

Ana Kocić*

University of Niš, Faculty of Philosophy

THE EFFECTS OF APTITUDE ON LANGUAGE LEARNING

Review paper

UDC 159.928:371.3:81'243

The paper gives a brief overview of the research on aptitude as a factor in the process of foreign language learning. Starting from the premise that aptitude plays an important role in the language teaching process, the author presents various courses the research on this concept has taken from the beginnings in mid-50s to a more contemporary research which points towards a revival of interest in aptitude. The implications of several contemporary aptitude research projects are presented with a special emphasis on the attempts to link aptitude with the SLA theory. Finally, some possibilities for further research are presented, as well as several implications such research may have for the teaching practice.

Key words: *Aptitude, Individual differences, Aptitude battery tests, SLA theory.*

1. Introduction

Among individual differences in language learners aptitude seems to be the most controversial and the most disputed one among linguists; firstly because of the apparent difficulty with defining it and setting it apart from general intelligence, secondly, due to the 'undemocratic' implications it allegedly may have on language teaching and finally, because of a rather limited amount of aptitude research. Despite some previous doubts regarding its significance, in the last two decades aptitude has been acknowledged as one of the most important factors and predictors of learners' ultimate success in L2 learning (Dörnyei 2005) and, consequently, the interest in aptitude research has grown significantly as well as the amount of published materials. Another reason for choosing aptitude is based on my personal teaching practice, which has proven that in many cases aptitude represents one of the decisive factors in the process of mastering a foreign language. This does not mean that the other individual differences are to be neglected or considered unimportant but is rather an attempt to shed more light on the issue which in spite of being repeatedly overlooked seems to be constantly re-emerging as a very important one. The support for this statement can be found not only in theory and the results of empirical research but also in experiences of many language teachers.

* Univerzitet u Nišu, Filozofski fakultet, Ćirila i Metodija 2, Niš; email anakocic@hotmail.com

2. Early research on aptitude

2.1 Towards defining aptitude

Defining aptitude has always been somewhat difficult and the usual method was to define it in terms of the tests used to measure it (Ellis 1985). What seems to be the predominant view is that it is not a unitary concept, but rather a set of abilities which enhance language learning in individuals. Carroll and Sapon define aptitude as a complex of "basic abilities that are essential to facilitate foreign language learning" (cited in Dörnyei 2005: 23), which includes discriminating sounds and associating them with written symbols and identifying grammatical regularities of a language (Ellis 1985). The more recent research also suggests that both aptitude and intelligence consist of more aspects. Some authors argue that aptitude is only an 'umbrella-term' for a set of specific cognitive skills and capacities, such as *working memory* or *phonological coding/ decoding*, which go beyond the skills usually measured to determine linguistic aptitude (Dörnyei, 2005). What seems to be undisputable is that aptitude has to do with learners' efficiency and the rate at which they learn a foreign language. It is a common knowledge that best language learners possess a certain 'knack' for languages which enables them to learn languages more quickly than the others (Lightbown and Spada 2006).

2.2 Aptitude batteries

The two best-known tests used for measuring linguistic aptitude are the Modern Languages Aptitude Test (MLAT), developed by Carroll and Sapon in 1957 and the Pimsleur – Language Aptitude Battery (PLAB), developed by Pimsleur in 1966. Dissatisfied with the previous aptitude tests, predominantly based on grammar-translation methodology, Carroll and Sapon devised the MLAT test, which puts forward the four-component view of language aptitude (Skehan 1989). The components measured by this paper-and-pencil test battery are:

1. Phonemic Coding Ability – the ability to link sounds and symbols so that they could be recalled later, i.e. the capacity of handling phono-orthographic material;
2. Grammatical Sensitivity – the ability to identify the grammatical functions that words have in sentences;
3. Inductive Language Learning Ability – the ability similar to grammatical sensitivity involving capacities to analyse language learning material and find patterns;

4. Memory and Learning – the ability to bond stimuli (native language words) and responses (target language words) which affects learner's speed in acquiring new vocabulary. (Carroll, 1965)

The test has proven to be more reliable than general intelligence tests when it comes to predicting learner's success in language learning, but it is also important to mention that the variability in scores suggests that other factors influence the ultimate success as well.

Pimsleur's LAB test was devised for testing children aged 13 to 19 (Skehan 1989). It is similar to the MLAT in terms that it also takes into account sound discrimination and sound-symbol association (Pimsleur 1966). However, some major differences which stem from theoretical background and are reflected in the test design are less concern about memory and a greater emphasis on *the inductive learning ability*. Pimsleur included motivation in the concept of linguistic aptitude, thus broadening it and acknowledging that learner's interest in a foreign language plays an important role in the learning process (Dörnyei 2005). This was a somewhat controversial move because aptitude and motivation are generally considered to be two separate categories of individual differences. Skehan (1989) explains the differences between the two batteries with different backgrounds of the authors, Carroll's being in psychology and Pimsleur's being in linguistics.

