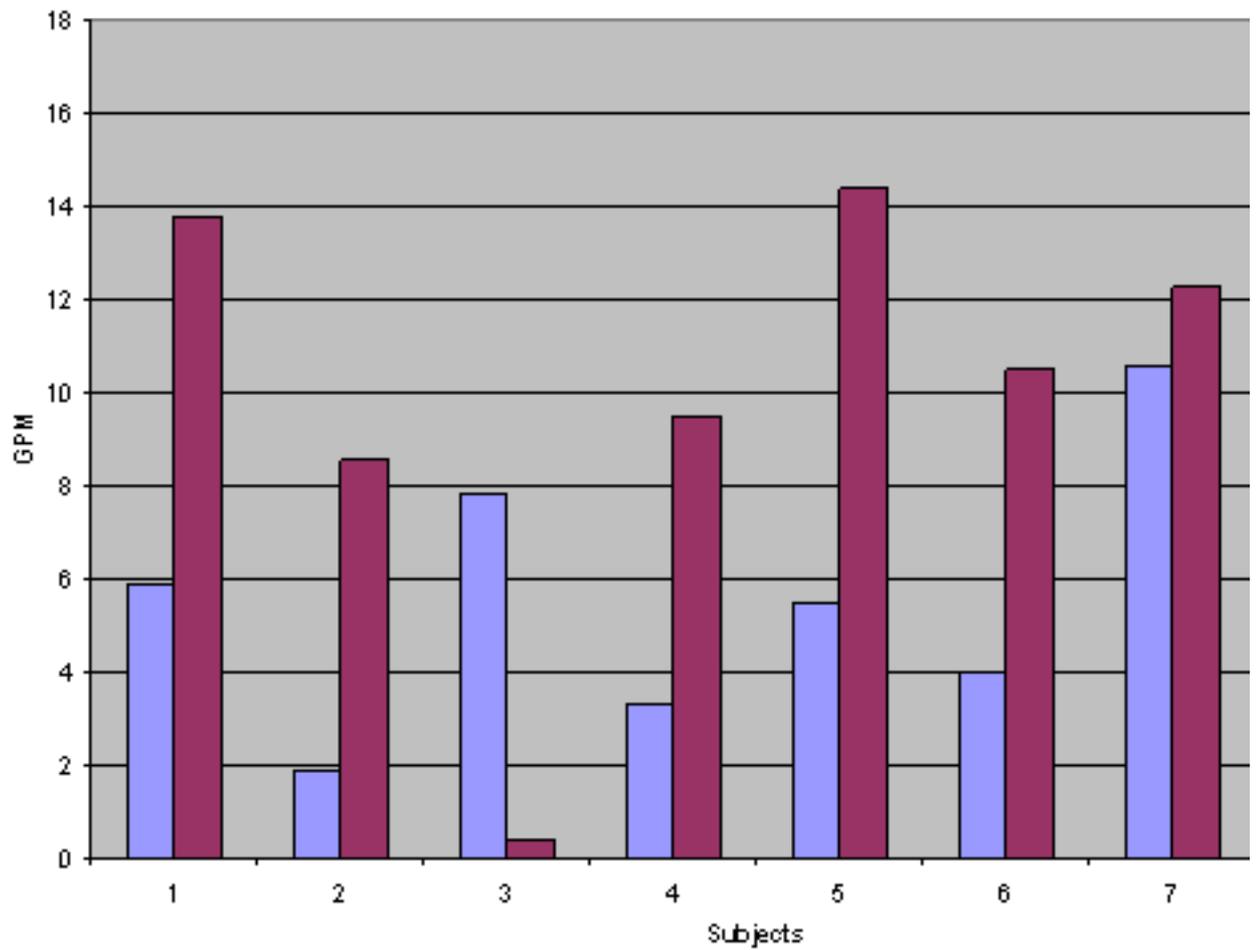
GPM - Content Gestures



The participants produced an average of 5.75 emphasis gestures per minute with a range of 1.88 to 10.56 while speaking Japanese and an average of 10.74 emphasis gestures per minute with a range of 0.42 to 16.38 while speaking English (Figure 2). Using a paired samples t-test, the GPM for emphasis gestures was significant ($p=0.02$, $df = 14$). Figure 3.

Figure 3.

