

Review

Interference of first language in the acquisition of second language

Avanika Sinha*, Niroj Banerjee, Ambalika Sinha and Rajesh Kumar Shastri

Department of Humanities and Social Sciences, Motilal Nehru National Institute of Technology, Allahabad, Allahabad-211004

Accepted 18 August, 2009

This review paper focused on the issue of language acquisition and the interference created by first language (L1) on the learning of second language (L2). Efforts were made to find out the factors that play a major role in this dysfunction of language acquisition. Further, what type of standardized measures or training should be employed, so that an individual's weak performance would be eliminated and she/he could do well academically as well as professionally.

Key words: Language acquisition, interference, standard measures, first language, second language.

INTRODUCTION

Language acquisition

Language acquisition is one of the most important and fascinating aspects of human development. The first sound a new born baby makes is in the form of 'coos' and 'gurgles' which elder find pleasing to hear. These are the indications, which a small child shows to have something. There are various subconscious aspects of language development such as metalinguistic, conscious, formal teaching of language and acquisition of the written system of language in both L1 and L2. Various language variables are involved in the language processes like phonology, vocabulary, morphology, syntax, paralinguistic, pragmatics and discourse. In order to provide success in cognitive functioning as well as professional life of an individual, his/her first language acquisition must develop strongly in the early years.

First language acquisition

First language is being termed by different names such as native language, primary language and mother tongue (e.g. Hindi). This language is assumed to be one which is acquired during early childhood- starting before the age of about 3 years. Acquisition of more than one language

during early childhood leads to simultaneous multilingualism. Whereas sequential multilingualism means learning additional languages (L2) after L1 has already been established. Simultaneous bilingualism is less common than sequential bilingualism.

Second language acquisition

A second language is typically an official or societal dominant language (e.g. English) needed for education, employment and other basic purposes. In India, English is learnt as a second or foreign language that is not widely used in the learner's immediate social context that might be used for future travel or other cross-cultural communication situations or studied as a curricular requirement or elective in school, but with no immediate or necessary practical application.

Bilingualism

Bilingualism represents an interesting problem for psycholinguistic investigation. What could be the reason for separating two languages in storage and production? What is there thinking processes? In what manner cognitive processes of bilinguals are different from monolinguals? Mostly researchers have tried to find out the answers to these questions by experimental methods. In a study, subjects were tested individually without any in-

*Corresponding author. E-mail: Aavanika@yahoo.com.

terruption. The same instruction was given to everybody. The objective measurement methods implemented were reaction time to determine comprehension and naming latencies for production. It was reported that processing speed increased according to the experience the subject had with a language. This was found for both the comprehension and production. In the comprehension studies, subjects had to follow short directions telling them to check off a series of items defined by position, value, shape or colors. At the simple level also speed of response was slower in the language bilinguals are less familiar with. In the production test, subjects were asked to name pictures of common objects in either of their two languages. Here also, the outcome was the same. Weinreich (1963) has described about three types of bilingualism. These emerge on the basis of the way language is learned. Mainly the two types of bilingualism which are talked about are "coordinate" and "compound". In coordinate bilingualism, an individual acquires the languages in the two different surroundings and the words of the two languages are kept separate with each word having its own meaning. For example, a person whose native or first language is Hindi and later he acquires the second language that is, English in school then the words in both the languages different in contexts (e.g. kitab in Hindi and book in English) would have different meanings. This happens due to having developed different conceptual systems stored for the two languages.

Whereas in compound bilingualism, the two separate languages are acquired at the same time within the same context. This shows the combined representation of languages in the brain. For example if a child learns both English and Hindi languages at home, he/she would know the different terms used in the two languages for the same thing (book). Thus having common meaning for them and both the words would be stored in the same mental representation.

Another type of concept is sub-coordinate bilingualism in which people interpret words of their weaker language through the words of stronger one. For example, if a Hindi/English bilingual has low fluency in English then he would replace or pronounce the word pani instead of water. Thus various theories are being introduced and it has still been a major area of research and study to disclose several issues pertaining to it

LITERATURE REVIEWS

Relationship between first and second language acquisition

During the period of 70's and 80's various studies were conducted with first and second language learners showing that phonemes played a role in speaker's native categories. Three models were proposed to explain the

functioning of L1 in L2. The first model talks about the relationship between mature phonological system and speech perception. The Perceptual Assimilation Model (PSM) was developed to analyze the functioning of speaker's L1 phonological system in the perception of non-native sounds (Best, 1994). Another model that focuses on the issue of L2 segment acquisition is the Speech Learning Model (SLM). The SLM tries to find out how speech perception affects phonological acquisition by distinguishing the two kinds of sounds: "new" (not identified by any L1 sound) and "similar" (identified by L2 sounds). It was suggested that phonetic systems in production and perception tend to be adaptive over the life span and reorganize in response to the sounds in the L2 inputs. This process is known as "equivalence classification" that obstructs the establishment of new phonetic categories for similar sounds. However, the researchers are unable to explain the nature of that mechanism (Flege, 1995).

