

# An Observational Study into the Cross-cultural Differences of Postural-gestural Communication between Japanese and Non-Japanese

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## Abstract

Non-verbal communication not only utilizes our facial expressions and such microscopic detail as the rate of our eye-blink and whether our smile reaches our eyes, but also postures and gestures (postural-gestural cues). It is these postural-gestural cues which are of particular interest in this study. Can our postures alone elicit the same emotional responses from observers as facial expressions? This study uses stick figures to take a closer look at the interpretations of Japanese and non-Japanese people on emotion depicted by stick figures. If so, do Japanese and non-Japanese interpret the figures in the same way? Our analysis of subject's interpretations shows that this may prove to be a fruitful area of investigation for the future.

## Introduction

Everyday we meet and talk with people. During these day to day encounters we are subject to different emotional responses from those we interact with. These emotional responses may be verbalized, "I'm excited about your proposal" but more often than not they take the form of non-verbal communication. These non-verbal signals are monitored and assessed throughout our interactions. Such monitoring and assessment of emotion are necessary if one is to give an appropriate emotional response. "Does she like my present? Are my students getting bored of my speech?" are examples of questions we may ask ourselves.

This is not the only way in which non-verbal emotional expression can be used. It can also lend itself to discovering the hidden meaning behind what a person may be saying. As an example, let's take a hypothetical situation of a person (we'll call John) who has been invited to dinner by his colleague (David). David wants John to come to dinner to get

to know him better. John feels obligated to accept the invitation because both of them will begin working on a project together soon. However John feels that he has spent too many nights away from home lately and would like a quiet weekend at home. When David asks John, John quickly tries to think of a plausible reason why he might decline the offer of dinner. John accepts the invitation, but by the expression on his face and body language, David wonders if John really wants to come. The important question is, how can David tell that John does not really want to although John accepted the invitation? The answer is because of the mixed signals David receives from John. John is accepting verbally, but he leaned away from David as he replied, hesitating slightly before he spoke. John's smile looks forced and one arm is crossed over his body in a defensive gesture. David, or more generally an observer, when interacting with someone will monitor both forms of communication : verbal and non-verbal. The latter comprised of both facial and postural gestural expressions. (In this study we will be using the term postural gestural expression to mean any form of non-verbal expression except facial, as proposed by Rosenberg and Langer, 1965).

When the verbal prose and the non-verbal signals come into conflict, like in our hypothetical example above, then the non-verbal expression, "has normative preeminence" (Carroll & Russell, 1996). The words or situation is a guide about the type of emotional expression we expect, but they are not a guarantee. That is, if a person is invited to dinner and he or she accepts, one would expect that person to show happiness or even surprise. However there is no guarantee that the person is happy. The words or situation only suggest how a person might react or is reacting, but the facial and gestural reaction is the real reaction to be judged by the observer (Carroll & Russell, 1996). This deeper issue of the message contained in the non-verbal expression is interesting. Facial expression has a long history and has been researched extensively (Darwin, 1927, 1965; Aristotle, 1913; Ekman, 1964). According to Oatley and Jenkins (1992), facial expression has by far the most extensive body of data in the field of human emotion. Common sense tells us that facial expressions are easily recognized signals of specific emotions. This ease of recognition provides more support for the universality theorists. Despite arguments to the contrary that there is no universal set of emotions (Woodworth, 1938; Ortony & Turner, 1990; Russell, 1994), the literature indicating that there is universality in our facial expression (Ekman, 1994) is impressive.

Gestures and postures, however can also provide additional information within a communication situation. To illustrate, suppose you are in a foreign culture where you cannot speak the language. You need to buy new furniture for your apartment. You (try to communicate to a local person by using a phrase book to) ask her where the nearest

furniture store is. After asking her the question she begins to wave her arms frantically in front of her body, while smiling and taking a step backwards. What is the woman's emotional reaction?

When the face and the gestures are in conflict (as in the above example) the gestures are clearly just as important as facial expression. Even though the lady is smiling it is obvious that is not the only thing occurring. The lady has taken a step backwards and appears uncomfortable. Logically there must be a furniture store somewhere. One conclusion from this example is that the lady did not understand your terrible attempt at speaking her language and does not know what to do. The waving of the arms is a refusal in embarrassment perhaps because she does not speak English. Whatever the reason, it is clear from this example that the two people are not communicating. The verbal communication failed and the non-verbal communication produced a mixed response. From this example we learn that postures and gestures can be equally as important as facial expression in terms of non-verbal communication.

