AUTHOR   Jungheim, Nicholas O.
TITLE   Assessing the Nonverbal Ability of Foreign Language
                Learners.
PUB DATE   Apr 94
NOTE   49p.; Paper presented at the Annual Meeting of the
                American Educational Research Association (New
                Orleans, LA, April 4-8, 1994).
PUB TYPE   Reports - Research/Technical (143) --
                Speeches/Conference Papers (150)

EDRS PRICE   MF01/PC02 Plus Postage.
DESCRIPTORS   College Faculty; College Students; *English (Second
                Language); Evaluation Methods; Foreign Countries;
                Higher Education; *Language Proficiency; *Language
                Tests; Measures (Individuals); Native Speakers;
                *Nonverbal Communication; Oral Language; *Role
                Playing; Second Language Learning; Statistical
                Analysis; Testing
IDENTIFIERS   Japan; Japanese People; Speaking Proficiency English
                Assessment Kit; Test of English as a Foreign
                Language

ABSTRACT

        This paper discusses a study that sought to design an
instrument for assessing the nonverbal ability of foreign language
learners. The subjects were 28 educated Japanese non-native speakers
(NNS) of English and 20 educated North American native speakers (NS)
of English. Materials used were the institutional Test of English as
a Foreign Language (TOEFL) for linguistic proficiency, the SPEAK test
for oral proficiency, and a series of four role plays for the
collection of nonverbal data. Proficiency tests were administered to
NNS subjects paired according to the results of the TOEFL. NNS and NS
subjects performed the three plays in pairs and the fourth with the
researcher's NS assistants. Role plays were transcribed and coded for
three nonverbal behaviors, head nods, gaze direction changes, and
gestures. Descriptive statistics, including reliability and standard
error of measurement for the proficiency tests were calculated for
the two tests and three nonverbal behaviors in role plays 2 and 3. A
significant difference was found for head nods in role play 4. A set
of scales for assessing nonverbal ability was constructed on the
basis of the quantitative and qualitative analysis of the nonverbal
behaviors in the role plays. Results of the study indicate that it is
possible to define degrees of nonverbal ability. (Author/JL)

ED 374 676

Assessing the Nonverbal Ability

of Foreign Language Learners

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Running Head: ASSESSING NONVERBAL ABILITY

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Abstract

This study attempts to design an instrument for assessing the nonverbal ability of foreign language learners. The subjects are educated Japanese non-native speakers of English (n=28) and educated North American native speakers of English (n=20) for baseline data. Materials used were the institutional TOEFL for linguistic proficiency, the SPEAK test for oral proficiency, and a series of four role plays for the collection of nonverbal data. Proficiency tests were administered to NNS subjects who were paired according to the results of the TOEFL. NNS and NS subjects performed the three role plays in pairs and the fourth with the researcher's NS assistants. Role plays were transcribed and coded for three nonverbal behaviors, head nods, gaze direction changes, and gestures. Descriptive statistics, including reliability and standard error of measurement for the proficiency tests, were calculated for the two tests and three nonverbal behaviors in role plays 2-3. A MANOVA was performed for the main effect Group for the three nonverbal behaviors in three role plays. A significant difference was found for head nods in role play 4. A set of scales for assessing nonverbal ability was constructed on the basis of the quantitative and qualitative analysis of the nonverbal behaviors in the role plays. The results of this study indicate that it is possible to define degrees of nonverbal ability.

Assessing the Nonverbal Ability

of Foreign Language Learners

The accurate assessment of oral proficiency in a foreign

language can be crucial for non-native speakers of English who need

favorable evaluations for general academic purposes at American

universities, for employment, to work as teaching assistants at

American universities, or for other purposes which require a

specified level of English proficiency. A variety of scales and

testing methods such as the Foreign Service Institute (FSI)

interview and its derivative ACTFL/ETS guidelines have been created

to assess oral proficiency but these have also been criticized for

their narrowness as norm-referenced tests (Bachman, 1990) or for

being no more than discrete-point tests without a basis in theory

or research (Bachman, 1988; Bachman & Savignon, 1986).

With the expansion of our framework for communicative

competence (Canale & Swain, 1980; Canale, 1983), there has been a

need for improving oral proficiency evaluation using the

communicative paradigm. Along these lines, Bachman and Palmer

developed an oral interview test (Bachman & Palmer, 1983) in an

attempt to account for more of the reliable variance in the

learner's oral proficiency than existing measures (Bachman &

Palmer, 1982) in terms of what Bachman (1988, 1990) refers to as

Communicative Language Ability (CLA).

However, even Bachman and Palmer's test relies solely on the

vocal channel for its evaluation of oral proficiency in spite of
recent calls to pay more attention to nonverbal behavior as an
integral part of speech (von Raffler-Engel, 1980; Baird, 1983) and
clear indications that nonverbal behaviors are part of the
sociolinguistic and strategic competence components of
communicative competence (Canale, 1983; Canale & Swain, 1980).

In general, language testing experts have neglected nonverbal
behavior. Bachman's (1990) major work on language testing does not
include nonverbal behavior under sociolinguistic competence and it
notes that strategic competence definitions

> include non-verbal manifestations of strategic
>
> competence, which are clearly an important part of
>
> strategic competence in communication, but which
>
> will not be dealt with in this book. (p. 100)

Problems which may be related to intercultural differences in
the use of nonverbal behaviors can, however, affect the rating of a
second language learner's oral language proficiency causing them to
be rated either higher or lower than their actual language
proficiency level (Nambiar and Goon, 1993; Neu, 1990). As Baird
(1983) puts it,

> ...the importance of nonverbal behavior in overall
>
> communication effectiveness is obvious, and the
>
> difficulties in assessing the skills involved
>
> should not blind us to their significance. (p. 33)

Nonverbal communication (NVC) is commonly considered "communication effected by means other than words" (Knapp & Hall, 1992). It has also been defined as the influencing of another person by means of facial expression, tone of voice, gaze, gestures, posture, bodily contact, spacial behavior, clothes or appearance, nonverbal vocalizations, or smell (Argyle, 1988). These nonverbal behaviors are also often interpreted through verbal signs, an indication of the importance of viewing verbal and nonverbal communication as opposite ends of a continuum with some overlap between the two (Knapp & Hall, 1988). Thus, while they may be independent at the extremes of the continuum, there are instances where they are meaningfully integrated.