Skehan's contribution to the development of aptitude tests is a review of Carroll's concept of aptitude in 1989. He argued that the number of aptitude components should be reduced to the three basic ones: auditory ability, memory ability and linguistic ability, which unites Carroll's grammatical sensitivity and inductive language learning ability, the two features he claimed to be of the same nature (Dörnyei 2005).

Further attempts at devising linguistic aptitude tests were mainly for military purposes, the most important of which was carried out by the American Armed Forces – the Defense Language Aptitude Battery (Petersen and Al-Haik 1976). The main aim of this test was to modify the MLAT so that prediction was maximized. However, it is a general agreement that none of the subsequent tests managed to outperform the MLAT in terms of reliability and prediction (Dörnyei 2005).

The most prominent feature of previously mentioned tests is a strong emphasis on auditory and structural aspects of aptitude, probably the result of the predominant methodology (audio-lingual) of that period. What seems to be evident is

a lack of interest in communicative features of aptitude. It is also important to mention that previously mentioned batteries were devised before the development of the SLA (Second Language Acquisition) theory, which might account for the failure to include communicative competence measuring in the tests. Nonetheless, the MLAT is still one of the most influential tests in this field, precisely because of its reliability and high degree of successful prediction.

2. 3 Critiques of aptitude

Skehan (1989) gives a review of criticisms concerning aptitude and its inclusion in the research on the influence of individual differences on language learning. One of the common arguments against aptitude is that it is less relevant than other factors, such as motivation, personality or cognitive styles. However, the research has provided evidence that the correlations between aptitude battery totals and criterion scores are higher than the ones obtained when other variables are investigated. Another objection is related to the nature of aptitude which is considered to be innate, and therefore, 'undemocratic' and 'unfair', because it cannot be altered in learners. Most studies have shown that aptitude *does* remain relatively stable throughout one's life, but it is not completely clear whether it is innate or appears at the age of three and is affected by the environment in that early period of human life. Dörnyei (2005) mentions the study conducted by Harley and Hart in 2002, which gives some evidence that the nature of aptitude changes with age. It is clear that this issue demands further research and perhaps some modified view of aptitude (as a set of abilities, some of which can be developed further) which would account for the results of Harley and Hart's and similar studies.

Two other major criticisms were related to Krashen's theory and the distinction between language acquisition and language learning. One is the presumable lack of practical explanatory value, i.e. aptitude tests are only relevant in terms of prediction. The other is Krashen's argument that aptitude plays an important role in formal teaching situations only (Skehan, 1989), whereas it is irrelevant in the process of natural acquisition. This argument will be dealt with later in this paper. As far as the first one is concerned, Skehan admits that it is not without foundation. A counter-argument may be that, despite some drawbacks regarding explanatory values of aptitude tests (which are predominantly caused by the *lack* of research in that area, and *not* by the research which would point towards the total absence of

valid explanation), they still remain good and valid predictors of learners' possible achievement in the process of foreign language learning.

3. More recent research on aptitude

3. 1 The renewal of interest in aptitude

After the publication of the MLAT and the PLAB tests, the initial interest of language teachers and linguists in the area of aptitude measurement slowly began to fade. This drop of interest coincided with the development of communicative approaches to language teaching, which made measuring abilities to perform context-reduced activities irrelevant (Brown 2005). In the 90s, only few isolated attempts at research of aptitude are worth mentioning: Harley and Hart (1997), Sasaki (1993) and Skehan's efforts (1998) to modify the construct of aptitude by relating it to a cognitive view of second language acquisition (Brown 2005).

However, the last few years brought a significant revival of interest in language aptitude and a number of studies and research papers have been published with the new ideas and concepts of aptitude. One of the explanations for this shift lies in the development of cognitive psychology, reflected in new theories of intelligence with more accurate fragmentation and explanation of various mental abilities which are constituents of the overall language learning ability. In addition, further attempts were made to relate aptitude research to the key points of the SLA theory (Dörnyei 2005).

The authors who follow the renewed course of aptitude exploration are Grigorenko, Sternberg and Ehrman, who devised a new dynamic aptitude battery based on Sternberg's theory of intelligence (2000). Dörnyei and Skehan (2003) suggested the possible link between aptitude and the concept of 'processes' of second language acquisition (Brown 2005). Furthermore, same authors conducted research which relates aptitude to implicit learning, i.e. learning out of the teaching context. Another important advancement in aptitude research was made by Robinson. His continuous efforts to extend the notion of aptitude and its constituents far beyond original Carroll's concepts seem very promising. Robinson's idea (which will be discussed in more detail in the next section) that various aptitude factors and their combinations significantly contribute to learning processes appears to be supported by the research evidence.

