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Speaking Hebrew with an accent: Empathic capacity or other nonpersonal factors

Raphiq Ibrahim^{1,2}, Zohar Eviatar¹, Mark Leikin¹

¹ University of Haifa

² Rambam Medical Center, Haifa

Abstract

The study examines a hypothesis that the degree of accent in L2 is related to a measure of ego permeability. Native Hebrew speakers, native Russian-speaking immigrants, and Arabic-speaking Israeli natives participated. All were students at the University of Haifa, where the language of instruction is Hebrew. The participants were recorded producing two speech segments and the recorded segments of speech were played to a group of 20 native Hebrew speakers, who rated the degree of accent in each segment on a scale from 1 (no accent) to 5 (heavy accent). These participants also completed the Interpersonal Reactivity Index (IRI) developed by Davis (1980), which has been translated into Hebrew and validated (Even, 1993). The scale yields a single numerical score that is a reflection of empathic capacity. We looked at the correlations between the “heaviness” of the accent of L2 speakers and a measure of empathy. These revealed strong correlations between degree of accent and empathy scores in the Russian-speaking group, but not in the Arabic-speaking group. The sociolinguistic implications of these findings are discussed.

Key words

accent

Arabic

bilingualism

empathy

Hebrew

Russian

speech production

Native speakers can identify different groups of non-natives on the basis of pronunciation, but are not able to do so reliably on the basis of only written or syntactic evidence (Ioup, 1984). Some researchers assumed that bilinguals who have acquired L2 after puberty tend to speak with an accent because the phonological system of their native language (L1) constrains the production of L2 sounds (Bialystok, 1997; Flege, Yeni-Komshian, & Liu, 1999; Hurford, 1991; Long, 1990). Structural differences between the phonological systems of two languages also seem to be a relevant factor and affect the degree of foreign accent (Magen, 1998; Piske, MacKay, & Flege, 2001; Van Wijngaarden, 2001). More interestingly, recent research has suggested that there are differences in the phonetic perception of the speech signal between native and non-native speakers (for reviews see Best, 1994; Flege et al., 1999). Evidence for such a process comes from a case study we described (Eviatar, Leikin, & Ibrahim, 1999) in which a Russian-Hebrew bilingual woman with aphasia

Address for correspondence

Dr Raphiq Ibrahim, Learning Disabilities Department, Haifa University, Haifa 31905 Israel;
fax: 972 04 8240911; e-mail: <raphiq@psy.haifa.ac.il>

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showed a dissociation between her ability to perceive her L2 (learned in adulthood) when it was spoken by a native speaker versus when it was spoken by a speaker with an accent like her own. We interpreted this as supporting the hypothesis that late second language learners perceive L2 sounds via the phonological categories of their native language, and that this assimilation procedure can be differentially damaged, such that L2 speech that conforms to L1 phonology is better perceived than native-like L2 speech.

Strange (1995) proposed that the more distant an L2 sound (phonetic segment) is from the closest L1 speech sound, the more learnable the L2 sound will be. This hypothesis, the “Speech Learning Model,” was supported in a recent longitudinal study on Japanese that examined whether native Japanese speakers have more success acquiring English /r/ than /l/ (Aoyama, Flege, Guion, Akahane-Yamada, & Yamada, 2004). These authors suggested that the degree of perceived phonetic dissimilarity influences L2 learners’ success in acquiring L2 phonetic segments. However, the adaptation of the phonetic categories of L2 seems to be a necessary component of second language acquisition, and, consequently, bilinguals who attain a high level of proficiency in their L2 are able to exploit the phonetic categories of that language in speech production and perception (Goetry & Kolinsky, 2000). Cross-language speech perception research has shown that listeners’ abilities to discriminate non-native contrasts are constrained by the phonemic distinctions employed in their native language (McAllister, Flege, & Piske, 2002).

