

Developmental perception of polite & impolite non-verbal behaviours in Japanese

Introduction

Speakers engaged in face-to-face interactions are *involved* in their speech: they express themselves not only through words but also through their syntactic and grammatical choices, through their gestures and facial expressions and through the changes of their voice and prosody [1]. Emotions can be seen as the most typical and ubiquitous example of involvement in language: they imbue discourse interactions. Emotions are a complex phenomenon, ever changing, subjected to various cognitive evaluations and controls. They are separated according to core affects and prototypical emotional episodes [5]; the former being the “most elementary consciously accessible affective feelings” always present and varying, based on several dimensions; and the latter being described as the rare categorical “full-blown emotions” that follow a prescribed set of events, evaluations and behavioural reactions – and that are described in language by words. These prototypical emotions correspond to what is generally meant by “emotions”. Their descriptions and the labels used to name them can be refined hierarchically. As constructed cognitive objects, these emotions can be described by scripts, which can account for cross-cultural similarities and differences [11, 4]. [10] describes the increasing number of emotional labels actively used by children with age, growing from one emotional label at the first year to about six at 4 years old. Similarly for classifying emotions [12], an increasingly complex set of affect types appears with development stages that are less and less linked with physiological states. They name “secondary cognitive emotions” (pride, shame) the highest level of affective states, which is built on cultural norms and on the experience of social relations – and are therefore linked to cultures and languages. Such affects, as well as some higher levels expressive behaviour that are beyond the scope of “affects” (politeness, irony), are described by [9] as *attitudinal* expressions. Speakers use these attitudes during interactions, imbedded into complex communicative strategies to achieve their goals. To be effective, attitudes have to cope with linguistic and social norms: to follow the codes set up by languages and cultures.

This paper uses a corpus containing a set of prosodic attitudes, encoded by Japanese culture and language to express politeness and impoliteness. Three expressions of politeness are used: politeness of courtesy, sincerity-politeness and *kyoshuku*¹. A neutral declarative expression and a impolite attitude of arrogance complete the set of expressions. Definitions for these attitudes can be found in [7]. The question addressed here is twofold: first can young Japanese children perceive the expressive differences conveyed by these 5 attitudes in a similar way that native adults do? And second, can a pair comparison paradigm be used with young children still unfamiliar with the written language?

Methodology

A similar goal was pursued by [8], measuring the ability of children (already able to read the instructions) to rate the degree of politeness of the same stimuli, on a polite to impolite scale. Results showed that the arrogant attitude falls on one side of the scale, while the politeness and sincerity-politeness expressions are on the other side, with declaration and *kyoshuku* near the middle. This finding shows that *kyoshuku* is a complex expression, which is not described on a simple polite/impolite scale, but rather expresses more complex relationships.

¹ There is no lexical entry to translate *kyoshuku* in English: [6] described it as “a mixture of suffering ashamedness and embarrassment, (which) comes from the speaker’s consciousness of the fact that his/her utterance of request imposes a burden to the hearer” (p. 34).

To bypass the limitations raised by the use of a single dimension, a pair comparison paradigm was used, based on methodology described in [2, 3], developed to measure the perception of semantic structures across cultures, which allow a multidimensional representation of perceptual distances between stimuli, organized by groups of subjects. Details of the processing methods used to compare groups of subjects cannot be detailed here due to space restrictions but may be found in [2, 3]. One further advantage of this paradigm lies in the fact that a pair comparison paradigm doesn't require subjects to make an explicit judgement of the "degree of politeness", perhaps an overly complex requirement for young children, but just to judge a degree of similarity between two items.

The stimuli presented to subjects consist of audio-visual performance of the same Japanese sentence performed with the five above-mentioned attitudes. Japanese subjects had to judge the similarity of all pairs of stimuli, either in audio-only, video-only and audio-video conditions. Four groups of subjects of different ages were tested:

- 40 adults (28 females, 12 males; mean age: 21.6)
- 19 4th school grade children (9 females, 10 males; age: 9.5)
- 19 2nd grade children (13 females, 6 males; age: 7.4)
- 18 1st grade children (11 females, 7 males; age: 6.1)

Results

The analysis of the perceptual spaces obtained from subjects in each age group, across attitudes and modalities allow a measurement of the evolution of each attitude with age. Figure 1 represents a summary of the shape similarities for the distributions of the five attitudes in the measured perceptual space, according to age groups and to the three modalities. A clear progression with age can be observed from the 1st grade group towards the adult's reference; similarly, a clear perceptual difference between each modality is observed, with audio-visual in the middle of audio and visual modalities.

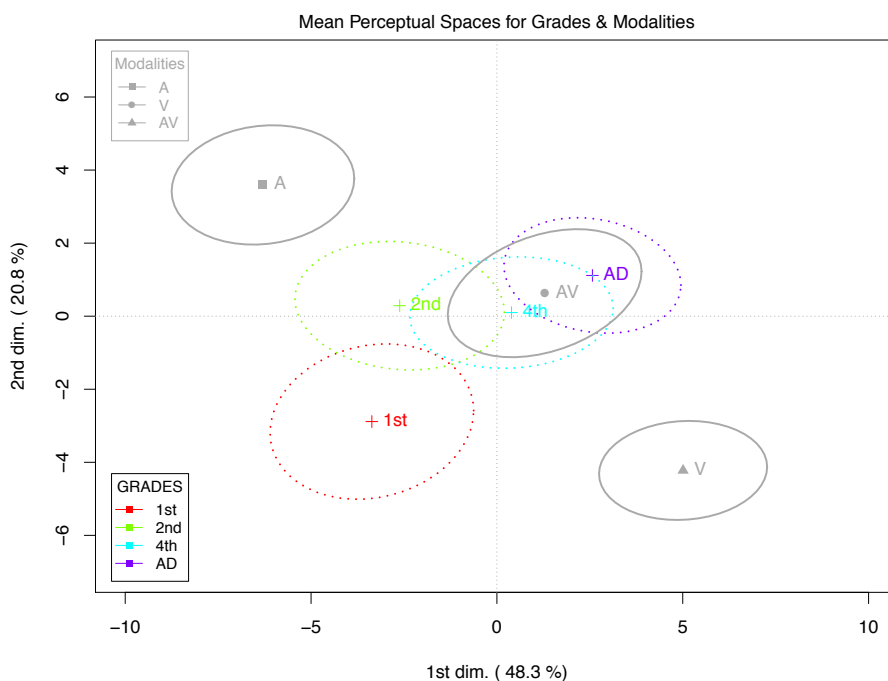


Figure 1: Coloured points represent the mean placement for the four age groups, all modalities averaged; grey points represent the mean placement for the three modalities (averaged for age). Ellipses correspond to the 97.5% confidence limit from the means.

The coherence inside each group gives a measure of the proportion of shared knowledge [2] at each age: adults share 71% of common knowledge, 4th grade children 63%, 2nd grade 58%, and 1st grade 55%. This clear increase with age indicates the growing knowledge of the cultural norms underlying the attitudinal expressions.

These results, as well as the detailed analysis, clearly support the efficiency of the proposed paradigm to investigate attitudinal expressions across modalities and age groups.

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