It is useful, then, to consider the role of NVC in terms of this relationship with spoken language. Nonverbal vocalizations, gestures, facial expressions, and gaze are integrated with words and can "amplify and disambiguate them" (Argyle, 1988, p.106). Until as recently as ten years ago, however, there were no studies which dealt with the interactional nature of NVC (Kendon, 1984).

Gestures, for example, serve a number of roles in relation to speech, replacing it or alternating with it in a variety of ways (Kendon, 1984). Nods and gaze behavior serve to regulate interactions as nonverbal backchanneling signals or turn-taking signals. Nonverbal communication also plays a part in making up for the inability to communicate something verbally due to

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linguistic deficiencies, as in strategic competence (Canale, 1983).

While NVC can be described separately from spoken language and often has specific meaning independent of language (Ekman, 1976), it is the integration of language with nonverbal behavior that is most important for assessing language learners' proficiency. Kendon (1984) and McNeill (1985) both note that nonverbal behavior such as gestures shares the planning process with speech and thus is not really completely nonverbal. In other words, rather than being a separate system of communication, NVC is viewed here as an integral part of verbal communication.

The appropriate use of some nonverbal behaviors (in particular gestures, head nods, and gaze, which ameliorate the interaction process as backchanneling or turn-taking signals) can also be included under textual competence in Bachman's (1990) CLA model as "ways in which interlocutors organize and perform the turns in conversational discourse..." (p. 88). Edmondson (1981) also notes the importance of NVC in discourse in his observation that eye contact, for example, may be more important than speech for successful conversational development. The use of nonverbal behavior may even provide a key to the learner's proficiency level since, as Færch, Haastrup, and Phillipson (1984) point out,

> ...the activation of strategic competence presupposes
>
> an inability to make use of parts of linguistic or
>
> pragmatic competence. (p.168)

The level of use of NVC for strategic, compensatory purposes may

provide a clue to the learner's level of proficiency with greater

use indicating lower or inadequate linguistic proficiency.

Appropriate use of NVC will also include such issues as its

synchrony with the speaker's own speech and with that of the

interlocutor, which can be seen in terms of Bialystok's control

dimension (Bialystok, 1990; Bialystok & Sharwood Smith, 1985). It

is expected that lower oral proficiency learners will have poorer

synchrony or coordination due to their lower ability, affecting the

coordination of the verbal and nonverbal planning mentioned above

(Kendon, 1984; McNeill, 1985). As Færch and Kasper (1984) note,

> ...advanced learners, who are capable of planning
>
> longer units, can often predict a communicative
>
> problem well in advance and attempt to solve it
>
> beforehand, as part of the normal planning
>
> process. (p.60-61)

Any planning deficiency at lower levels then could also be

reflected in the learner's use of nonverbal behaviors.

Frequent pauses accompanied by diverted gaze by a language

learner could be interpreted as a sign of lower proficiency

when the actual content of the discourse is such that it

would not place an excessive burden on the average learner's

oral proficiency.

The testing of nonverbal ability in conjunction with

linguistic and oral proficiency should concentrate on

nonverbal features that are closely integrated with speech.

The Communication Competency Assessment Instrument (CCAI)

which was developed to assess the basic communication skills

necessary for success at an American college (reported in

Rubin, 1982) includes "use of nonverbal signs appropriate

for the situation" (p. 21) as one of 19 competencies needed

in an educational context. Developed as an alternative

method for assessing academic skills, the CCAI included

assessment of the ability to recognize and use appropriate

gestures, eye contact, and facial expressions in academic

situations.

Generally speaking, any scale for evaluating the nonverbal

benavior of speakers of English as a foreign language should also

consider gestures (including head movement) and gaze direction.

Such a scale should therefore include some of the most important

functions of NVC such as backchanneling, which is often used

differently by native English speakers and people from other

cultures (Maynard, 1987; Maynard, 1990; White, 1989). Japanese,

for example, use head movement as a nonverbal backchannel signal

more often and differently from Americans when speaking Japanese as

well as in intercultural discourse in English (Maynard, 1990).

Nonverbal behavior can also be described in terms of textual

use, which involves the appropriate or acceptable use of nonverbal

behaviors to manage turns in conversational discourse, and
strategic use, which involves compensatory behavior to make up for
deficiencies in linguistic proficiency or otherwise clarify verbal
messages. The three types of nonverbal behavior under the two
categories of textual and strategic use can be used to assess
nonverbal proficiency in conjunction with tests of oral
proficiency:

TEXTUAL USE

Gestures

- Hands are used by the speaker to emphasize speech.

- Vertical head movement (nod) is used as a backchannel signal
  by the listener to indicate attention, understanding, or
  agreement.

- Vertical head movement (nod) is used by the speaker as a
  within-turn or turn-end signal.

- Horizontal head movement (shake) is used by the listener to
  indicate disagreement or to accompany laughter.

Gaze

- Listener-directed gaze is used at the end of an utterance to
  elicit a backchannel response.

- Terminal gaze (prolonged gaze starting just before the end of
  an utterance) is used to signal the end of the utterance.