These findings are compatible with the critical period hypothesis for phonological aspects of second language acquisition (Brown, 1980). Brown claimed that “a critical period may be the result of the lateralization process, or plasticity, where the maturing brain assigns different functions to the right or left side” (Brown, 1980, p.55; see also Lenneberg, 1967). Other researchers stressed two principal factors: the cognitive (Rosansky, 1975) and the sociopsychological (affective) (Schumann, 1976). Schumann highlighted the capacity of the environment in shaping second language acquisition and hypothesized that such explanations are limited, and that sociocultural and sociopsychological factors more successfully define a critical period (Schumann, 1976). The affective domain includes many factors: empathy, self-esteem, motivation, inhibition, imitation, and attitudes.

In this work we focus on the affective view, focusing on “ego permeability” (as detailed below) by examining the relationship between phonological production of a second language (L2) (degree of accent) that has been acquired after puberty and empathic capacity in two groups of bilinguals.

1 Extralinguistic considerations

The question of what motivates individuals to persist and achieve success in second language and foreign language learning has been studied extensively over the last 40 years. Three sociopsychological models of language acquisition attempt to account for the differences in the quality in non-native speakers’ acquisition of an L2 by incorporating and emphasizing the aforementioned factors and others to different degrees (see Piske et al., 2001, for critical review). The first model in second language learning was suggested by Alexander Guiora and called the “language ego” model (Guiora, 1990,

1994; Guiora, Brannon, & Dull, 1972). Guiora proposed this term to account for the identity a person develops in reference to the language he or she speaks. According to his model, the native language of an individual is part of his or her identity. Adults can bear to have only one identity, and therefore they must develop a psychological barrier between their own language ego and other possible identities – ego boundaries. As a result, the bilingual speaker has only one completely real native-like accent (expression of speaker's language identity), usually in L1, and a non-native accent in L2.

Ethnic identity of both majority and minority groups has been studied in both linguistic and nonlinguistic contexts. For example, Bresnahan, Ohashi, Nebashi, Liu, and Shearman (2002) examined the attitudes of native speakers toward accented English and showed that these attitudes were related to the strength of the ethnic identity of the judges. In Israel, the dichotomy between ethnicity and citizenship was not easily settled. The attitudes toward the majority of both immigrant groups and native ethnic minorities with a strong ethnic identity opposed to civic identity have been examined (Mesch, 2003; Suleiman, 2002). The present study examines the characteristics of accented speech in these groups.

The "Acculturation Model" (Schumann, 1976) stresses the significance of the learner's psychological and social distance from the target culture and relates several criteria to these two aspects. Psychological distance is defined by the learner's motivation, self-image, and ability to deal with a change of culture. Social distance concerns the learner's perception of the general relationship between the L1 and the L2 culture in terms of status and attitudes, as well as the learner's personal attitude toward the target language. Schumann's acculturation model of second language acquisition contends that learners will succeed only to the extent they acculturate into the group that speaks the target language natively. Schumann separates instruction from acculturation, and claims that instruction is a minor variable in the second language acquisition process compared to acculturation.

The most comprehensive sociopsychological model of L2 acquisition is Brown's "Optimal Distance Model" (Brown, 1980). This model incorporates and extends the previous models and aims to define a socioculturally determined critical period for successful second language acquisition. Brown examined second language acquisition in two populations: immigrants acquiring English (the language of the majority or dominant culture) and foreign students learning the same language. According to this model, the framework of the sociocultural critical period retains a component of age-dependence because the movement from concrete to formal operational thought is crucial in determining success in L2 acquisition (Rosansky, 1975) as it was proven that bilinguals have higher metalinguistic abilities (Bialystok, 1997). Not surprisingly, most studies examining accent in L2 that consider the attitudinal and affective response of native/non-native listeners generally focused on English or a few European languages as L2 (Bent & Bradlow, 2003; Gardner, 2000; Lightbown & Spada, 1999; Magen, 1998; Schmid & Yeni-Komshian, 1999; Van Wijngaarden, 2001). However, in recent years there have been a number of such studies, conducted on speakers of Chinese (Su, 2001), Japanese (Aoyama et al., 2004), Korean (Yeni-Komshian, Flege, & Liu, 2000), and other languages learning English as well as other languages as their L2.