At this point, it is evident that research into aptitude, combined with exploring other psychological variables, may significantly contribute to clarifying some of the SLA issues concerning language learning and learning in general.

3.2 SLA theory and aptitude

One of the key issues which needs to be explained when aptitude is viewed from the SLA theory perspective is the relation of aptitude to the processes of interlanguage development (Ellis 1997). The research suggests that aptitude has no effects on the route of SLA, but that it may affect the rate of development, especially in classroom learning (Ellis 1985). Current research of aptitude seems to be developing along two tracks, both of which are basically concerned with the same issues, the main difference being the approach taken. The first one is a theoretical line, aimed towards exploring and explaining the role of aptitude during SLA. The empirical line consists of numerous studies which provide data on the effects of aptitude in various learning settings, i.e. formal, naturalistic and experimental (Robinson 2002).

An important event in the recent aptitude research was a publication of a new L2 aptitude test designed by Grigorenko et al. (2000) called the Cognitive Ability for Novelty in Acquisition of Language as applied to foreign language test (CANAL-FT). The test is based on Sternberg's theory of a three-fold view of intelligence, which consists of analytical, creative and practical metacomponents, necessary for everyday life, and not only related to formal teaching contexts (Sternberg et al. 2002). Unlike previous aptitude batteries, the CANAL-FT measures people's ability to deal with novelty in their learning and is conducted in a naturalistic context (Dörnyei 2005). The first empirical results seem promising and concordant with the authors' idea that aptitude is not to be measured only in terms of one general language-aptitude score. Grigorenko et al. argue that a valid aptitude test should also give subscores which would point towards most appropriate forms of instruction (Sternberg et al. 2002). Such tests would not only be applicable in practice, but would also give more reliable results since they would not only measure one's analytical language abilities, but also creative and practical language acquisition abilities.

Skehan (in Robinson 2002) tackles the question of the nature of modularity in language learning. He suggests that, towards the end of the critical period, the nature of modularity changes in the sense that the number of modules increases.

Namely, there is evidence that L1 aptitude may be consistent with the syntax and semantics modules, whereas in the L2 case, our brain resorts to three more general learning mechanisms. Each of these mechanisms corresponds to one of aptitude components: auditory processing – receiving input, language processing – analyzing data and memory – recalling the processed data. Based on the research evidence, Skehan argues that there is a possibility that there are specific linguistic abilities, concretely, in terms of input processing and memory, whereas in the case of language analyzing and creating patterns more general cognitive abilities seem to be operating. This may be an interesting line for further research, but remains very speculative for the time being.

The only person so far who has managed to link individual differences research with SLA aspects and to provide some viable evidence is Peter Robinson. His main achievement (2002, 2001) is profiling individual differences in cognitive abilities and further connecting such profiles with adequate pedagogic tasks. He makes the distinction among implicit, incidental and explicit learning and points out some cognitive (e.g. working memory capacity) and primary abilities (e.g. pattern recognition and processing speed) which are further combined into higher-order abilities directly responsible for learning. His idea is that these sets of higher-order abilities constitute aptitude complexes which affect learning under specific conditions. The most important aspect of his research is the view of aptitude as a dynamic structure, the constituents of which jointly affect the language learning process. Furthermore, these 'clusters of learner variables' are interrelated not only with language learning tasks but also with instructional techniques (Robinson, 2001:390). This provides a solid basis for the continuation of research into aptitude and SLA processes, both in terms of theoretical connection and pedagogically-oriented application.

3.3 Possibilities for further research

At present, it appears that aptitude research is at its new beginning. One of the main trends is emphasised reliance on cognitive psychology, psycholinguistics, and neurolinguistics, as opposed to earlier research (Dörnyei 2005). Another noticeable feature, and possibly a promising one is a dynamic view of aptitude and its interrelation with the context. Much effort is being invested in the attempts to incorporate aptitude research into the current trends of the SLA research. With regard to that, some future research may be aimed towards finding more explicit

links between aptitude and SLA processes. Further differentiation of aptitude complexes is necessary in order for that hypothesis to have serious practical effects (Robinson 2001). Also, there is much space for investigation of the relationship between the cognitive abilities engaged in L1 learning processes and the ones used for L2 learning. Such research would not only shed more light on the theoretical issues, but would be very helpful in practice, e.g. materials design, choice of techniques and classroom activities which would be in accordance with students' needs.