- Speaker-directed gaze is used to signal attentiveness.

Facial Expressions

- Smiles are used to indicate attention or agreement.

- Frowns are used to indicate disagreement or lack of
  understanding.

STRATEGIC USE

Gestures

- Mime (hand gestures) is used to compensate for a linguistic
  deficiency such as the lack of a necessary lexical item.

- Hand gestures are used to support spoken language to
  communicate spacial relationships and physical shapes which
  are not always easily understood using spoken language alone.

  This list of nonverbal behaviors is limited to hand gestures,
head movement (nods), gaze direction in relation to the
interlocutor, and facial expressions as behaviors which can be
easily observed and rated by a language teacher. It is not,
therefore, meant to be a complete list of nonverbal behaviors, but
rather a short list of behaviors in which differences may be
readily observed and may vary as a result of differences in the
oral proficiency level or cultural background of the learner.
Furthermore, while such a list gives the impression that these are
discrete behaviors, there is a degree of integration among the
nonverbal behaviors themselves. Nonverbal backchanneling, for
example, may include a nod at the listener accompanied by
listener-directed gaze. This list is meant to simplify and focus
the rating task by grouping behaviors according to their role in

discourse.

The purpose of this study, then, is to develop scales for assessing foreign language learners' nonverbal ability as a component of their oral proficiency. In order to develop a method for assessing nonverbal ability in a English as a foreign language, the following research questions will be addressed.

1. What nonverbal behaviors (such as gestures, gaze, and facial expressions) do native speakers (NS) and non-native speakers (NNS) use?

2. How do NNS nonverbal behaviors differ from those of NSs in similar situations?

3. If NNSs do exhibit different nonverbal behaviors from NSs, to what extent is this related to oral L2 proficiency?

4. To what extent is it possible to identify degrees of nonverbal proficiency?

Method

Subjects

The subjects in this study are 28 non-native speakers and 20 native speakers of English. The non-native speakers are educated middle-class Japanese male and female EFL learners consisting of 24 students, two faculty members, and two office staff members of a Japanese university. The native speakers are 20 educated white middle-class North American males and females who are EFL teachers or graduate students in TESOL at a Japanese branch of an American

university in Japan. They provide the baseline data for nonverbal
behaviors.

The Japanese subjects were recruited using a poster placed on
a university bulletin board and also directly from among the
researcher's students, the office staff, and the faculty in
exchange for a free administration of the TOEFL. While a random
sample would be desirable, this sample is ecologically valid since
those who are required to take oral proficiency tests generally
self-select into the programs or situations which require the
tests. While such a sample presents potential problems for
statistical analysis, the subjects do reflect the type of person
who would actually be tested in this situation.

Instruments

Instruments used in this study are the Test of English as a
Foreign Language (TOEFL) as a general English proficiency measure,
the Test of Spoken English (TSE) as a measure of oral proficiency,
and a series of role plays developed by this researcher to elicit
data for the development of nonverbal ability (NOVA) scales.

TOEFL

The Institutional Testing Program (ITP) version of the Test
of English as a Foreign Language was used to assess overall English
proficiency because of its generally high reliability of $r=.95$ and
validity. The TOEFL meets the criteria of content validity for the
university setting of this study with its academic content, and as

a test of linguistic competence it is appropriate for its construct

validity.   Its high correlations with other measures of English

proficiency (ETS, 1992) gives it a high degree of criterion-related

validity.

TSE

Oral proficiency was measured with Test Form 1 of the

Speaking Proficiency English Assessment Kit (SPEAK) version of the

Test of Spoken English (TSE), a "semidirect" measure of oral

proficiency which rates pronunciation, grammar, fluency, and

overall comprehensibility.   Interrater reliability of the TSE has

been shown to range from .87 to .92 for the four categories of

ratings (ETS, 1990).   Content validity is met since the TSE was

developed so that the items chosen would reflect performance on

similar items on the TOEFL and Foreign Service Institute (FSI) oral

proficiency interview.   Criterion-related validity is supported by

studies which have shown it to correlate well with the FSI rating

of oral proficiency at .79 (ETS, 1990).

Role Plays

Nonverbal data was elicited using four role plays performed

in English (two repeated in Japanese as explained below in

Procedures).   The first role play between two friends was used as a

warm-up and to reduce the reactivity effect of the video cameras.

Since some subjects had never performed role plays before, this

informal format was easier for them to begin with.   The following

two role plays were between unequals in an interview format (a
language school interview and a part-time job interview) since many
oral proficiency tests have an interview format in which the
interviewer is superior to the person interviewed. This NNS/NNS
format also made it possible to compare these interactions with
NS/NS interactions as well as NS/NNS interactions. In the fourth
role play, the subject was required to make a request of a teacher
for a letter of recommendation (see Appendix A for English versions
of the role plays).

The role plays were in a format similar to the simulations
used by Haastrup (1986) as part of what is called a "structured
oral interview" (p. 76) for assessing oral proficiency. In this
simulation, pupils were given an instruction card telling them that
they were applying for a job and have been called for an interview.
The cards also indicated in the pupils' native language what
information would be required. This kind of test is widely used in
Denmark to test English language students after five years of
English instruction.

The role play format has content validity as a format which
is used in oral proficiency testing (Bachman & Palmer, 1983;
Haastrup, 1986) and to elicit data for discourse analysis
(Edmondson, 1981; Kasper 1981), and it is expected to elicit the
most natural NVC that can be expected in a testing situation.

Video recordings of the subjects performing the role plays in

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English and Japanese (for Japanese subjects) were used to analyze

nonverbal behavior and to provide the basis for the development of

the scale for measuring nonverbal ability.