In this study we hope to take a closer look at the differences between Japanese and non-Japanese interpretations of postures and gestures (postural-gestural expression. Rosenberg & Lager, 1965). Postural gesture is a growing area of popularity in Psychology. This can be seen by the number of books about flirting, lying and successful interviewing (Pease, 1992 ; Cohen, 1992). These behaviors utilize both facial expression and postural-gestural expression. The term 'communicate' is laid out by Wiener, et al. (1972) whereby communication implies a socially shared system, that is, a code. We predict that in Japan people use a different non-verbal code. However, as to the universality theory of facial expression we wonder if a similar theory could be applied to posture.

Wiener, et al. (1972) called for a distinction between communication and sign. Failure to make this distinction would yield a fragmented and unsystematic research literature. This observational study seeks to only assess the ability of Japanese and non-Japanese to interpret an emotion from the postural-gestures of a stick (line-drawn) figure (see appendix). The stick figure being one constructed with ink on paper cannot be actively 'trying' to communicate. We are interested in observer's perceptions. What emotion do they think the stick figure displays? Do Japanese and non-Japanese construe similar emotions from these stick figures? This is especially interesting because the non-Japanese participants have been living in Japan for a least three months. There is no face or context inherent in the figures except that they take the form of a person. No male or female characteristics were assigned to the figures. This is concurrent with studies of facial expression which usually present faces void of context.

The title of this paper uses the term non-verbal communication even though no real communication is occurring. We use the term loosely to mean that if the figures were real people and the observer saw somebody adopting these postures, what emotion would the observer "place upon" the figure. So the emphasis is on the observers' interpretations of postural expression, not on communication per se. This is an observational study and outlines possible future research.

The purpose of this study is to assess if Japanese and non-Japanese think stick-figures can depict emotion. Would Japanese and non-Japanese think the stick-figure depict the same emotions? That is, would the Japanese participants interpret the stick figures in the same way as each other? Likewise would the non-Japanese participants interpret the stick figures in the same way as each other? Finally, would there be similarities in the emotions perceived in the stick figures between the two groups and thereby moving closer to a Universality theory of postural gestures?

## Method

### Subjects

Participants for this study were students studying at the Toyama Medical and Pharmaceutical University (TMPU) and foreign language teachers on the Japanese Exchange Teaching Programme (JET Programme). A questionnaire depicting ten stick-figures was distributed (see Appendix). A total of 171 Japanese students completed the questionnaire as part of their regular psychology lectures (63 males, 108 females) aged between 18 and 26 years old. A total of 63 teachers completed a translated version of the questionnaire (in four separate groups) during a regional teachers meeting (26 males, 35 females and 2 non response) aged between 21 and 44 years old. The foreign language teachers were from Australia, Canada, New Zealand, U.S.A and the United Kingdom. Incomplete data was omitted.

### Measures

A questionnaire depicting ten stick figures in varying states of posture was distributed. Subjects were asked to write down the emotion which best described the posture of the stick figures. The questionnaire was constructed based on figures used by Rosenberg and Langer (1965). Their study utilized the Stick Figure Test (Sarbin & Hardyck, 1955) in order to assess "conformance and empathy as a dimension of role playing ability". The Japanese students had already completed the questionnaire using ten of the stick figures (chosen at

random). For the non-Japanese subjects the same ten stick figures were used. Demographic information on gender, age, nationality, job-type and length of stay in Japan or another foreign country were also obtained from the foreign teachers who participated in this study.

### Procedure

Japanese subjects were tested as a group. Non-Japanese participants were tested in four separate groups on four different days due to the timing of their regional meetings. Participants were asked to answer the question written at the top of the questionnaire, "How do you think these figures show feeling or emotion?" The questionnaire given to the non-Japanese participants was translated into English since all non-Japanese participants were either native English speakers or they were fluent in English. Everyone was given the same instructions. Participants were asked to write down their perceptions of the emotions expressed by the stick figures.

### Results

Table 1 summarizes the response of emotions perceived for each stick figure (1~10) by Japanese and non-Japanese, the number of people who perceived the emotion in this way and the corresponding percentage. If the percentage is less than 2 % (that is, the frequency in Japanese is less than 4 and in non-Japanese is less than 2), they were omitted because they were insignificant.

