CHAPTER VI

A COMPARISON OF THE ACQUISITION OF PHONOLOGICAL PATTERNS OF ENGLISH AND HINDI

6.1 Similarities.

6.2 Contrasts.
6.1 Similarities

In case of Hindi the alphabets are non-arbitrary, i.e., the symbols or alphabets represent the sounds of the phonemes. The child acquires these sounds at the babbling stage and after that it comes in contact with the words having similar sounds. These words, help the child in stabilizing the impressions of the sounds on the acoustic organs of the child. The elders in the family observe the child’s lip movements and hearing the sounds articulated by it, they begin to give a feedback with similar sound. The babbling - [ba:baːbɔ́ːbaː], [ɔ́bɔ́bbaː], [pɔ́pɔ́ppaː], [mɔ́mmɔ́m] and the like resemble [baːbaː], [pəːpaː] and [mɔ́mɪː] or [maː] respectively. Thus the elders reinforce the child with similar words. On hearing the same sounds the child starts controlling its production in the same direction.

Out of the sixteen plosives, both voiced and voiceless, the child begins with the voiceless and voiced unaspirated ones at the bilabial point of articulation, viz., /p/, /b/. The bilabial nasal /m/ is also acquired early. And the sequence follows. By the time the child starts acquiring English phonemes, rather alphabets, it has already well realized and stable bilabials in its L1 repertoire.

/p/, /b/ and /m/ stabilize by the middle of the second year, i.e., the child starts producing them in all positions, except in clusters of L1. A few words from L2 also enter the child’s repertoire.

/p/ is not aspirated in Hindi while it is in English. At times through conscious effort on the part of the child, /p/ gets aspirated in the initial and final positions in L1, more frequently in the final position. There is an audible release of air after the lip contact is released suddenly. This aspiration may be the one required in word initial positions in L2. But while acquiring L1 the aspiration at initial position is heard only when the child is unable to find or articulate the following phoneme. There is a block and this results in release of the contact and the child again begins with /p/. But this aspiration is not retained by the child as it is not present in the speech of the elders. The child learns its English alphabets from the Hindi speakers who do not have aspirated /p/ initially, thus no chance for the /p/ to get aspirated in L2.

/b/ is usually devoiced in the early stages because the early phonemic patterns are reduplications, viz., /baːbaː/, where voicing is not essential. Voicing is
acquired with L1 vocabulary. In emphatic speech voicing is audible. By the end of the second year the child has many words with /b/ and also /m/. The voice of Hindi /b/ is so intense in initial and intervocalic positions that once established, it is also audible in English words with /b/ produced by the child. Voicing is so intense in L2 that /b/ is audible in the final [-mb] clusters where the foreigners drop /b/, as in /lamb/ - /ləm/, /kəumb/ - /kəum/. The child may also imitate the models producing final /b/ in [-mb].

The bilabial nasal /m/ poses no difficulty in getting transferred from Hindi to English patterns. The word /mʌmi/ is very common in Hindi speakers. The word /mʌmi/ is of L2, but in emphatic or emotional articulation an extra /m/ is added, as [mʌm mi:]. This form is retained afterwards. In high society [mʌmi] or [mʌm] is in fashion.

Since /p,b,k,m/ are readily used by the adults while teaching English the child has no need, and no model to catch up with the aspiration of /p/ or /k/ which is associated with English words. It readily used unaspirated /p/ and /k/ in English.

/t/ and /d/ of L2 have similar phonemes in Hindi. The child begins with dental /t/ and /d/. Retroflexion is acquired in the fourth and fifth year and then /t/ and /d/ enter the child’s idiolect. In between it has allophones of /t/ or /t/ ranging from dental to strong palatal type. The dento-alveolar allophones are the easiest ones and they are retained by the child, both in Hindi and English. Allophones of both /t/ and /d/ are present for /t/ and /d/. Until the child attains the required phonemes it uses the same allophones for /t/ and /d/.

According to Chaturvedi,

...the substitution of the English dental fricative /θ, ð/ by Hindi dental stops /h, h/ can be regarded as quite satisfactory, as the English alveolar stops are never confused with these phonemes by Hindi speakers.  

The child imitates the L1 speakers’ /h, h/ in its own idiolect. /h/ of Hindi substitutes for /ð/. The dental phonemes are never purely dental. The child also has allophones at dento-alveolar region. In the environment of English phonemes the quality of /h/ may have slight fricativity which can be considered as allophonic if used in Hindi.

