

THE IMPACT OF MUSICAL APTITUDE IN FOREIGN LANGUAGE ACQUISITION

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ABSTRACT

Finnish students with musical aptitude seem to pronounce single isolated English phonemes better than their classmates whose ear for music is less accurate. This claim is supported by evidence from a study in which 71 lower secondary school students presented their English pronunciation skills under language laboratory conditions. Native language habits were transferred into the target language in both discrimination and pronunciation, and it was also shown that the differences between the two sound systems caused production problems. However, students with musical aptitude made clearly fewer mistakes than their non-musical classmates. Could this mean that music and linguistic abilities may share neural resources?

1. INTRODUCTION

Music, a form of art known to exist in all human cultures, offers pleasure and joy to listeners, performers, dancers and composers. In addition to enjoyment thus provided in our everyday life, music may have the capacity to facilitate the learning of certain academic skills. However, our knowledge about the facilitation provided by music or musical aptitude in behavioral and neural learning is very limited.

The acquisition of a second language, a general requirement set by the Finnish educational system, is not equally easy for all pupils. Approximately 10% of the population are estimated to have disorders in reading and/or writing (i.e., dyslexia). For them, the acquisition of a foreign language sets especially high demands due to differences in graphemic correspondence with respect to their own native language. Thus this new writing system increases their learning load. Thus, foreign language lessons may become an even greater source of frustration than lessons in their native language (Dufva et al. 2001).

On the other hand, students attending a special music class at an elementary school (grades 7-9), at least find learning a proper pronunciation easier than students in ordinary classes (Milovanov, 2000). Moreover, due to increased demands in terms of international cultural and economic exchange, adults are also better motivated to learn new languages than before. Obviously, determining the optimal educational means to the meet needs of several types of learners, differing in age and basic abilities, would be extremely useful.

One of the main goals of today's English teaching in Finland is to develop students' oral communicative skills. (Here English is considered as the model for learning a foreign language, due to its popularity among elementary school students and also due to high motivation to acquire it among adults.) In other words, the students

should systematically practise speaking the foreign language and become familiar with the communicative strategies of the target language. When teaching English, the instructors also need to be sure that their students can produce the various sounds that occur in the English language. Pronunciation may be considered one of the most important factors when learning another language; poor articulation can easily cause misunderstandings in communicative situations. Therefore, one should carefully pay attention to the special characteristic features of the target language. However, pronunciation is an aspect of language known to be most difficult to learn after childhood (Larsen-Freeman & Long, 1992). We can thus predict achieving accurate pronunciation will be more difficult for adults than for school-age children. On the other hand, the adults may compensate for this difficulty by being more highly motivated.

2. THE AIMS OF THE STUDY

We wanted to determine whether musical aptitude contributes to foreign language pronunciation skills. For students with musical ability it is easy to discriminate between notes of different pitch. It was assumed that for them it is easier to identify and also produce phonemes of a foreign language than for the students whose ear for music is not so sharp. The subjects (71 Finnish teenagers, age: 13-15) had studied English for five to seven years at school and the phonemic system of the language should have been familiar to any students who took part in this test. The students who were considered musical had passed the following tests: Musicality test developed by Seashore (1967) and Karma's musical aptitude test (1993).

3. METHODS

According to the *Contrastive Analysis Hypothesis*, one can determine by comparing the two sound systems (the native language and target language) when learning problems are likely to occur. One tends to transfer the native language pronunciation into the target language and it is the differences between the two sound systems that are more likely to cause learning problems (Lado, 1971). Two types of tests were used to determine the level of the subjects' articulation skills. 1.) A production test: reading out loud a humorous dialogue onto tape. No native model was used. Two representatives of each phoneme investigated were included in the production test. 2) A listening discrimination test, in other words, sound discrimination through triplets based on minimal contrast (i.e. ship –sheep – ship). Two representatives of each phoneme investigated were included in the discrimination test.

4. RESULTS

As can be seen in Figure 1, the pupils with specialization in music were found to pronounce English better than pupils who did not specialize in music education.

As proposed by the Contrastive Analysis Hypothesis, the problematic phonemes were those which did not belong to the Finnish sound system, i.e. affricates and fricatives. Production (Prod.) also seemed to follow discrimination (Discr.).



Figure 1. Mistakes made by music class and ordinary class in production and discrimination tasks.

5. CONCLUSIONS

Although the present results hint that music and linguistic abilities may share neural resources, they can be regarded only as preliminary notions. Therefore, in a further study, both behavioral and neural indices in several age groups will be used to illuminate the effects of music training / musical aptitude in foreign language pronunciation learning, whether the musically talented subjects' cortical networks represent the important sound features of foreign language phonemes more readily than other pupils will be investigated.

6. REFERENCES

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