The other model of speech perception-phonological acquisition interaction is the extended work of Ritchie (1968) and Michaels (1973). Thus, it explains that the features used in grammar differ in terms of their level of prominence. Features that are used frequently in the language's phonology will be more prominent than the less frequently used ones. Thus, features more prominent in L1 system will greatly influence learner's perception of new L2 sounds (Hancin and Bhatt, 1994). According to the theory of feature-geometry, each phoneme is unique in terms of its structure that separates it from other segments in an inventory (Clements, 1985; Sagey, 1986). One question always emerges why foreign sounds are perceived in terms of native sound categories.

There is also a need to examine the genetic development of these systems. Universally the same principal applies on both first and second language acquisition, though there is a dissimilarity in terms of processing capacities that leads to interference. The "contrastive analysis hypothesis" argues that the structures and shapes (That is, Hindi letters consist of various types of matras and signs) of the first language of an individual are different from those of the second language that could create errors in speaking, reading and writing (Dulay et al., 1982). Lennenberg (1967), proposed his theory of critical period in which he argued that in order to have a proper language fluency, it should be acquired or learned before the onset of puberty. However, he left out the point that whether this applies only to the first language acquisition or extend up to the second language acquisition also. Lennenberg suggested two parts; firstly, normal language learning occurs within childhood. Secondly, reaching the adult age values by puberty, brain loses its plasticity and reorganizational capacities necessary for language acquisition.

There are two distinctions to know the effect of critical period hypothesis on first and second language acquisition separately. Firstly, at early stage, humans are quite capable of learning languages. If it is not done, it will reduce with maturation. Nevertheless, if the reverse happens the capability of learning further languages will remain intact throughout life. Lenneberg 1967, gave the phenomenon cerebral dominance and concluded that in childhood the left hemisphere is ordinarily more directly involved in language and speech than the right. After attaining a maturity, the two hemispheres become quite specialized for function and with the completion of lateralization (shifting language entirely to the left and the rest to the right one) the polarization of function between the two hemispheres take place. Comparative inability of younger children to transfer and recall vocabulary in terms of their first language gives them an advantage in learning a second language without interference from their first language.

Evidence regarding accents

Foreign accent is the inability of non-native language users to produce the target language with the phonetic accuracy required by native listeners for acceptance as native speech. Although, there is, in all languages, a fairly large variation in phonetic realization depending on a number of regional, social and stylistic factors. Native speakers, presumably because of extensive experience with the language, seem to have little trouble recognizing the deviant phonetic realization of the language usually known as foreign accent.

Strange (1995) used the term “perceptual foreign accent” to refer to the “significant difficulty” which adults have “perceiving most (but not all) phonetic contrasts that are not functional in their native language” and she notes that this can interfere with learning an L2 phonology. By the time, cerebral lateralization is complete at puberty there is the appearance of foreign accent (Scovel, 1967). The chance of acquiring mastery at second language acquisition is higher before the age of about 12 since the lateralization is not completed yet. The term interference is derived from a learning theory approach that explains about the process of habit formation constitutes in language learning. Interference included those errors that occur in the learning of a second language. These kinds of errors must be categorized in terms of three errors:

Developmental errors: Those errors that do not reflect the learner’s first language (L1), but found among those who acquire the second language (L2) during childhood as a first language.

Ambiguous errors: Those errors that can be categorized as due either to interference or as developmental

errors.

Unique errors: Those errors that cannot be categorized as due either to interference or as developmental errors.

Interference results from the fact old habits (the first language) must be unlearned before new habits (the second language) can be mastered (Dulay and Burt, 1972). The important issue is whether in learning a second language a person inevitably uses first language and that error results from the interference of the first language? The fact that an American learns French and German easier than Chinese and that for Japanese the reverse is true simply due to the way in which the material is taught (Littlewood, 1973). Taylor (1975) has pointed out that while learning a language humans over generalize target language rules, reduce grammatical redundancies, and omit those rules that they have not learned. Flege (1999) argued on this issue and proposed three hypotheses that account for foreign accents; 1) Exercise hypothesis in which one’s ability to learn to produce and to perceive speech remains intact across the life span, but only if one continues to learn speech uninterruptedly. 2) Unfolding hypothesis in which as much fully developed the L1 phonetic system will be at the starting of L2 learning the more foreign accented the pronunciation of the L2 occurs. 3) In Interaction hypothesis bilinguals are fully unable to separate the L1 and L2 phonetic systems, necessarily interacting with each other. To the L2 user, however, difficulties of comprehension caused in part by phonetic and phonological factors can certainly be as problematic in the everyday use of the L2 as the difficulty in making oneself understood due to non-native pronunciation.