Table 1. Summary of responses by Japanese and non-Japanese

stick figure 1					
Japanese			non-Japanese		
Emotion	Frequency	Percentage	Emotion	Frequency	Percentage
Tired	68	39.8	Curious	19	30.1
Disappointed	11	6.4	Sick	14	22.2
Curiosity	10	5.8	Tired	9	14.3
Troubled	8	4.7	Constipated	4	6.3
Prepared	8	4.7	Laughter	4	6.3
Pain	5	2.9	Concentration	4	6.3
Wonderment	5	2.9	Pain	4	6.3
Cautious	4	2.3			

stick figure 2					
Japanese			non-Japanese		
Emotion	Frequency	Percentage	Emotion	Frequency	Percentage
Thinking	66	38.6	Thinking	49	77.8
Worry	50	29.2	Perplexity	7	11.1
Perplexity	28	16.4	Tired	2	3.2
I don't know	7	4.1			

stick figure 3					
Japanese			non-Japanese		
Emotion	Frequency	Percentage	Emotion	Frequency	Percentage
Never mind	67	39.2	Don't know	30	47.6
Give up	30	17.5	Perplexity	4	38.1
Amazement	26	15.2	Never mind	2	3.2
Perplexity	16	9.3			
Questioning	11	6.4			
Embarrasment	4	2.3			

stick figure 4					
Japanese			non-Japanese		
Emotion	Frequency	Percentage	Emotion	Frequency	Percentage
Disgust	66	38.6	Rejection	37	58.8
Rejection	65	38	Repulsed	6	9.5
Stop	9	5.3	Defensive	3	4.8
Relaxed	8	4.7	Uncooperative	3	4.8
Be reserved	6	3.5	Irritation	3	4.8
Perplexity	4	2.3	Puzzlement	2	3.2
			Anger	2	3.2

stick figure 5					
Japanese			non-Japanese		
Emotion	Frequency	Percentage	Emotion	Frequency	Percentage
Relaxed	103	60.2	Relaxed	55	87.3
Boring	19	11.1	Boring	2	3.2
Tired	17	9.9	Seductive	2	3.2
Happy	7	4.1			
Idle	4	2.3			

stick figure 6					
Japanese			non-Japanese		
Emotion	Frequency	Percentage	Emotion	Frequency	Percentage
Anger	66	38.6	Anger	16	25.4
Enthusiastic	24	14	Strong	16	25.4
Joy	22	12.9	Excited	15	23.8
Cheer/Excited	22	12.9	Anxious	2	3.2
Vigourous	6	3.5	Scared	2	3.2
Threatened	6	3.5	Stretching	2	3.2
Aggressive	4	2.3	Happy	2	3.2

stick figure 7					
Japanese			non-Japanese		
Emotion	Frequency	Percentage	Emotion	Frequency	Percentage
Joy	143	83.6	Joy	37	58.8
Surprised	16	9.3	Happy	13	20.6
			Surprise	6	9.5
			Show off	4	6.3
			Give up	2	3.2

stick figure 8					
Japanese			non-Japanese		
Emotion	Frequency	Percentage	Emotion	Frequency	Percentage
Perplexed	16	9.3	Guarded	14	22.2
Fear	15	8.8	Energetic	10	15.9
Happy	11	6.4	Playful	9	14.3
Surprised	8	4.7	Fear	5	7.9
Apologetic	7	4.1	Confused	4	6.3
Guarded	6	3.5	Catching	4	6.3
Ask a favour	6	3.5	Anger	2	3.2
Rushed	4	2.3	Laughter	2	3.2
			Excited Speech	2	3.2
			Contortion	2	3.2
			Working	2	3.2

stick figure 9					
Japanese			non-Japanese		
Emotion	Frequency	Percentage	Emotion	Frequency	Percentage
Bashful	90	52.6	Shy	41	65.1
Flattered	10	5.8	Affection	8	12.7
Passive	5	2.9	Wants a favour	7	11.1
Perplexed	4	2.3			
Apologetic	4	2.3			

stick figure 10					
Japanese			non-Japanese		
Emotion	Frequency	Percentage	Emotion	Frequency	Percentage
Confident	85	49.7	Anger	12	19
Anger	61	35.7	Steadfast	11	17.5
Dominance	4	2.3	Stern	8	12.7
			Defiance	7	11.1
			Confrontational	6	9.5
			Authorative	5	7.9
			Dominance	4	6.3
			Macho	3	4.8
			Impatience	3	4.8

## Discussion

It seems clear that both Japanese and non-Japanese think that stick figures are capable of identifying emotions since the majority of participants were able to write an emotion for many of the stick figures. However it was noticeable that some of the answers given were not actually emotions but descriptions of an action (predominantly figure 8). It appears that some stick figures were easier than others to assign an emotion. Further evidence for this was in that these same figures which were described using action words also showed the greatest range of answers (figure 8).

The emotions which Japanese and non-Japanese thought the stick figures depicted showed many interesting results. Due to the observational nature of this study only the

large differences or similarities will be discussed.