2 The linguistic status in Israel

The language situation in Israel represents a fully complicated case that includes the coexistence of two official state languages (Hebrew and Arabic), English, which is widely used in different contexts, and a number of other languages being the native languages of large groups of immigrants from different countries (e.g., Russian). However, Hebrew is the dominant language in the country and it serves as the principal language for communication between different groups of Israeli citizens.

The present study examines the influence of civic/social affiliations on degree of foreign accent in two prominent groups of bilinguals in Israel: Arabic- (ethnic minority) and Russian-speaking (immigrants) Israeli citizens.

The Arab population in Israel has been characterized by internalization of a marginal civic identity, alongside a marginal ethnic identity, so that they resolve the inherent contradiction between their civic (Israeli) and ethnic (Arab, Palestinian) identities by separating the two, rather than by reconciling them (Suleiman, 2002). As a minority, Arab children learn Hebrew as a second language in school. Arabs mostly live separately from Jews and de facto there are two separate educational systems, Jewish (Hebrew language) and Arab (Arabic language). All this hinders the L2 (Hebrew) learning process among Arab students (Abu-Rabia, 1998; Abu-Rabia & Feuerverger, 1996). Abu-Rabia (1998), who studied interactions between attitude toward L2 and reading comprehension in L2, found that the motivation of Arab students to learn Hebrew was primarily instrumental rather than integrative. That is, Hebrew is regarded only from a technical point of view (as an important instrument of communication), but not as the way of integration into Israeli society, which mostly is understood as Jewish society. Ibrahim directly examined the status (proficiency and psychological status) of Spoken Arabic, Literary Arabic, and Hebrew in native Arabic-speaking high school students (Ibrahim, 2006; Ibrahim & Aharon-Peretz, 2005). He showed that both Hebrew and Literary Arabic had the status of a second language among these participants, and that responses to written Hebrew and Literary Arabic were equivalent, indicating equal proficiency in reading the two languages. However, when the stimuli were presented orally, responses to Hebrew were slower than to stimuli in both Literary and Spoken Arabic. Thus, although the facility of Arab students in Hebrew and in Literary Arabic is equivalent with visual stimuli, when the stimuli are spoken, the status of Hebrew as a second language is quite clear.

Russian-speaking people comprise the most recent, large immigrant population in Israel. Russian is thought to be a valued, prestigious immigrant language with high literacy, developed media, numerous newspapers, and as a result, high language maintenance (Abu-Rabia, 1999). Moreover, in this group, linguistic affiliation seems to be more important than religious or national ideology (Abu-Rabia, 1999). Some researchers (e.g., Kozulin & Venger, 1994) showed that Russian-speaking newcomers display a tendency toward integration in the institutional and quotidian spheres, but not in the cultural sphere. However, such societal attitudes of this immigrant group seem not to hinder, but rather to contribute to successful Hebrew learning (Beenstock, 1996; Eisikovits, 1995; Mesch, 2003).

As mentioned above, the mechanism by which the structure of the native language affects second language production is unclear (e.g., Best & Strange, 1992). Such a mechanism might involve phonetic (segmental and supra-segmental), phonological, lexical, and/or other linguistic and extralinguistic processes (Guiora, 1994). Guiora suggested that the underlying reason for the phenomenon of “Conradism” (the ability of adults to fully master the syntax, vocabulary, and idiom systems of a second language, but their inability to master the phonological system of this language and sound like a native) is its relationship to the language ego. We were intrigued by Guiora’s suggestion that “both empathic capacity and pronunciation ability in a foreign language require . . . a temporary and reversible relaxation of ego boundaries” (Guiora, 1994, p.86).