GPM - Emphasis Gestures

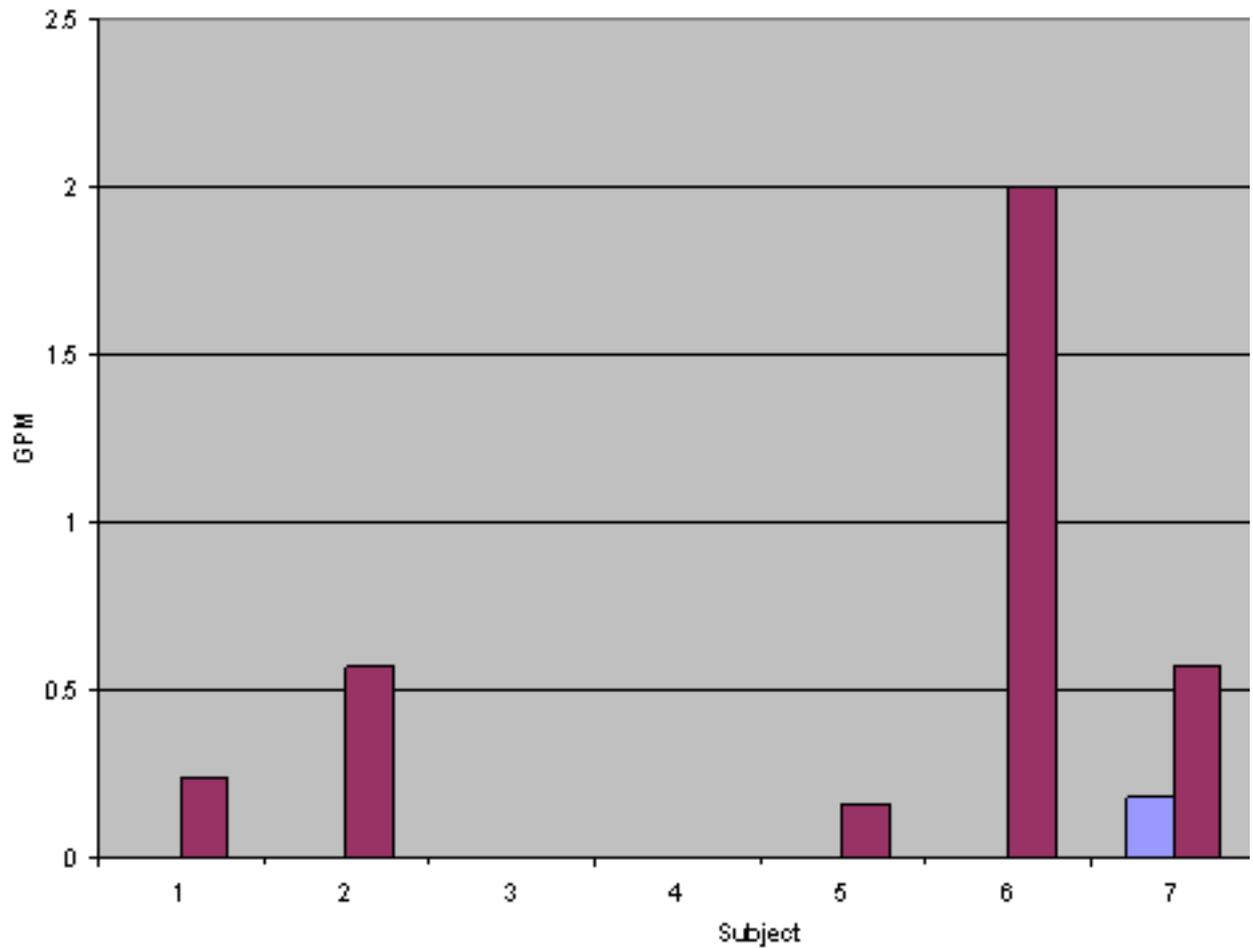


The participants produced an average of 0.02 filler gestures per minute with a range of 0 to 0.18 while speaking Japanese and an average of 0.44 filler gestures per minute with a range of 0 to 2.00 while speaking English (Figure 3). Using a paired samples t-test, the GPM for filler gestures was not significant ($p=0.06$, $df = 14$).

Figure 4.

Figure 4.

GPM - Filler Gestures



In order to determine if a relationship existed between length of time in the United States and gesture production, a Pearson Product Moment Correlation was calculated between average GPM and length of time in the United States. Results indicated no significant correlations between overall GPM and length of time in the United States (Table 4).

Table 4. Results of correlation statistic between Overall GPM and Length of Time in the USA.