Looking at the table of results for stick figure 1 (Sf1) both Japanese (J) and non-Japanese (NJ) participants rated the figure similar on three separate emotions : tired, curious and pain. 39.8% of J. participants thought figure 1 looked "tired," while only 14.3 % of NJ participants thought the same. A reason for this may be the observed habit of squatting in Asian countries when they are resting, while this practice is less frequent in Western societies. Only 5.8% of J participants thought Sf1 was "curious." This is a considerable difference from the first rating of "tired" and so we might say that Japanese participants think Sf1 depicted the same emotion. However, J participants and NJ participants differed greatly in their opinions. 30.1% of NJ participants thought Sf1 was depicting "curiosity" compared to only 5.8% of J participants. Looking at the percentages we can tentatively draw the conclusion that there were no real perceived similarities between the interpretations of Japanese and non-Japanese participants for stick figure 1. When Rosenberg and Langer (1965) conducted their study they expected this figure to yield the answer of curiosity, so the fact that Japanese participants labeled Sf1 as "tired" may be reflecting cultural differences and is worth future investigations.

For stick figure 2 (Sf2) both Japanese (38.6%) and non-Japanese (77.8%) rated "thinking" as first. The J participants also thought it depicted "worry" (29.2%), while NJ participants, (11.1%) responded that the figure depicted "perplexity." 16.4% of Japanese also thought Sf2 was perplexed. Both Japanese and non-Japanese agree that stick figure 2 could be depicting someone thinking. Is thinking an emotion? Can this be replaced with the word pensive? Problems with semantic language encoding will be discussed a little further on.

Stick figure 3 (Sf3) is interesting not because of it's high rate of convergence on one emotion like the previous figure but for the absence of convergence. Japanese participants thought the figure was depicting someone who "didn't mind" (39.2%) whereas only 3.2% of non-Japanese thought the same. Non-Japanese participants rated "don't know" the most (47.6%) but also 38.1% of NJ thought the figure showed "perplexity." It seems that for Sf3 there is no one emotion which both J and NJ participants agree upon.

Stick figure 4 (Sf4) shows a high agreement for non-Japanese participants with "rejection" (58.8%) as opposed to the next closest (9.5%), "repulsed." Japanese participants were divided between "disgust" (38.6%) and "rejection" (38.6%). So both Japanese (38.6%) and non-Japanese (58.8%) thought Sf4 depicted "rejection."

Both Japanese and non-Japanese rated "relaxed" first for stick figure 5 (Sf5), with 60.2% and 87.7% respectively. Second was "boring" for both J and NJ participants (11.1%



and 3.2% respectively). This stick figure showed a remarkable similarity in the pattern of results. This figure is also the only figure to depict someone sitting horizontally. Mehrabian (1969) found the positioning of the trunk of the body to be of particular significance. In everyday life we tend to associate being still with being relaxed. For example, people who fidget a lot are thought as having a nervous disposition. If we see a posture which appears to be still (horizontally sitting on the ground with both hands on the floor and leaning backwards) then this posture may be easier to attach a label. If you imagine yourself in the same position as Sf5, then there are not many things you can do, except maybe watch T.V., talk with your friends or stretch your legs.

Mixed results were obtained for stick figure 6 (Sf6). The first ranking emotion was divided between "anger" (25.4%) and "strength" (25.4%) for NJ participants and "excited" followed a close third (23.8%). Japanese participants responded that the figure showed "anger" (38.6%) with "enthusiastic" behind at 14%. If you take a close look at the results of Sf6 you will notice that the top emotions were relatively negative and the subsequent ones "enthusiastic" and "excited" are quite the opposite of "anger." Both Japanese and non-Japanese found it difficult to distinguish between the two.

Stick figure 7 (Sf7) however showed very consistent results. The Japanese participants (83.6%) and non-Japanese participants (58.8%) both rated this figure as "joy." Again this stick figure shows a remarkable similarity to perceived emotion between Japanese and non-Japanese.

The range with which subjects answered, both Japanese and non-Japanese, was the only real similarity with stick figure 8 (Sf8). Both groups showed minor similarities: some Japanese and non-Japanese had both rated Sf8 as depicting "fear" (8.8% and 6.3% respectively), "happiness" (6.4% and 1.6% respectively) and "guarded" (4.1% and 22.2% respectively).

For stick figure 9 (Sf9), both Japanese (52.6%) and non-Japanese (65.1%) rated this figure in a similar way. Japanese participants rated "bashful" first, whereas non-Japanese participants rated "shy" as first.