On the other hand, another line of research could deal with the interrelationship and interplay of various individual differences and their combined effects on language learning. It is rather obvious that in some cases it is almost impossible to distinguish between the areas of, for example, aptitude and general intelligence, or aptitude and learning styles. Comprehensive research which would incorporate all these issues could be valuable in terms of defining what exactly the 'talent' for learning languages is and, even more importantly, whether and how it can be developed.

4. Conclusion

When all previously mentioned evidence is taken into consideration, it becomes clear that aptitude is a very important factor in the process of language learning. Firstly, linguistic aptitude is a universal human characteristic when L1 acquisition is in question. Secondly, despite the claims that it is undemocratic, aptitude does play a very significant role in L2 learning. Everyday teaching practice confirms this. However, the big question is what is to be done with the information we have on our students' aptitude. Perhaps a slight modification of outlook would make a difference; namely, if we consider aptitude from the perspective of the possibilities it offers for the improvement of our teaching and our students' ultimate success, and not as an unalterable factor which only causes unnecessary distinction and confusion, we may realize its value and potential. Since it seems that aptitude has a major significance for the rate of language learning, aptitude test scores can be used for enhancing teaching materials and techniques. Thus, *all* students will have the opportunity to receive better instruction, adjusted to their needs. On a broader level, exploration of the notion (or maybe notions) of aptitude will certainly have major implications for a detailed explanation of human cognitive abilities and learning processes.

References

- Brown, H. D. 2005. *Principles of Language Learning and Teaching*. New York: Pearson Education
- Carroll, J.B. 1965. The prediction of success in foreign language training in R. Glaser (ed), *Training, Research and Education*. New York: Wiley
- Dörnyei, Z. and Skehan, P. 2003. Individual differences in L2 learning. In C. Doughty and M. Long (Eds), *The handbook of second language acquisition* (pp. 589-630). Malden, MA: Blackwell Publishing
- Dörnyei, Z. 2005. *Psychology of the Language Learner: Individual Differences in Second Language Acquisition*. Mahwah ; London : Lawrence Erlbaum
- Ellis, R. 1985. *Understanding Second Language Acquisition*. Oxford: OUP
- Ellis, R. 1997. *Second Language Acquisition*. Oxford: OUP
- Grigorenko, E., Sternberg, R. and Ehrman, M. 2000. A theory-based approach to the measurement of foreign language learning ability: The CANAL-F theory and test. *Modern Language Journal*, 84, 390-405
- Lightbown, P. and Spada, N. 2006. (3rd ed.) *How Languages are Learned*. Oxford: OUP
- Petersen, C.R. and Al-Haik, A. 1976. The development of the Defense Language Aptitude Battery (DLAB), *Educational and Psychological Measurement*, 36, 369-80
- Pimsleur, P. 1968. Language Aptitude Testing in Davies A. (Ed.) *Language Testing Symposium: A psycholinguistic perspective*. Oxford: OUP
- Robinson, P. 2001. Individual differences, cognitive abilities, aptitude complexes and learning conditions in second language acquisition. *Second Language Research*, 17, 368-392
- Robinson, P. (Ed.). 2002. *Individual Differences and instructed language learning*. Amsterdam: John Benjamins
- Skehan, P. 1989. *Individual Differences in Second-Language Learning*. London: Edward Arnold
- Skehan, P. 2002. Theorising and updating aptitude. In P. Robinson (Ed.) *Individual Differences and instructed language learning*. Amsterdam: John Benjamins
- Sternberg, R.J. and Kaufman, J.C. (Eds.). 2002. *The evolution of intelligence*. Mahwah, N.J. : L. Erlbaum Associates

Apstrakt

UTICAJ UROĐENE SPOSOBNOSTI NA UČENJE STRANOG JEZIKA

U radu se daje kratak pregled istraživanja urođene sposobnosti - talenta kao faktora u procesu učenja stranog jezika. Polazeći od pretpostavke da talenat igra važnu ulogu u procesu nastave stranog jezika, dati su različiti pravci u kojima se istraživanje ovog koncepta odvijalo od svojih početaka sredinom 50-ih do savremenijih istraživanja koja se kreću ka obnavljanju interesovanja za urođenu sposobnost. Prilikom prezentacije implikacija nekoliko savremenih projekata istraživanja, poseban naglasak je na pokušajima povezivanja urođene sposobnosti - talenta sa Teorijom usvajanja stranog jezika. Na kraju su predložene neke od mogućnosti za dalja istraživanja kao i implikacije koje bi takva istraživanja mogla doneti nastavnoj praksi.

Ključne reči: urođena sposobnost, individualne razlike, testovi za utvrđivanje urođene sposobnosti za učenje jezika, Teorija usvajanja stranog jezika

Rad primljen: 13. oktobar 2010.
Ispravka rukopisa dostavljena: 20. oktobar 2010.
Rad prihvaćen: 25. oktobar 2010.