Procedures

The English versions of the role plays in the Appendix A were

piloted with native speakers and Japanese university students. As

a result of the initial piloting, it was decided to have the

subjects sit facing each other with a table between them and to

take the role play cards away from the subjects before beginning

because frequent referral to them inhibited the naturalness of the

conversations as well as the nonverbal behavior itself. The

contents were then revised and translated into Japanese so that the

subjects' understanding of the role plays would not depend on their

English proficiency and so that the language they used would come

from their own English ability and not from the cards. This would

also insure that the strategic use of NVC would be elicited for

unknown vocabulary. Subjects performing the pilot role plays, for

example, did not know how to say "letter of recommendation" for

role play 4. Almost all of them mimed the shape of a piece of

paper while explaining what they needed.

The Japanese translations were checked by a Japanese English

teacher and piloted with another pair of Japanese university

students. In this piloting, the subjects repeated the two

interview role plays in Japanese after performing the final English

role play individually with a native speaker. This piloting showed

that subjects could easily perform the role plays in the allotted

time and would not need another warm-up role play in Japanese

before the Japanese performances.

The institutional TOEFL was administered to the subjects

together in a classroom at their university by an experienced TOEFL

supervisor. The SPEAK Form 1 version of the TSE was administered

individually to each subject in the researcher's office according

to the instructions supplied with the test. The researcher

remained in the room to observe them and assist if there were any

problems. The recordings of these tests were rated by two

experienced native speaker EFL teachers according to the TSE

guidelines.

The subjects were paired according to their TOEFL scores to

insure that there would be as equal a linguistic burden as possible

between subjects when performing the role plays. They performed the

role plays in the researcher's office, where they also took the

TSE, seated facing each other with a small table between them.

Their performances were recorded using two video camcorders placed

unobtrusively pointed at less than 45 degree angles toward each

subject. After the subjects were seated, they were given the

Japanese versions of the role play instructions shown in Appendix

A. After signifying that they understood, they were given the role

play cards for role play 1 (warm-up role play) between two friends.

The subjects were given four minutes to perform this and subsequent role plays and did have access to the cards during the performances.

After performing role play 2 (a language school interview) and role play 3 (a part-time job interview), which were designed to elicit equivalent data from both subjects by giving each a chance to play the status-higher role of the interviewer, each subject performed role play 4 (asking for a letter of recommendation) with the researcher's native speaker assistant who was an experienced EFL teacher. Finally, the subjects replayed role plays 2 and 3 in Japanese to enable the comparison for the subsequent study of their nonverbal behavior when speaking Japanese with their performances when speaking English. As previously stated, there was no warm-up for the Japanese performances.

Of the 15 NNS pairs originally performing the role plays, one subject was not included in the analysis because he was Chinese and another was excluded because his glasses prevented a clear view of his gaze direction. Their partners were included in the 28 subjects analyzed here.

The English versions of the role plays were performed as above with the 20 North American NS subjects to obtain baseline data on nonverbal behavior by NSs in similar situations. These were performed at facilities of their university and recorded using two video camcorders placed as with the NNSs. Another American NS

assistant performed role play 4 with each of the subjects.

Additional instructions for the NS assistants are included in

Appendix A.

The role plays were then transcribed using the discourse

transcription (DT) method of Du Bois, Schuetze-Coburn, Cumming, and

Paolino (1993). Based on the review of the nonverbal behaviors

made during this transcription, nods, gaze direction, and gestures

were chosen for analysis and coded according to a simple

transcription system developed by the author and shown in Appendix

B. Only the middle three minutes of each role play were coded for

analysis to eliminate greetings and formulaic speech at the

beginning and to assure that none of the pairs finished too early.

In this system, nods were coded as nodding occasions, meaning

the performance of one or more nods as one nonverbal signal.

Nodding occasions included eight of Maynard's (1989) 10 contextual

categories of vertical head movement: as a backchannel

continuer/pause filler with or without verbalization, as a

continuer signal by the listener to the speaker, as a clause

boundary or turn-end signal occurring simultaneously with speech,

as a turn transition claimer or transition filler during pause

only, with expressions of affirmation or agreement such as "yeah"

or "uhuh," for emphasis, and as a preturn claim. Rhythmic nodding

with speech was not counted.

Gaze direction was labeled as "toward" when the subject was

perceived to change gaze direction toward the interlocutor. It was labeled as "away" when when the subject was perceived to change gaze direction away from the interlocutor. Head direction was also used as a measure of gaze direction (Duncan & Fiske, 1985). For the purpose of analysis, only the number of changes in gaze direction toward the interlocutor were counted.

Gestures labeled included miming to compensate for linguistic deficiencies and gestures to support or enhance speech by indicating direction or location, spacial relationships, counting, shapes, and size. Gesturing for emphasis was not included. A brief description of the movement and meaning of the gesture was included in parentheses after the code for gestures.

Analyses

The dependent variable in this study is nonverbal behavior. The independent variables are linguistic proficiency measured by the TOEFL and oral proficiency measured by the TSE. The control variable is nationality with only Japanese subjects used for rating nonverbal ability. Potential moderator variables are sex, age, and years of English study.

Nonverbal Data

Nonverbal data was analyzed by observing the role play videos of the NNS subjects and NS subjects and noting similarities and differences among the NNS subjects' in the performance of the three nonverbal behaviors listed and comparing NNS and NS performances in

English. The three types of nonverbal behaviors which show

potential for rating nonverbal ability were counted and a

multivariate analysis of variance (MANOVA) was carried out to

determine if there was a significant difference between the mean

number of occasions for the NNS and NS subjects' nonverbal

behaviors in each of the role plays. The results for role plays 2

and 3 were averaged for the purpose of analysis resulting in three

nonverbal scores for each type of interaction: NNS/NNS and NNS/NS

assistant for Japanese subjects and NS/NS and NS/NS assistant for

baseline data subjects. This averaging was carried out to

compensate for differences which may have been a result of the

alternating roles in role plays 2 and 3. Although gaze direction

while listening has been found to be consistent among members of

the same culture in spite of individual differences (La France &

Mayo, 1978), it may be affected by the speaker's identity (Kendon &

Cook, 1969), and the amount of listening itself is affected by

whether the higher- or the lower-status role is being played. The

role play results for the Japanese language interactions are not

included in this study.