Finally, stick figure 10 (Sf10) showed a large difference between the opinions of Japanese and non-Japanese. J participants thought Sf10 depicted "confidence" (49.7%) with "anger" close behind at 35.7%. It was also noticeable that there was a very small range for the Japanese participants. In contrast, non-Japanese participants thought Sf10 depicted "anger" (19.0%) with "steadfast" (17.5%) next. A closer look at the results of Sf10 by non-Japanese shows that the emotions listed are very similar and hard to separate. To elaborate, the difference between defiance and steadfast is very small as well as the difference between dominance and authoritative. This difficulty is commented upon by

Izard (1994) who says, "interpreting emotion labeling responses from different cultures involves the problem of determining the semantic equivalence of terms in different languages." He goes on to state that, "each emotion varies widely along an intensity dimension and that each point on the dimension might have a different semantic representation" (p.297). It could be the case that the English language for this type of emotion (stick figure 10) has more points along its semantic dimension than the Japanese language and thus would account for the small differences between emotional labeling in Sf10.

To continue this theme about criticisms of the semantics, Izard (1994) cites Wierzbicka (1986) who argued that the search for universal emotional experiences would require a language-independent semantic metalanguage. Although this approach would probably have its own pitfalls (Kolenda, 1987), it does highlight a real problem for emotion-labeling procedures. Another problem is that emotion recognition is much easier than emotion labeling. It is generally recognized that vocabulary comprehension precedes word production in language development (Izard, 1994). As we all know, finding the right words to describe even one's own feelings can be quite difficult. Ekman (1994) supports this idea in facial expression by stating that, "facial expressions can readily reveal emotional subtleties that are difficult to describe in words." The same may also be true for postural gestural expression. The 'tip of the tongue' sensation is another example of vocabulary comprehension preceding word production. "Furthermore, even cultures that share the same language (e.g., the United States and the United Kingdom) may have different attitudes about emotion, which may cause the same emotion word to have very different connotations" (Ekman, 1994).

It appears from this preliminary study that a lot can be learned from looking at postural gestures. The next question is whether there are differences between males and females both in their own postural-gestures and in ways men and women differ in their perceptions of postural-gestures. In our study, one response for stick figure 10 was, "mom mad at kid." This person had depicted the figure as being female. Pease (1992) also talks about the difference between male and female postural gestures. He says that people will display the "hands on hips" posture when they want to appear bigger and more aggressive. He goes on to say that this aggressive-readiness stance is often used by "professional models to give the impression that their clothing is for the modern, aggressive, forward thinking woman." He ends with the comment that a gesture of critical evaluation is often seen with the hands-on-hips pose. This ties with the maternal mom shouting at a child. Further investigations into sex differences may provide a more fruitful result cross-culturally based on the

reasoning that mothers all over the world critically appraise their children.

Although we did not find a similarity with all of our stick figures we did find some similarities. Mehrabian (1969) dealt with the significance of posture and position as communicating feeling or attitude. He reviewed a study by James (1932) who asked his subjects about the attitude expressed by each posture and the portion of the postures which they thought was the most significant. He found the head and the trunk positions were the most important indicators of attitude. However, he also found that specific discriminations were determined by the position of the hands and arms. Mehrabian (1969) described that the degree of sideways lean to attitude toward the addressee yielded different results for male and female communicators. He found that males exhibited less sideways lean and generally less body relaxation with intensely disliked males, whereas females exhibited their largest degree of sideways lean with intensely disliked male or female addressees.

From the above studies it seems that there may be component parts of postural gestures which are easily recognizable. Would they be transferable between cultures? It may be more useful to ascertain the common characteristics which may be used to determine emotion or feeling in stick-figures, like Mehrabian (1969) had attempted to do with body orientation, accessibility of body openness of arms and legs, and arms akimbo position. It could be that is a characteristic of posture such as these and not the whole posture which is common cross culturally. Although Mehrabian (1969) did not find anything conclusive, he did find that shoulder orientation could influence the results. Future studies may want to concentrate on finding some basic components much like the seven basic emotions in facial expression.

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## Appendix

### Questionnaire

How do you think these figures show feeling or emotion? (for non-Japanese)

各線画はどんな感情を表していると思いますか？ (for Japanese)

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

4 \_\_\_\_\_

5 \_\_\_\_\_

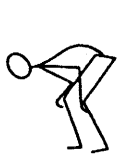
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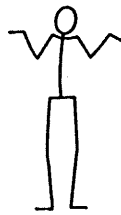
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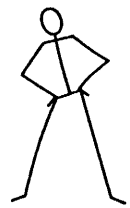
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