Fricativity is the feature that the child has to acquire to use /h/ correctly in English phonemic structures. As the functional load of /h/ and /θ/ is minimum and in
the early stages, allophones of /h/ and /d/ are used, possibilities are more to use either phonemes; /h/ or /θ/, /d/ or /ð/ in the two languages.

/k/ is readily used in English Vocabulary of the child as the similar variety is used in both the languages. So, /k/ of L1 gets easily established in its English corpus. By the time it acquires its L2, the child has a fully realized /k/.

Similarly /g/ is velar and voiced in both L1 and L2. Except for the strong voicing of L1 /g/ other features are the same. The child acquires a simple /g/ and voicing is acquired gradually. A very strong /g/ is not heard in the speech of the adults and it is absent from that of the child too. Thus /g/ of L1 is easily adopted in L2.

The nasal /n/ gets velarised before a velar stop in L2. So is the case in L1. But the functional load of /ng/ is not high. In L1 the child retains the final /g/ after /ny/ and this tendency is also observed in L2.

According to Chaturvedi;

The Hindi post-alveolar /Tʰ/ and /D/ may be considered as nearest tolerable substitute for English alveolar /θ/ and /ð/ respectively.²

In the case of the child the case is just opposite. The child has alveolar /t,d/ which are quite tolerable for post-alveolar /t/ and /d/.

Affricates enter the repertoire of the child at around the third year. Before this it has /t/ or its allophones or /c/ derived from /t/ in place of true /c/. The same are used in L2. The end of the third year or beginning of the fourth year shows dento-alveolar /c/, with the tip of the tongue striking back of the upper teeth and the front of the tongue striking a small alveolar region. This is actually a variant of L2 /h/ which is used by the child in L1. In some cases this articulation is not acquired because it requires the tongue to move backward on the roof of the oral cavity, which is not deemed essential, as far as, a simple allophone or /h/ is available.

The tongue makes frequent contact at the dento-alveolar region, or at the alveolar region. The allophones of /d/ at this place are used for both /f/ and /d/. Since /d/ occurs at alveolar region it is more readily acquired by the child and used in its L1. As in the case of /h/, the tongue may sometimes give the palato-alveolar /f/, it is not a general case. Thus, here also the shift is from L2 /d/ to L1 /f/.
/s/ is not present in the repertoire of the child even at the end of the third year. But the child starts realizing its presence in the phonemic structure of the word. It tries to model the adults’ articulation of /s/ but in vain. Each time it produces a sound in between /c/ and /cʰ/ which is realized by the parents as /s/. But on close examination it is a sound derived from somewhere between /c/ and /cʰ/, used in initial place. Word medially it uses /ʃ/. After getting tired of producing /s/ for the examination the child may get irritated and just say [ha: ‘c’].

In English the same allophones are used. In the middle of the fourth year, the child has /s/, a prominent one applicable in L1 and L2. It is strongly fricative in initial position in L1, while mildly in L2. In early stages /ʃ/ is used to give a starting kick to the initial /s/ in cluster /sk/ as in [isku:l]. It also maintains the fricativity of /s/. These features are noted both in L1 and L2.

/ʃ/ is similar in L1 and L2. It is acquired not before the end of the fourth year. /s/ replaces it in both the languages. The child senses its presence in the words but is unable to get the palato-alveolar sound with fricativity. Thus /s/ or its allophones are used. Even in the adult’s case /ʃ/ is substituted by /s/. The correct /ʃ/ is getting extinct. Thus the child gets less chances to hear /ʃ/. It may learn /ʃ/ in Varnamala, but in practical use it is simplified to /s/.

/m/ gets fairly stable in the very first year as it is included in the very first words acquired by the child. The Hindi nursery rhymes have high frequency of /m/ and it gets easily established. By the time /m/ occurs in English phonemic structures, it is distributed in all positions, in all vocalic and consonantal environments. In English its frequency is low yet it easily gets established in its corpus. In L1 the speakers have a tendency to pronounce all the phonemes in a structure. This tendency is retained in case of L2 also. So in /læm/ and /kʌm/, the child has /læm/ and /kʌm/ because it models its L2 patterns on of Hindi speakers.

In the second year the child has alveolar allophones of dental /n/ in L1 vocabulary. Dental /n/ is a rare case even in the adults’ speech. Though it may be produced in emphatic speech. The allophones are either dento-alveolar or alveolo-palatal. Slightly palatalized /n/ is also a possibility in the negations [nɔːn] or /nɔː/ [no]. Before the velar/n/ gets velarized as in /tʃɪŋ/,[sing], and the final stop is retained in both L1 and L2,
in monosyllables by the child. In case of polysyllables and disyllables /n/ may be repeated to fill the absence of an unaquired phoneme usually in clusters as in /sneik/ - [i'nneik].