Statistical Analysis

Data consist of interval scores from the TOEFL, the TSE

ratings of pronunciation, grammar, fluency, and overall

comprehensibility, and the counts of nonverbal behaviors in role

plays, as well as reliability coefficients for proficiency tests.

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Reliability

Reliability is an important measure for assuring the consistency of testing instruments. Theoretically, high reliability means that test takers can be expected to receive similar scores on repeated administrations of the test. Lower reliability means a greater range of difference in possible scores for such repeated administrations. Reliability for the TOEFL for these subjects was calculated using Cronbach's alpha coefficient for internal consistency. Interrater reliability for the TSE was calculated using Pearson correlation corrected with the Spearman-Brown prophecy formula used as suggested by Brown (1992) for decision reliability.

Validity

While reliability is an important quality for a good test, it is of no use without validity, which is the extent to which a test actually measures what it claims to be measuring. As previously stated, the validity of the TOEFL and TSE are well established. They appear to measure what they claim to be measuring and correlate well with other measures of the same constructs, establishing criterion-related reliability.

Nonverbal data collection is based on descriptions of nonverbal behaviors found in the literature and supported by baseline data gathered from native speaker subjects, thus demonstrating content validity.

Other statistics

Other statistics will include descriptive statistics (mean, range, standard deviation, and standard error of measurement) for the TSE ratings and TOEFL scores.

Results

Table 1 shows the descriptive statistics for the TOEFL and SPEAK test. As expected, the results of these tests are generally normally distributed and reliable measures of proficiency with the exception of the SPEAK grammar section which includes only two scores for grammar, making it a poor measure for lower proficiency subjects who may score zero on one or both parts of this section.

Insert Tables 1 and 2

and Figure 1 about here

Table 2 shows the descriptive statistics for the number of occasions of head nodding, gaze toward the interlocutor, and meaningful gestures in role plays. The distributions are generally normal, with the exception of gesture distributions which is positively skewed. At least one subject in each type of interaction performed a number of gestures that was well above the mean. Figure 1 shows the mean number of occasions graphically. There is a clear difference in the means for all behaviors in each role play with a consistently greater number of NNS nods in NNS/NNS

and NNS/NS interactions and a greater number of gaze direction

changes toward the interlocutor and gestures in NS/NS interactions.

Since the MANOVA for the Group main effect was found to be

significant, $F(6, 41) = 5.412$ for the Pillais, Hotellings, and

Wilks' lambda tests of significance at p < .0001, univariate ANOVAs

were explored for each nonverbal behavior in each type of

interaction. The effect for Group was significant ($F=27.604$;

df=1/46; p<.0001) for head nodding in role play 4, a finding

consistent with Maynard's (1987, 1990).

Discussion

Several of the findings here provide possible insights which

contribute to the preliminary drafting of a set of scales for

assessing nonverbal ability. There is, however, a significant

difference between a nonverbal rating scale and one which

concentrates on oral proficiency. In the case of oral proficiency,

the rating will concentrate on production, as in the case of the

SPEAK test used here, while leaving the measurement of receptive

skills to written tests such as the TOEFL. Nonverbal

communication, on the other hand, is unique in that it covers both

reception and production in a given interaction and it is not

always accompanied by speech.

As for what behaviors NNSs and NSs use in similar situations,

this study found through quantitative and qualitative analysis that

vertical head nodding, gaze direction, and hand gestures would be

the most revealing behaviors because they are easy to observe and

interpret and because they occur frequently even in a limited

three-minute period for both NS and NNS interactions.

In addition, NNS behaviors are different from those of NS

subjects in this study. The number of NNS nods, as to be

expected, were significantly greater in NNS/NS interactions and

slightly greater even for NNS/NNS interaction, though not

significant. What makes this a very ratable behavior is not only

the frequency but also the nature of the occasions in which they

occur. This culturally-based difference can be seen in differences

in backchanneling (Maynard, 1987, 1989, 1990: White, 1989), as

follows:

(1)   (Role Play 4 - Request for Recommendation, NS4A)[1]

       Professor: How long will it take you?

       Student: um,
                   A
                   ..I figure,

                   two years.
                       T   N
                   ...

       Professor: Probably.

(2)   (Role Play 4 - Request for Recommendation, NNS13A)

       Professor: these are all important things.

       Student: Uhuh.
                   N
       Professor: uh,

                   Maybe you could write down just,

your basic,
   A
uh,

your schooling,
        N
and,

(3)   (Role Play 4 - Request for Recommendation, NNS12B)

   Professor: when do you want me,

            to write the letter.
                          A
            ...next week,
             T   N
            or,

            next [month]

   Student: [ah],

            Yeah.

            um,
            A
            ...Next month,
                 T   N
            [and],
              A

   Professor: [By next] month.