Phonological awareness

Phonological awareness plays a major role in learning to read words, sentences or paragraphs in a particular language. It refers to the sound of one’s language in the processing of writing and speaking. So, it is the awareness of and access to the phonology of one’s language. Successful acquisition of phonological representations needs accurate perception of phonemic. It is proved empirically that phonological awareness helps in the development of fine reading.

In a study (Widjaja and Winskel, 2004) seventy-three children were taken from grade one. Here, the assessments tasks were the phonological awareness, letter knowledge, word and non-word reading skills. The sub-tests administered were rhyme detection task, a syllable deletion task, a syllable detection task, an onset deletion and a phoneme deletion task.

The result showed that there was no significant difference between the tasks. Overall, there was found, that

the children's performance was highest on the syllable awareness task and lowest on the rhyme task. Further analysis showed that in Indonesian language phonological awareness is acquired in a different manner than that of the English. Goswami et al. (1997) investigated the use of 'orthographic chunks' corresponding to rhymes in a study comparing nonword reading in English and Greek. Weber (2000) showed that proficient German English bilinguals were sensitive to both native German and non-native English phonotactic sequence constraints. They were given nonsense words with German and English onsets and had to detect the word luck. English speakers first detected the word luck in moyshluck. This was attributed to the fact that shl- is not a possible onset in English which made it more salient than the other possibilities.

German-English proficient bilinguals more easily detected the word luck in the word moysfluck. Moreover they detected the word luck in the word moyshluck faster than in the word moysfluck. This study offered evidence that these listeners were sensitive to both native sequencing constraints and acquired some sensitivity in English phonotactics. Unlike the phonemic categorization that seems to be the cues in the input of one language as well as they do with the other language. More recently, results from an event related functional magnetic resonance imaging (ER-fMRI) study of Chinese-English (Pu and colleagues, 2001) gives evidence of a shared neural mechanism for the processing of native and second languages. Investigation of the left inferior to middle frontal lobe revealed parallel neural activity induced hemodynamic responses during verb generation tasks in each language. These findings suggest that not only the same brain regions activated by each language, but moreover they operate on a similar time interval.

Oller and Tullis (1973) compared processing times of native and non-native readers of English in reading English text. They found that non-native readers produced the same number of fixations and regressions as did native readers, but their fixations were much longer. This indicated that bilinguals process more slowly in their second language. Marsh and Maki (1976) found a similar result when measuring the time bilinguals needed to compute answers to simple mathematical problems: they computed much faster in their preferred language. Main reason could be that bilinguals have less time to practice language processing in either language that is, less automaticity.

Language Interference in India

In India, various research works are being conducted in the concerned area. A study was conducted to know about the relationship between reading and phonological awareness in English and Oriya (alpha syllabary language).

The test was implemented upon fifth grade children whose strength was almost ninety-nine. Two groups of students were taken for the assessment. One group of children was going to Oriya medium schools while the other group was attending the English medium school. The materials implemented here were Language background questionnaire, the test of phonological awareness (to measure English phonological awareness), Raven's coloured Progressive Matrices (to measure nonverbal cognitive ability) and British Ability Scales Word Reading Test (to measure English word reading accuracy). The result showed that phonological awareness helps children in learning to read Oriya and English words along with the pseudo words in Oriya medium schools. While in the case of English medium schools, it was found that phonological awareness helped only in reading of Oriya pseudo word and English words. Further, the data suggests that the cross language transfer and facilitation of phonological awareness in learning to read depend on certain points. First, the characteristics of the different orthographies of the particular languages learned and second, whether the language that is learned first is also the first spoken language (Mishra and Stainthorp, 2007).

Tools/tests developed

There are various standardized tests and measures available, which on the global level are administered to children, youngsters and adults. These tools meant for finding out the proficiency level of an individual in terms of reading, writing and speaking ability in native as well as the other languages.

Language background questionnaire: The Children's and adult Multilingualism Questionnaire is employed to probe into the experiential background of the bilingual children [to be completed by parents]. This questionnaire contains six parts: information about the child, family language background, child language background, child language use (code-switching), reading/writing ability, and summary and comments. This questionnaire allows open-ended question types. Both of these measures are complementary in terms of obtaining balanced information about native and second language acquisition.

Reading assessment task: Reading skills of the participants is assessed with reading assessment tasks (word reading and non-word reading) in the required language. All the tasks are age appropriate. The participants are required to read the words aloud.

Rationale: Word reading task administers the reading skill with familiar words in L1 and L2 languages separately. The Pseudo word Task is used as a measure of phonological recoding skills and the ability to apply grapheme-

phoneme conversion rules. Here, accuracy in terms of number of words correctly read and time taken to read the words appear as measures of performance.