In this study we tested the hypothesis that differing social and civic affiliations affect accent in L2, and that these are related in different ways to the permeability of the language ego as measured by empathic capacity. Russian- and Arabic-speaking bilinguals seem to present the perfect way to test this question. Specifically, we asked native speakers to rate the “heaviness” of the accent of a group of L2 speakers of Hebrew whose L1s were either Russian or Arabic. We then asked these same L2 speakers to complete the Interpersonal Reactivity Index (IRI) (Davis, 1980), which measures aspects of empathic capacity. The question of interest was whether degree of accent in these two groups, which differ in both social-ethnic factors and attitudinal factors, is related to this capacity in the same manner. Thus, we do not expect the groups to differ in the degree of empathy measured by the Index, since empathy that requires the accurate identification of emotional responses in others (Mayer, DiPaolo, & Salovey, 1990) is believed to involve well-defined abilities rather than solely attitudes (Mayer & Salovey, 1993). Rather, our hypotheses are specifically about the correlation between heaviness of accent and empathy score. Specifically, we hypothesize that the Arabic- and Russian-speaking groups will not differ significantly in their accent ratings or empathic capacity; however, they will differ in relationships between accent rating and IRI test scores.

3 Method

3.1

Participants

There were two groups of participants. The first group was comprised of 60 adults with normal speech and hearing aged from 19 to 26 years (mean age 23.4): 20 were native Hebrew speakers, 20 were native Russian-speaking immigrants (who had learned Hebrew after the age of 13), and 20 were Arabic-speaking Israeli natives (who generally begin to learn Hebrew in second grade, i.e., approximately at age 7–8). All were students at the University of Haifa (Haifa, Israel), where the language of instruction is Hebrew. These participants were recorded and completed the empathy questionnaire, as detailed below. The second group of participants were 20 native Hebrew speakers who listened to the speech segments created by the first group, and rated the heaviness of their accent. None had participated in the first part of the experiment.

3.2

Procedure

Each participant was recorded producing two speech segments. One was a reading of a short newspaper article (51 words), and the other was a description of the Cookie Theft picture (from the Boston Diagnostic Aphasia Examination, Goodglass & Kaplan, 1983). The picture and a translation of the article are presented in Appendices 1 and 2. These segments were digitized and edited, to produce two isolated 2 second excerpts (one of free speech and one of routinized speech) from each participant. These participants also completed the Interpersonal Reactivity Index (IRI) developed by Davis (1980), which has been translated into Hebrew and validated (Even, 1993). The IRI is a 28-item self-report survey of Likert-type items. The Index is made up of four subscales (perspective taking, fantasy, empathic concern, and personal distress). The English version is presented in Appendix 3. The scale yields a single numerical score that is a reflection of empathic capacity.

The recorded segments of speech were played to another group of 20 native Hebrew speakers, who rated the degree of accent in each segment on a scale from 1 (no accent) to 5 (heavy accent). We created two lists of 60 segments, in which one of the speech samples of each participant was included. Each rater listened to one of the lists, such that for each participant, we had an accent score from 10 raters based on free speech and an accent score from 10 raters based on routinized speech. The order of the segments in each list was randomized.

Thus, each participant had two scores: their IRI score, which is an indication of empathic capacity, and the mean rating of heaviness of their accent by native speakers. This design allowed us to compute correlations between the scores reflecting empathic capacity and degree of perceived accent. Following Guiora (1994), both of these measures are hypothesized to reflect ego permeability. If this is the case, they should be strongly correlated.