The velar nasals appear late. The child never senses a velar nasal in its L2 patterns, but in L1 it gets its knowledge while learning the Varnamala.

/l/ is similar in both L1 and L2. Idiosyncrasies play a major role in the correct acquisition of /l/. The voiceless dento-alveolar or alveolar allophones with slight or strong laterality are acquired by the child in the early stages, but the fully voiced type is available by the middle of the third year. However, the place of contact of the tongue during its articulation keeps changing. Laterality is a preserved feature. /l/ keeps substituting for /r/ in L1 and L2 in all positions.

As the child has a tendency to retain final /l/ in L1 it does so in L2 also. However in clusters, as in ['litl], it inserts a reduced vowel to retain the syllabic /l/; ['litl], /l:gl/ - ['il:gl]. Thus in L2 dark [H] is absent as the child always has a clear /l/ to use. In Hindi the unreleased allophone of /l/ is also noted.

The lateral allophones of /r/ are acquired by the beginning of the fourth year. In early stages /l/ or its allophones keep substituting for /r/ in L1 and L2. In the first quarter of the fourth year /r/ like /l/ is heard. The /l/ replacing final /r/ is corrected first, then the medial, and finally initial /r/ is corrected by the child. Same is the case in L2. Though the child senses the presence of /r/ in the word yet its immature organs debar it from producing it.

The alveolar /r/ of L1 is acquired which replaces the post-alveolar /r/ of L2. While playing with the words, the child may produce various variants of /r/. r-colouring and rolling /r/ can also be derived from /l/. But only exceptionally. /r/ appears to be derived from /l/. And this is a long process since the child keeps on using /l/ in place of /r/ for about one-and-a half year in L1 and L2.

The child produces the roaring or retroflex sounds when it drives its toy-cars and this being a popular game among the children whereby the tongue gets used to trills of /r/. This retroflex variety is not common in speech, only a slight vibration of the tongue is necessary which is acquired by the child for both L1 and L2.

/j/ stabilizes early. /e/ or /ei/ are the allophones which substitute for /j/ in L1 and L2. In L1 the functional load is higher as compared to L2. Thus in L1 /j/ is easily
adjusted, while in L2 the clusters of a consonant + /j/, are inserted in between with a reduced /i/. /j/ may be dropped in both the languages by the child if it is followed by /æ/ or /a:/, but only in initial stages. In L2 the child accompanies friction with the articulation of the phonemic structure /jes/, in emphatic response.

In case of /v/ its early substitute is voiced bilabial plosive /b/ which is used in L1. /b/ is retained in L2 also in place of its frictionless continuant /w/. However, allophones of all types at bilabial and labio-dental levels are available, all of which can be used in the same word at different occasions. The observable feature is lip rounding which may be completely rounded or may be spread. At times the lower lip may slightly touch the upper teeth as in case of L2 labio-dental fricative /v/. The characteristic fricativity is absent from /v/.

Thus L2 has two phonemes a labio-dental fricative /v/ and a bilabial frictionless continuant /w/. However, allophones of all types at bilabial and labio-dental levels are available, all of which can be used in the same word at different occasions. The observable feature is lip rounding which may be completely rounded or may be spread. At times the lower lip may slightly touch the upper teeth as in case of L2 labio-dental fricative /v/. The characteristic fricativity is absent from /v/.

Thus L2 has two phonemes a labio-dental fricative /v/ and a bilabial frictionless continuant /w/. But /v/ is absent from the speech of adults. Even /w/ is hardly rounded bilabial. It is usually replaced by /b/. In the case of L1 /v/ the adults substitute it with closed bilabial plosive. In both the cases the child is devoid of the correct knowledge given to it by the adults. In L1 atleast the child comes across /v/ in the Varnamala but by that time it has a well established /b/ in place of /v/. However it may replace it in some place with /v/ or may retain /b/. In L2 the child learns the phonic drills and alphabets, not sounds, for e.g. [bʰiː] for bʰeːn or ben], [dɔðu] or dɔðļu for bɔːl]. It does not understand that [bʰiː] or dɔðlu] stand for a particular sound in ‘van’ or ‘watch’,respectively. The correct articulations for the child are not in models of L1, for L2. Even in school the emphasis is given on grammar rather than on speech.