The NS in example (1) had approximately the average number

of head nods for baseline data subjects. This subject had no

examples of backchannel head nodding. Most nodding was for

emphasis or as a turn-end signal, as in this example. The NNS

subject in example (2) was a high oral proficiency subject with a

less than the average number of head nods. This subject had

examples of turn-end nods, and nods with expressions of affirmation

or agreement such as "yeah" or "uhuh," which occur frequently in NNS data. The NNS subject in example (3) was a low oral proficiency subject who had slightly more than the average amount of head nodding for NNS subjects. There was frequent nodding as a backchannel/continuer signal without verbalization while listening as well as with affirmation or agreement. Of course, the oral data itself did differ between proficient and less proficient subjects. NS and higher oral proficiency subjects spent less time listening and more time talking in role play 4 than lower oral proficiency NNSs because they understood what the professor was asking them.

As for gaze direction, while there are similarities between NS and NNS subjects for frequency of changes and certain types of usage, there are greater differences between higher and lower oral proficiency subjects. Examples (1) and (3) above illustrate how both NS and NNS speakers precede the answer to a question with a question with a filled pause, "um," accompanied by a gaze change away. Usually the next gaze change toward comes at or near the beginning of the answer. Lower oral proficiency subjects often delay their gaze change toward the interlocutor, as follows:

(4)   (Role Play 4 - Request for Recommendation, NNS15B)

      Professor: Do you have any hobbies.

                 Did you belong to a club.
                                      A

      Student: I,

                 I belong to,

```
                    ...table tennis club.
                         T            N
Professor:    Uhuh.
                   N
              Mhm.
```

In America they call table tennis ping pong.

This lower proficiency subject looks away at the end of the rephrased question by the researcher's NS assistant and does not change direction toward the interlocutor until the end of the answer. This could be related to control variability (Bialystok & Sharwood Smith, 1985), affecting the synchrony of gaze direction and speech due to the learner's uncertainty over what form of language is appropriate. Gaze away is usually a sign of thinking, therefore prolonged gaze away may be sign of the learner's lower proficiency, and frequent and long occasions of gaze away could be rated as a sign of "lower" nonverbal ability.

Differences between NSs and NNSs for hand gesturing to enhance speech or to compensate for linguistic deficiency cannot be interpreted only on the basis of simple counting and comparisons of means. Content and success are also important factors.

NSs did not necessarily use hand gestures. Two out of 20 baseline data subjects did not gesture in any of the role plays as compared to three out of 28 NNS subjects. The two major differences between NSs and NNSs, aside from compensatory usage by NSs, was the variety and type of gestures used. Frequency itself is not an indicator. One NNS used hand gestures pointing at his

own chest nine times to indicate "I," "my," or "me" out of a total
of 11 hand gesturing occasions. The other gestures were pointing
at the NS assistant for "you" and holding up four fingers while
saying "four years." While NSs sometimes pointed at their chest
for "I," the NNSs overuse could be considered inappropriate by
native speaker norms. Interestingly, although it was expected that
some of the NNSs would point at their noses for "me" as is often
encountered in Japan, none of these subjects did.

One lower proficiency subject used hand gestures 18 times,
four times for "me" and twice for "you." The rest of the gestures
were for direction or miming the shape of a "letter of
recommendation" or the act of writing. It is interesting that the
researcher had earlier thought that this subject was more
proficient, until very low scores on the TOEFL and SPEAK test
suggested otherwise. The subject's use of gaze direction and head
nodding also seemed to be more appropriate by native speaker
standards.

Success or failure at an attempt to use mime as a
compensatory strategy can also be seen as an indicator of the
learner's level of nonverbal ability, as follows:

(5)   (Role Play 3 - Convenience Store, NNS6A)

       Student: um,

                   ...What situation.

```
        Manager:     um,
                     A
                     ...(6)<L2 nan to iu L2> ((What do you say?))
                        G(mimes carrying something with both hands)
        Student:     Ca- carry.

        Manager:     Carry.
                     T   N
```

During a long pause, the subject playing the manager cannot think

of a lexical item. Before reverting to code switching, she begins

to mime the word that she cannot think of. The subject accepts the

interlocutor's interpretation, indicating that the gesture for

compensatory purposes was successful. If the interlocutor had not

supplied an acceptable word, this example would be considered a

failure.

Thus, while the performance of some kinds of nonverbal

behavior are related to language proficiency, there are exceptions

to this, as Neu (1990) has pointed out. This supports the idea

that nonverbal ability can be treated as a separate construct from

linguistic proficiency. For testing purposes, nonverbal ability

can be integrated into Bachman's (1990) CLA model as shown in

Figure 2.

Insert Figure 2 about here

As a result of the quantitative and qualitative analysis

carried out in this study, a set of scales for assessing nonverbal

ability can be constructed as shown in Table 3.

Insert Table 3 about here

Under textual ability, looking away and infrequent nodding are associated with lower textual ability for frequency, and backchanneling frequently and at every pause such as Japanese speakers do would be associated with lower textual appropriateness. Under strategic ability, compensatory usage will be rated according to need to use and successful performance, while the rating for appropriateness would depend on how often gestures are used and the content of the gesturing. The subject who gestured for "me" frequently and occasionally pointed at his or her nose would be rated lower for appropriateness.

Conclusion

This study has investigated the possibility of assessing the nonverbal ability of foreign language learners. It has demonstrated that:

1. Vertical head nods, gaze direction changes, and gestures are nonverbal behaviors that are used meaningfully by both NSs and NNSs in simi ar situations.

2. These nonverbal behaviors differ in frequency, in their synchrony with speech, and in content between NSs and NNSs.

3. The use of these nonverbal behaviors by NNSs can differ

according to oral L2 proficiency.

4. Degrees of nonverbal ability can be identified and applied to a meaningful rating system.

As a pilot study, there are limitations to the scales outlined here. Only three behaviors are applied here. This study did not include horizontal head movement (shake), facial expression, posture, or interpersonal distance. The three behaviors chosen, however, can be easily observed by raters. These scales are meant for research purposes, therefore only one cultural group was used as a control for data collection. Much work remains to be done before this can be applied outside of research, especially in the area of norms.