	Length of Time in USA
Overall GPM –Japanese	0.07
Overall GPM – English	0.17

Conclusion

The results of this study indicate that native Japanese speakers use a greater number of spontaneous gestures while speaking English than while speaking Japanese. The participants speaking in English, with the exception of participant number 3, used significantly more emphasis gestures than when speaking in Japanese. All types of gestures were more in English than during their conversation in Japanese. These findings differ from the initial hypothesis that stated that the Japanese cultural bias to produce fewer gestures would carry over into a second language and culture. Instead, the gestures produced while the participants spoke English nearly doubled. This difference cannot be accounted for by the use of filler gestures or content gestures even though it seems logical that more filler and content gestures should occur when one is speaking a second language. The number of filler and emphasis gestures produced did not differ between the Japanese and English conversations.

In Japan, the rate of gesture use by native Japanese speakers during conversation is low. According to Japanese culture and tradition, the use of gestures in social situations is considered rude, especially when talking to one's elders. When gestures are used in Japan, the listener may perceive the speaker to be lacking good verbal communication skills, lacking a good education, and to even be mentally impaired. For these reasons, most Japanese people do not use many gestures while speaking.

However, the results of this study indicated that the use of gestures was elevated by native Japanese speakers while speaking Japanese when native speakers in Japan would generally use few gestures. This phenomenon might be explained in that the American cultural bias to produce gestures was learned by the students as they lived in the United States. The native Japanese speakers have learned to use gestures accompanied with speech in daily living or in social situations in the United States. Even the participant who had been in the states for only six months followed this trend. It is possible that the native Japanese speakers produced gestures during the conversation in English as do native English speakers in the United States and then this behavior was transferred to the speech in Japanese.

Contrary to the author's hypothesis, the results of this study indicated that all participants seldom used content gestures. It was also hypothesized that the native

Japanese speakers would use content gestures most frequently in order to compensate for their poorer verbal ability in English. However, the results showed that the participants in this study used relatively the same number of content gestures while speaking Japanese and while speaking English. This may have occurred because content gestures involve a movement of the hand that indicates an emblem (Lemay, 1988). At the same time, emblems may be arbitrary, often confusing and could be offensive to a listener from a different culture. An illustration could be the gesture "come here". In the United States, a person might curl the index finger in and out to signal, "come here". Throughout much of European and many Latin American countries, as well as Japan, the gesture for signaling, "come over here" is to extend the arm, hand out, palm down, and then make a scratching motion with the fingers. However, people in the United States do not customarily use this later motion of gesture, and may consider it uncomfortable, effeminate, or even puzzling (Axtell, 1991). Therefore, the content gesture accompanied with the speech may have increased confusion rather than assist with comprehension.

While the use of filler gestures was not statistically significant ($p > .06$), the frequency of use would not assuredly affect fluency. You recall that filler gestures fill time where there is a momentary word-find difficulty (Ekman, 1969). This word-find difficulty occurs with most, if not all, non-native English speakers. The frequency of the word-find difficulty is directly related to fluency of speech; though it is difficult for non-native English speakers to appear fluent. Filler gestures can also be used to fill-in the silence caused by word-finding difficulty. It gives time for the speaker to recall or choose an appropriate word to fit the content of the conversation. It may seem a big help for the speaker to be able to use filler gestures, but it is not always so simple for the speaker who speaks English as a second language. It could be that when the participants produced speech, they chose familiar words or phrases instead of taking a risk of disfluency caused by choosing unfamiliar words or phrases. Participants may have replaced a low frequency and complex word with a high frequency and simple word in order to prevent word-find problems. In this study, the answers to the questions could be flexible and non-specific. If the participants were to be asked more specific or academic questions that required specific terminology (*e.g.*, "Describe the functions of the brain while mapping the locations"), the participants might produce filler gestures more frequently because there is no escape from finding the specific words needed to answer the question.

An emphasis gesture is a movement of the hand that emphasizes speech and is not related to the content of the speech (Lemay, 1989). Emphasis gestures occurred

more frequently than any other gesture reviewed in this study. Also contrary to the hypothesis that emphasis gestures would be used to the same extent in both languages, they were used more frequently in English. The increased production of emphasis gestures during English could be explained from the following two perspectives. First, the participants might have produced emphasis gestures to catch the listener's attention to the speech itself while speaking in English. In other words, the speaker may have been afraid of losing the listener's attention while speaking in their second language.

The speaker, while speaking in the second language, may also have felt anxious as to whether or not the listener understood his speech. The speaker needs feedback to determine if he has been successfully understood. Since the examiner did not give feedback, the use of emphasis gestures may have been exaggerated.

