Emotional prosody perception in Italian as a second language

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https://doi.org/10.36505/ExLing-2019/10/0040/000402

Abstract

The present research aims at investigating the recognition and perception of emotional prosody in L2. 10 Russian learners of Italian and 33 native speakers of Italian (acting as a control group) were involved in a perception experiment. The test consisted of 8 stimuli, 4 in Italian and 4 in Russian, conveying different emotions. Participants were asked to listen to the stimulus, to recognize the emotion and to judge the intensity of the emotion on a scale from 0 to 3. Results showed that both groups were able to identify stimuli in both languages at above chance level, nevertheless they decoded the stimuli expressed in their L1 with higher accuracy. Furthermore, the two groups rated the intensity of Italian stimuli in a similar way, but differed significantly in judging the intensity of Russian stimuli.

Key words: Second Language Acquisition, emotional prosody perception, Italian L2

Introduction

Some studies provide evidence that L2 learners from "distant" cultures experience increasing difficulties in "identifying emotion in the target language and in judging the intensity of that emotion than do fellow learners from "closer" cultures with similar levels of proficiency" (Dewaele 2005: 376; De Marco, Sorianello, Paone 2017). Other studies suggest that L2 skills may sometimes interfere with emotion recognition from speech prosody (Bhatara, Laukka, Boll-Avetisyan, Granjon, Elfenbein, Bänziger 2016).

In light of the above, the present research aims at investigating the perception of emotional prosody by learners of Italian as a second language coming from a "distant" culture. We will address the following research questions: first, are learners of Italian with an upper-intermediate level of proficiency (B2) able to recognize emotional utterances in the L2 and to rate the emotional intensity as well as native speakers do? Second, is there an in-group advantage effect (Elfenbein, Ambady 2002), i.e. is participants' decoding ability more accurate when emotions are expressed in their L1? To give an answer to these questions native speakers of Italian and L2 Italian learners coming from Russia were involved in a perception experiment, to test their ability to decode emotions expressed in both languages (Italian and Russian).

Method

Participants

10 learners of Italian (6 F and 4 M, mean age= 25, age-range = 22-30) coming from Russia with B2 level of proficiency (assessed by a test), living in Italy since 18 months and attending Italian courses at the University of Calabria, and 33 native speakers of Italian (23 F and 10 M, mean age= 33, age-range 16-35), coming from South Italy, with no competence in Russian, completed the task.

Stimuli

Participants were presented with utterances spoken in Italian and Russian produced with 3 different emotions (*cold anger, sadness, joy*) and without any emotional colouring (*neutral speech*). The standard sentences were "Lo hanno portato" ("they brought it") in Italian, and "Это Привезли" in Russian (collected and validated in previous research, see Paone 2017). The test consisted of 8 stimuli (4 in each language), conveying the three emotions and *neutral speech*.

Procedure

Stimuli were presented using an online survey tool. Participants were asked to listen to the stimulus and to recognize the emotion expressed choosing from nine options (*anger, disgust, joy, fear, surprise, sadness, neutral, other*) and to judge the intensity of that emotion on a scale from 0 to 3. Learners were given instructions both in Italian and in Russian. The response options included different basic emotions and the option "other" in order to increase the reliability of the test, so the chances of random recognition were low, given the large number of possible answers. The emotional utterances were played randomly; no time limit was imposed.

Data from the perception experiment was analysed, taking into account correct identifications of stimuli in Italian and in Russian for each group. Binomial tests were performed for each stimulus type to determine whether they were correctly identified more often than chance. Repeated measures ANOVA and post-hoc tests were carried out in order to verify whether the two groups of participants differed in recognition accuracy and in the stimulus intensity evaluation.

Results

In a multiple-choice test with 7 options, the probability of chance guessing is around 14,3%. From the results of the binomial tests, it appears that the global percentages of correct identifications for each emotion scored by both groups are above chance level ($p<0,05$). This means that the three emotions and the neutral speech were correctly discriminated irrespective of the language in which the utterance was spoken. This result is in line with previous studies that

claimed the ability of human beings to decode emotional speech even in a language other than their own.

Figure 1 shows the percentages of correct responses scored by both groups with regard to the stimuli in Italian and in Russian. As regards stimuli in Italian (histogram on the left), Russian learners were able to identify *sadness*, *anger* and *neutral speech* with the same accuracy as native speakers. Only the decoding of *joy* raised more difficulties, indeed the learners scored a lower percentage than native speakers' (46,6% vs. 70,7%), moreover the confusion matrix revealed that the major confusions occurred with *neutral speech* and with *surprise* in 16,6% of cases. The ANOVA results confirmed that there were no significant differences between the groups, but the stimulus types (*sadness*, *joy*, etc.) had an effect on the recognition scores. Post-hoc tests confirmed that NSs of Italian were better at discriminating the utterance of *joy* than Italian learners ($p<0,001$).

As regards stimuli in Russian (Figure 1, histogram on the right), Italians' accuracy level was lower than learners'. Indeed, significant differences were found in the case of *joy*, *sadness* and *neutral speech* ($p<0,001$), which were decoded with higher accuracy by Russian learners. The confusion matrix showed that Italians confused *sadness* with *neutral speech* in 16,1% of cases, and with *surprise* in 12,1%. *Joy* was confused with *surprise* (28,2%) and *fear* (21,2%).

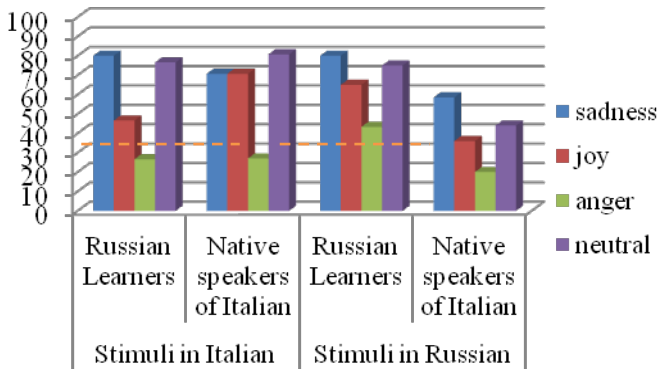

Figure 1. Percentages of correct responses scored by both groups with regard to the stimuli spoken in Italian (on the left) and in Russian (on the right). The dotted line represents the level of chance guessing (14,3%).

To establish the differences between the two groups in terms of emotional intensity, we took into account correct responses, excluding therefore erroneous recognition scores. A repeated measures ANOVA was carried out in order to determine the effects of the stimulus language (Italian- Russian) and stimulus type (*cold anger, joy, sadness, neutral speech*) on the intensity scores given by both groups. Results revealed that both variables had an effect. Post-hoc tests

results showed that the two groups rated the Italian stimuli in a similar way ($p>0,05$), but differed significantly in judging the intensity of Russian stimuli ($p<0,05$). Indeed, native speakers of Italian perceived them as less intense than Russian learners did, especially in the case of *joy*.

Conclusions

Russian learners and native speakers of Italian were able to identify emotions in Italian with similar levels of accuracy (except for *joy*), but Russian learners performed better in their L1, suggesting an in-group advantage effect. These results also suggest that learners' L2 knowledge might contribute to the ability to infer emotions from L2 speech prosody and to judge the intensity as well as native speakers do. Indeed, Italian natives scored lower percentages of correct identifications in Russian, a language they did not know at all, and judged the intensity differently from the learners. Further investigations are needed to clarify this point. These results might contribute to shed light on emotional prosody recognition and perception in a second language.

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