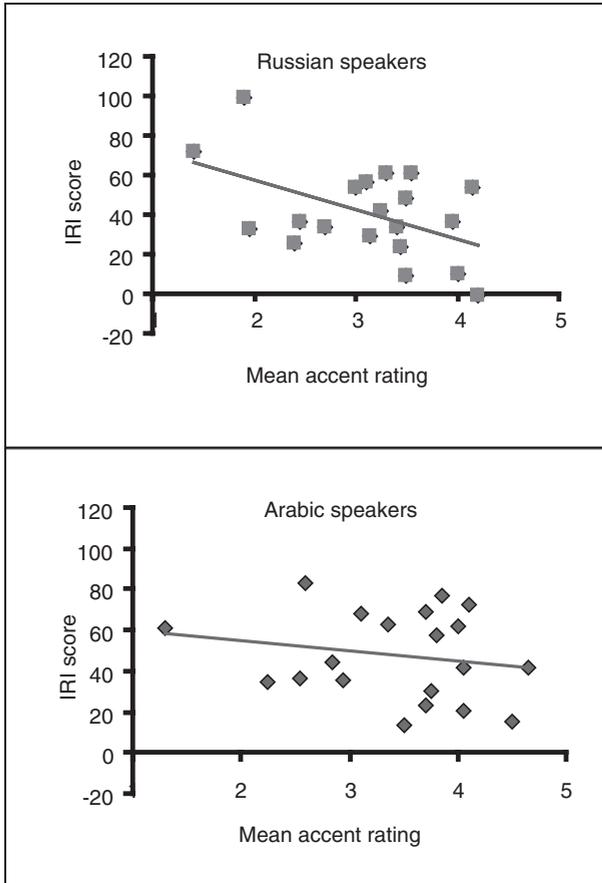
4 Results

We computed two one-way ANOVAs on the accent ratings and scores on the IRI scores. The bilingual groups received higher accent ratings than the native Hebrew speakers, $F(1, 57) = 143.97, p < .0001$, but did not differ from each other, $p > .13$. There was no effect of group in IRI scores, $p > .6$. These data are shown in Table 1. Thus, the bilingual groups were equivalent in terms of accent heaviness, and all of the groups were equivalent on the measure of empathic capacity. We computed Pearson product correlations between the mean accent ratings and IRI score for each group. These computations revealed that

Table 1

Mean rating of accent heaviness (from 1 = no accent; 5 = heavy accent) and empathy scores on the Interpersonal Reactivity Index (IRI) for each of the participant groups. Standard deviations are in parentheses

Native language	Mean accent rating	Empathy score
Hebrew	1.11 (0.14)	45.3 (21.7)
Arabic	3.43 (0.82)	47.4 (21.5)
Russian	3.16 (0.77)	40.8 (23.3)

**Figure 1**

Correlations between ratings of accent heaviness and IRI scores on three different language speakers. *Top panel:* on Russian speakers' group. *Bottom panel:* on Arabic speakers' group.

the relationship between IRI scores and degree of accent is moderate but significant in the Russian speakers, $r(19) = .489$, $p < .05$, but not significant in Arabic speakers, $p > .41$. These relationships are illustrated in Figure 1.

5 Discussion

Both Arabic and Russian native speakers speak Hebrew with an accent. We tested the “language ego” hypothesis by examining the relationship between degree of accent and scores on an empathy test. The results revealed that in spite of the fact that the Arabic- and Russian-speaking groups did not differ significantly in their accent ratings or empathic capacity, they did differ in the relationship between accent rating and IRI test scores. We found a significant negative correlation between empathy score and degree of accent in the Russian-speaking immigrants, and no relationship in the Arabic-speaking ethnic minority.

The pattern in the immigrant group constitutes straightforward support for Guiora's model of a "language ego." A higher score on the empathy test reflects higher ego permeability. This is related to a lower degree of accented Hebrew, suggesting that this characteristic is also related to ego permeability.

The results in the Arabic-speaking ethnic minority, on the other hand, do not constitute such support in a straightforward manner. We believe that the pattern shown by the native Arabic speakers reflects group identification and attitudes toward the majority, for whom Hebrew is the national language. These results conform to Schumann's (1976) "Acculturation Model." Thus the Arabic speaker's perception of the general relationship between their L1 and L2 culture and social distance influences the degree of their accent in the target language. This hypothesis is supported by anecdotal evidence: in the debriefing portion of the experiments, many Arab participants remarked that they maintain their accent in Hebrew *precisely* because it identifies them as members of the ethnic minority, and that they would not like to be misidentified as belonging to the majority Jewish ethnicity.