Reading comprehension

Reading comprehension assesses language acquisition as it is a major component of literacy skill acquisition with respect to reading. The participant is individually presented with an age appropriate passage in Hindi and English. The participant is required to read the passage aloud followed by five questions based on the passage. Accuracy with respect to the answers to the questions and mean reaction time taken to respond to each question is taken as measures of performance on reading comprehension task.

Phonological awareness

Phonological awareness is an important variable of speaking and reading. There are various subtests that are useful in assessing the level of phonological awareness.

Phoneme deletion: This task consisted of words verbally presented one at a time. The task is to delete a given sound in the word at the initial middle and terminal level and give the remaining word.

Phoneme oddity: Phoneme oddity task consisted of a series of three words verbally presented to the participant. The task is to identify the odd word out whose sound did not match the sound of the other two words in a set of three words.

Syllable deletion: This task consists of bi-syllabic words verbally presented one at a time. The task is to delete a given syllable at initial or terminal level.

Phoneme identification: Recognizing the same sound in different words.

Phoneme blending: Listening to a sequence of separately spoken phonemes and combining the phonemes to form a word.

Phoneme segmentation: Breaking a word into its separate sounds and saying each sound as it is tapped out, counted or signaled.

Phoneme addition: Making a new word by adding a phoneme to an existing word.

Phoneme substitution: Substituting one phoneme for another to make a new word.

Similarly, there are lot many other measures used in various studies to diagnose the language related problems in normal as well as in mentally weak people and are proved to be useful and essential in measuring the other variables of language functioning.

Conclusion

The main subject of the present paper is to review the functioning or the role that the first language (L1) plays on the functioning of a second language (L2). The conclusions which we draw after reviewing the above mentioned studies is that the first language interferes in the acquisition of the second language and it is applicable universally. Cross cultural studies (Ransdell, 2003) also showed that Asian students (Chinese, Indian and Korean) felt more difficulty in English phonological awareness tasks than native English speaking students. The reason behind this could be various like:

1. While learning second language (L2) alphabetical shapes and structures of first language (L1) would create interference;
2. In schools, teachers might not appropriately make them do practices or exercises in the Acquiring (L2) language;
3. Medium of instruction and communication in schools or colleges are mostly held in first language. Therefore, they do not get enough exposure to acquiring language. Monolingual and bilingual students were compared with respect to grammar awareness, reading comprehension and phonological awareness skills. The result showed that monolinguals students were better in English receptive vocabulary, reading comprehension and writing fluency. Nevertheless, in English grammar awareness, phonological awareness, expressive vocabulary, vocabulary density and writing quality both the groups were equivalent. This showed that bilinguals despite being proficient in two languages (L1 and L2) do not completely excel the monolinguals in reading-writing related skills. After analyzing the primary variables in a broader way, they proved their contribution in bilingual students' academic and career success (Ransdell, 2003).

India is a country where different languages are spoken in different regions. In Punjab people speak Punjabi, in West Bengal Bengali, Tamil Nadu Tamil, etc. Thus it is known as a multilinguistic state. But Hindi is considered as a national language of India so every citizen knows it. In this way most of the people here are multilinguals (knowing more than two languages). We see this in terms of cognitive functioning knowing more than one or two languages work as an overload to a mind. The experience or knowledge, which a person has about his mother language (L1), would definitely be going to interfere in the learning of second language (L2). Various

theories and studies have been conducted to show that there is a number of lexical space or box(es) in the mind in which the words of the particular language gets stored separately and the mind uses them according to situation or requirements (Allport and Funnel, 1981; Monsell, 1987; Baddeley and Hitch, 1974). For example if we talk about Assamese language, there is no such letter or sound like "s" whereas in both Hindi as well as English this letter is present. This would create confusion to the mind of an individual who knows these three languages. The errors he would show in the form of delays he would make while reading, writing or speaking; misplacing of letters; lack of clearance in speech or grammar, etc. This could lead to more extreme level if a person tries to learn second language in or after late childhood. Then further studies have been conducted with FMRI (Functional Magnetic Resonance Imaging) and ERP (Event Related Potential) tools to locate the brain regions or area, which are involved in language functioning such as reading, writing, speaking, recalling names, picture recognition, etc. However, as we know that "practice makes perfect" so there are various trainings and techniques with the help of which an individual undergoes training to learn second language in a successful manner and can speak fluently in both languages.

One aim of this review study is to know about the difficulties and obstructions that an individual faces while learning the second or a foreign language. This early identification would help in coordinating appropriate intervention programs in learning second language without any errors. In addition to this, brain imaging techniques are like a blessing to language research as we can recognize a brain region responsible for a particular language functioning. At last finding an individual performing poor he is provided training by giving an appropriate task.

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