The next step is to test the test. By applying these scales to the NS/NNS data in this study using independent raters, it will be possible to answer the questions of whether the scales are reliable and whether nonverbal ability is an independent construct from linguistic and oral L2 proficiency.

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Appendix A — English Versions of Role Plays

Role Play Instructions

You will be asked to perform a number of role plays.
Read each situation and imagine that you are really the
person in the role play. Specific details are not
given, but try to speak in as much as detail as
possible.

Role Play 1 (Warm-up)

Role A: You are at the school cafeteria talking to a friend who
is very good at Japanese. You want to borrow some
books from a friend so that you can study Japanese.

Role B: You are at the school cafeteria talking to a friend who
wants to study Japanese. You are very good at Japanese
so your friend wants to borrow some books from you to
study. Offer your friend some books and try to give
some advice for studying Japanese.

Role Play 2

Role A: You are a student applying to enter an English language
school. You are being interviewed by one of the
teachers. Answer the teacher's questions about
yourself, your interests, and your reasons for studying
English in as much detail as possible.

Role B: You are a teacher at an English language school. You
must interview an applicant to evaluate his speaking

ability.   First, ask the applicant basic background

questions (name, birthplace, etc.). Then, ask about

interests, language learning experience, and reasons

for studying English. Ask in as much detail as

possible.

Role Play 3

Role A: You are the manager of a convenience store. You

must interview a student for a part-time job.

First, ask the applicant basic background

questions (name, birthplace, etc.). Then, ask

about interests, working experience, and reasons

for wanting to work at your store. Ask in as

much detail as possible.

Role B: You are student applying for a part-time job at a

convenience store. You are being interviewed by

the manager of the store. Answer the manager's

questions about yourself, your interests, and

your reasons for wanting a job at the store.

Answer in as much detail as possible

(Role Play 4 is performed individually by both subjects with a

native speaker)

Role Play 4 — Non-native Speaker

Role A/B: You want to apply to an American university's graduate

school to study in your major. You need a letter of

recommendation from your teacher. You go to your teacher's office to ask him for one. Be ready to explain why you need the letter, what information it should contain, when you need it, and what your teacher should do with it in as much detail as possible.

Role Play 4 - Native Speaker

Role B/A: You are a professor at a Japanese university. A student comes to you to ask for a letter of recommendation so that he can study at an American University. Ask the student why he wants to study abroad, what information the letter should contain, when he needs it, and where he should send it. Try to get the student to explain in as much detail as possible.

Instructions for NS Assistant

1. Greet the student: "Hi, (name), what can I do for you?"

2. Remember. You do not know what the student wants beforehand.

3. Help the student speak, but do not put words in his/her mouth. The burden to communicate should be on the student as long as pauses are not too long. Be patient.

4. If the student does not give instructions about the letter of recommendation, ask questions about why he/she wants to study abroad, the information to be contained in the letter, when it is needed, where to send it, and so on.

5. You will have four minutes for the role play, but do not
worry about the time. If there is time, close the
conversation with small talk and a word of "good luck."

Appendix B - Transcription Symbols

Discourse Transcription (Du Bois, et. al., 1993)

Units

Intonation unit	{carriage return}
Truncated intonation unit	--
Word	{space}
Truncated word	-
Speaker identity/ turn start	:
Speech overlap	[

Transitional Continuity

Final	.
Continuing	,
Appeal	?

Pause

Long	...(N)
Medium	...
Short	..
Latching	(0)

Vocal Noises

Vocal noises	( )
	THROAT, GULP, SWALLOW, SNIFF, COUGH, TSK (tongue click)
Laughter	@

Transcribers Perspective

Researcher's comment	(( ))
Uncertain hearing	<X X>
Indecipherable syllable	X

Specialized notation

Nontranscription line	$

Code switching	<L2 L2>
Marginal words	
hesitation	uh, unh, um, er
backchannel	hm, m, huh, hunh
affirmation (bc)	mhm, unhhunh, uhuh, oh, ah
negative bc	unh-unh

Nonverbal Transcription

Role identity	a)
	b) *(subject B: symbols are in italics)*

Nonverbal notation

Hand gestures:	G ("brief description")
Head Movement	
Head nods:	N
Gaze	
Gaze in direction	
of interlocutor	T
Gaze away from	
interlocutor	A

Author Notes

Footnotes

[1]   All examples are preceded by the number of the example, the
title of the role play, and the subject number preceded by NS or
NNS. Coding is made at the approximate onset of each occasion.
Duration is not included. Nonverbal notes apply to the subjects
for listening and speaking and are not included for the NS
assistant's behavior. See Appendix B for nonverbal transcription
symbols.

Table 1 Descriptive statistics for proficiency tests

	TOEFL				SPEAK			
	Pt. 1	Pt. 2	Pt. 3	Total	Pron.	Grammar	Fluency	Comprehensibility
N = 28								
Mean	41.07	39.46	40.43	403.21	1.15	1.01	1.07	111.21
SD	4.77	8.07	7.52	59.66	.49	.65	.44	46.30
Low-high	32-52	26-57	28-60	310-553	0.3-2.2	0-2.3	0.3-2.15	30.5-210
r_n*	--	--	--	.93				
r_{xx}					.94	.97	.94	.98
SEM	--	--	--	15.78	.12	.11	.11	6.55