The results of this study reflect the richness and complexity that can be seen in the phenomenon of bilingualism. Our two groups of non-native Hebrew speakers were comparable in their basic background characteristics (e.g., age, existence of highly developed L1) and social-economic status (all were university students). Also, both groups started to learn Hebrew after the end of the putative critical period for speech learning (Hurford, 1991). In fact, Arabic-speaking participants began Hebrew studies at an earlier age than Russian-speaking immigrants. In addition, Arab society in Israel is not totally isolated from Jewish society and Arab children are exposed to Hebrew in many situations (e.g., TV programs and individual contacts) throughout their childhood, more so than children growing up in the former Soviet Union. Yet, even though both samples come from populations that are coherent linguistically and socially, they differ in their general attitude toward the majority culture and language. A few studies (e.g., Abu-Rabia, 1998; Suleiman, 2002) have shown that the Arab minority in Israel is characterized by a strong aspiration to define itself as a separate ethnic group. Thus, accented Hebrew may be identified as an additional feature for group designation (Guiora, 1994). It may be hypothesized, therefore, that L2 accent for Arabic speakers may be related to a language ego that is defined politically rather than personally.

Our results emphasize the importance of the sociocultural context in which second language learning occurs. We believe that our results offer valuable insights for educators when choosing teaching methods of second language in order to accommodate group designation in different types of minorities.

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Appendix 1



Appendix 2

Translation of short article read by participants

Unequal pay

Executives earn an average income of 15,320 shekel per month, (70 shekel per hour), whereas agents and sales people, for example, earn only 5,400 shekel on the average. However, the high salaries of the executives is compensation for their long work hours. It turns out that they work an average of 52 hours per week, whereas the other workers only put in 37 hours per week.

Appendix 3

Interpersonal Reactivity Index

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter next to the item number. **READ EACH ITEM CAREFULLY BEFORE RESPONDING.** Answer as honestly as you can. Thank you.

ANSWER SCALE:

A	B	C	D	E
DOES NOT				DESCRIBES
DESCRIBE				ME VERY
ME WELL				WELL

1. I daydream and fantasize, with some regularity, about things that might happen to me. (FS)
2. I often have tender, concerned feelings for people less fortunate than me. (EC)
3. I sometimes find it difficult to see things from the “other guy’s” point of view. (PT) (–)
4. Sometimes I don’t feel very sorry for other people when they are having problems. (EC) (–)
5. I really get involved with the feelings of the characters in a novel. (FS)
6. In emergency situations, I feel apprehensive and ill-at-ease. (PD)
7. I am usually objective when I watch a movie or play, and I don’t often get completely caught up in it. (FS) (–)
8. I try to look at everybody’s side of a disagreement before I make a decision. (PT)
9. When I see someone being taken advantage of, I feel kind of protective toward them. (EC)
10. I sometimes feel helpless when I am in the middle of a very emotional situation. (PD)
11. I sometimes try to understand my friends better by imagining how things look from their perspective. (PT)
12. Becoming extremely involved in a good book or movie is somewhat rare for me. (FS) (–)
13. When I see someone get hurt, I tend to remain calm. (PD) (–)
14. Other people’s misfortunes do not usually disturb me a great deal. (EC) (–)
15. If I’m sure I’m right about something, I don’t waste much time listening to other people’s arguments. (PT) (–)
16. After seeing a play or movie, I have felt as though I were one of the characters. (FS)
17. Being in a tense emotional situation scares me. (PD)
18. When I see someone being treated unfairly, I sometimes don’t feel very much pity for them. (EC) (–)

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19. I am usually pretty effective in dealing with emergencies. (PD) (–)
 20. I am often quite touched by things that I see happen. (EC)
 21. I believe that there are two sides to every question and try to look at them both. (PT)
 22. I would describe myself as a pretty soft-hearted person. (EC)
 23. When I watch a good movie, I can very easily put myself in the place of a leading character. (FS)
 24. I tend to lose control during emergencies. (PD)
 25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while. (PT)
 26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me. (FS)
 27. When I see someone who badly needs help in an emergency, I go to pieces. (PD)
 28. Before criticizing somebody, I try to imagine how I would feel if I were in their place. (PT)

Notes: (–) denotes item to be scored in reverse fashion

PT = perspective-taking scale

FS = fantasy scale

EC = empathic concern scale

PD = personal distress scale

A = 0

B = 1

C = 2

D = 3

E = 4

Except for reversed-scored items, which are scored:

A = 4

B = 3

C = 2

D = 1

E = 0