No significant correlation between the overall GPM and length of time in the United States was found in this study. The shortest length of stay in the United States was six months (participant 6) and the longest was four years and six months (participant 1). Even these two participants produced similar numbers of gestures of each type.

As described earlier, Efron (1972) compared the gestures performed during conversation by Jewish immigrants from Eastern Europe with those performed by immigrants from Italy. Some differences of gesture usage were noted in its duration, direction, and social aspects between those two ethnic groups. The gestures performed by the Jewish immigrants described the thought pathways or showed the different steps of an argument, while the gestures produced by the Italian immigrants conveyed symbolic or illustrative meanings. He then observed second-generation immigrants from both groups. The ethnic characteristics of the gestures had faded. Efron's (1972) found that gestural characteristics disappeared with the social assimilation of the individual.

Immediately after the videotaped interview for this study, the author explained the purposes of this study to the participants. Anecdotally, the participants reported a significant change regarding their use of gestures. They stated that their use of gestures was gradually increasing with the length of their stay in the United States. They also noticed an increased frequency of gesture use especially during conversation in English in their daily living.

The results obtained by the gesture production of native Japanese speakers indicate that gesture usage can be learned. The individual may adapt to the gesture usage of

the new culture when the person is exposed to that language and culture over a period of time. It is possible that the influence of the "new" culture may be rapid for some people and less rapid for others. According to this hypothesis, the gesture use influenced by the new culture may eventually become a habit for the speaker and could potentially influence his gesture production in the native language as well.

Further research into the functions of gestures that accompany conversation in the second language would be helpful to help understand the influence of culture on gesture. For example a follow-up study examining the gesture production of native English speakers who have lived in Japan and learned Japanese as a second language would make for a good comparison. Would native English speakers reduce the number of gestures produced during conversation in order to assimilate into the Japanese culture as native Japanese speakers have increased their use of gesture for this country? Additionally, a gesture analysis under two controlled conditions in which gesture production is allowed or prohibited (*i.e.* hands kept under thighs during conversation) may reveal the effects of gestures on fluency, tempo, and other factors while speaking in the second language.

References

- Axtell, R.E. (1991). *Gestures – The Dos and Taboos of body language around the world*. New York: John Wiley & Sons.
- Efron, D. (1972). *Gesture, race, and culture*. Hague: Mouton.
- Ekman, P. & Friesen, W.V. (1969). The repertoire of non-verbal behavior: Categories, origins, usage, and coding. *Semeiotica*, 1, 49-98.
- Feyereisen, P. & Lannoy, J.D. (1991). *Gestures and speech: Psychological investigations*. New York: Cambridge University Press.
- Foundas, A.L., Macauley, B.L., Raymer, A., Maher, L.M., Heilman, K.M., & Rothi, L.J.G. (1995). Gesture laterality in aphasic and apraxic stroke patients. *Brain and cognition*, 29, 204-213.
- Fujino, H., Iwasaki, T., & Shibuya, N. (1990). Gesture as self-generated cue: A Case report of one aphasic patient. *Onsei-gengo Igaku*, 31, 11-19.
- Glosser, G., Weiner, M. & Kaplan, E. (1986). Communicative gestures in aphasia. *Brain and Language*, 27, 345-359.

Graham, J.A., & Argyle, M. (1975). A cross cultural study of the communication of extra-verbal meaning by gestures. *International Journal of Psychology, 10*(1), 57-67.

Iverson, J., & Goldin-Meadow, K. (1998). Why people gesture when they speak. *Nature, 278*, 335-6.

Lemay, A., David, R., & Thomas, A. (1988). The use of spontaneous gesture by aphasic patients. *Aphasiology, 2*(2), 137-145.

McNeill, D. (1992). *Hand and mind*. Chicago: The University of Chicago Press.

Morris, D., Collett, P. & Marsh, P. (1980). *Gestures: Their origins and distribution*. New York: Stein and Day.

Nesopolous, J.C., Perron, P., & Lecours, A.R. (1986). *The biological foundation of gestures: Motor and semantic aspects*. New Jersey: Lawrence Earlbaum & Associates.

Okada, T., & Brosnahan, L. (1990). *Japanese and English gesture: Contrastive nonverbal communication*. Tokyo: Taishukan Press.

Schefflen, A.E. (1972). *Body language and the social order: Communications as behavioral control*. New Jersey: Prentice-Hall.