* Corrected with the Spearman-Brown prophecy formula

Table 2 Descriptive statistics for nonverbal behaviors in role plays

	Nods				Gaze				Gestures			
Role Play:	2	3	3/4	4	2	3	3/4	4	2	3	3/4	4
Native Speakers (N = 20)												
Mean	20.550	21.40	20.975	15.200	21.45	21.750	21.600	24.800	3.550	3.200	3.375	5.600
SD	6.461	11.04	6.290	6.202	12.65	9.767	8.433	7.527	3.735	3.458	2.687	4.587
Low-high	8-35	7-43	7.5-33	6-29	4-51	6-44	8-39	14-48	0-13	0-13	0-8	0-16
Range	28	37	26.5	24	48	39	32	35	14	14	8	17
Nonnative Speakers (N = 28)												
Mean	21.750	23.390	22.571	30.89	17.710	18.500	18.107	23.320	2.107	2.714	2.411	4.179
SD	8.374	9.645	8.525	11.98	6.943	5.137	5.547	6.403	2.87	2.788	2.560	4.660
Low-High	4-34	5-38	7.5-36	14-61	7-37	10-30	8 5-33.5	14-37	0-9	0-10	0-9.5	0-18
Range	31	34	28.5	48	31	21	26	25	10	11	10.5	19

:
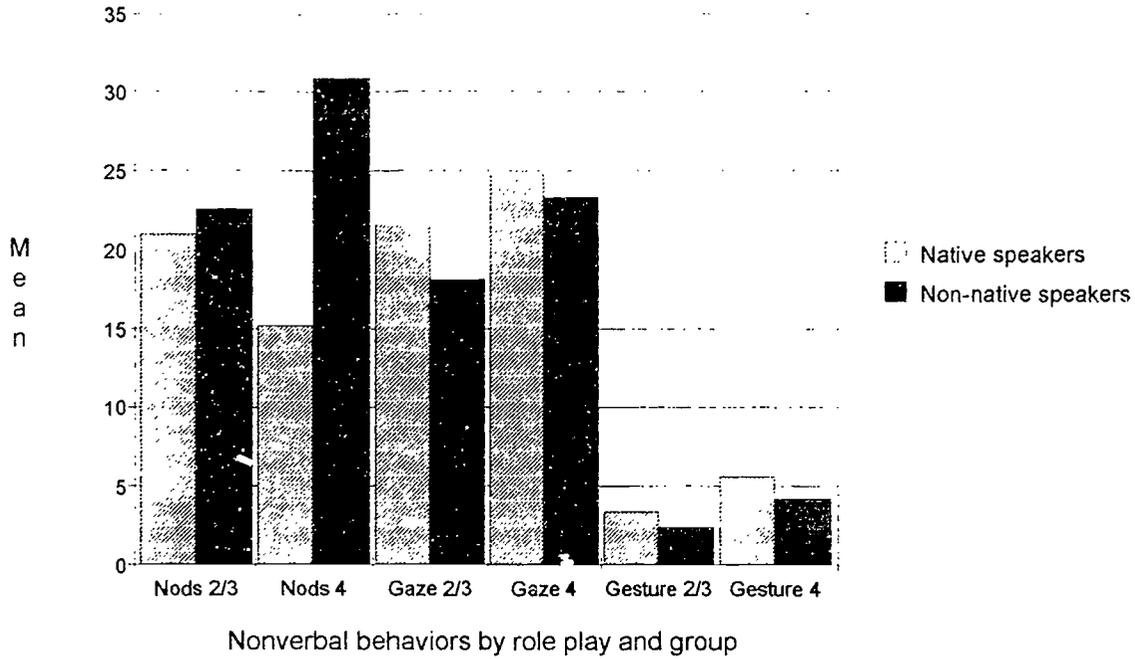
Figure 1   Nonverbal behaviors in role plays

Communicative Language Ability

A   Language competencies

    1 Grammatical competence

    2 Textual competence ───────── Textual ability

    3 Illocutionary competence

    4 Sociolinguistic competence

B Strategic competence ───────── Strategic ability

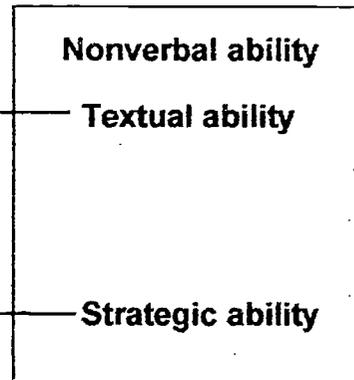C Psychophysiological mechanisms

Nonverbal ability

Figure 2   Communicative Language Ability (CLA) (Bachman,
1990) with a nonverbal component

Table 3   Scales of nonverbal ability (NOVA)

Textual Ability

Rating		Rating	
	Frequency		**Appropriateness**
0	Extremely limited use of head nods and infrequent changes in gaze direction toward partner in conversation	0	Totally inappropriate use of head nods and gaze direction by native speaker norms
1	Frequent use of head nods and changes in gaze direction that are not acceptable by native speaker norms	1	Frequent inappropriate use of head nods and changes in gaze direction
2	Frequency of head nods and changes in gaze direction approaches native speaker norms	2	Rare inappropriate use of head nods and changes in gaze direction
3	Frequency of head nods and changes in gaze direction acceptable by native speaker norms	3	Use of head nods and changes in gaze direction acceptable by native speaker norms

(Table Continues)

Strategic Ability

Rating	Compensatory Usage	Rating	Appropriateness
0	No evidence of hand gestures to solve considerable linguistic problems	0	Never uses hand gestures to support or enhance meaning
1	Limited use of hand gestures to solve linguistic problems with occasionally unsuccessful results	1	Occasionally uses hand gestures to support or enhance meaning, often inappropriately by native speaker norms
2	Hand gestures successfully used to solve linguistic problems	2	Use of hand gestures approaches native speaker norms
3	Rare linguistic problems requiring the use of hand gestures for compensation	3	Use of hand gestures appropriate by native speaker norms

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