Thus the child has a large portion of its corpus attributed to /b/ as it is the simplest and easily available substitute for /v/, /w/ and L1 /v/. Allophones may exist in later speech also, but chances are rare.
/ə/ is the earliest sound to get established in the child’s repertoire, with its various allophones in length and manner of articulation. The central low unrounded vowel is easily established in L1. It is the sound which substitutes for other vowels or glides. The long /a:/ comes along with it. In between come several allophones varying both in manner and place of articulation. Being an active linguist the child can be thought of having /ʌ/, /ə/, /a:/ and other allophones at its disposal. The reason being its flexible, untrained muscles.

In case of adults acquiring L2, they have rigid muscles which are adopted to only /ə/ or /a:/ of L1. But the child can explore any variety of /ə/ at any place. Thus it cannot be said that /ʌ/ is absent from allophones of /ə/. Only /ə/ and /a:/ are retained. Finally when the child begins with L2 it substitutes /ə/ for /ʌ/ as it hears it from adults. But individual differences cannot be ignored. Chances are there for the child to retain /ʌ/ or acquire /ʌ/ as an allophone of L2 /ə/, where it has the models producing /ə/. According to Chaturvedi in stressed positions the Hindi speakers will use /ə/ only, as /ʌ/ does not exist in Hindi. But it is different in the child’s case.

In case of long /iː/ and /uː/, Chaturvedi says that the /iː/ and /uː/ of English are more or less of equal height, like those of Hindi and it is independent of their length. The child acquires /iː/ and /uː/ of L1 and by the time it starts acquiring L2 it has stable /iː/ and /uː/ which are readily used in L2, except that the phonemic environment changes for them.

In case of short /i, u/ also the child begins its L2 with well stabilized short vowels in L1.

The child acquires the following varieties of /e/: a neutral short, open short, open long, close long and rounded long. Thus the child has an English /e/ some where in the above stated allophones. As the allophones of vowels are occurring at a stage when the child begins with L2 the most suitable variety, available, can be used in English phonemic structures.

As in Hindi, short /i/ can be heard in place of /e/. Even diphthongs are in place of /e/ in L1 and L2. This shows that /e/ is acquired early but it takes time to become stable. Later short close, long close, short rounded allophones of /e/ can be noted in interjections. The phonetic realization of /e/ is attained at the beginning of the fourth
year, the age at which it has considerable vocabulary of both L1 and L2. Thus it is
difficult to say whether the child is using /e/ or partially similar /ə/, as a number of
allophones are emerging in its idiolect.

/e/ of L1 has an allophone in the front region which is more similar to
/ə/ of L2. Since the allophones keep fluctuating while the child is acquiring L2 and this
front allophone facilitates the stabilization of /ə/. The slight /ɪ/ like sound heard in /e/ is
eliminated by the child. The position of tongue is below half open in /ə/ while in /e/ it is
slightly raised.

/o/ is mid back as compared to L2 back /ɔ/. Since /o/ and its allophones
are acquired in the middle of the second year, the back /ɔ/ of L2 is also a possibility.
However the child gets accustomed to back /o/ as its functional load is very high in
Hindi verbs. The L2 /ɔ/ being back is usually not used even by the adults having the
habit of /o/.

In the earlier stage /o/ may be replaced by /u/ or /u:/ and vice-versa as in
/do/ : [du]. Even in L2 such cases appear as in /fur:d/ : [fʊd], /pul/ : [pʊl]. In
monosyllabic drills, /hʊt/, /pʊt/, /dʊt/, /mʊp/, /ɔ/ is realized as a back vowel but in
polysyllables the case may be different.

As the child is having the sucking experience, it has a strong tendency for
rounded lips. Thus when /u/ or /u:/ replace /ɔ/, it is the rounded allophone of /u/ or /u:/.
It is irrelevant to make distinctions even at the age of three.

/u:/ of L1 easily gets adjusted in the English environment as there is
slight difference in their articulation in terms of lip rounding but such minute differences
are not observed by the child. It may imitate the strong roundness of lips but it returns to
its L1 /u:/ in L2 idiolect.

Gimson delineates the possibility of treating /ə/ as an unaccented allophone
of /ə/. /ə/ occurs in the early stage while /ə/, which is long and the length is r-coloured is
not acquired by the child, rather it has /ə/ + /t/ or /n/ in place of /ə/. The adult speakers also
retain /t/ in all positions. Before the child acquires /t/ it realizes its presence and substitutes
/n/ or its allophones in place of /t/, while acquiring L2 the child has no /t/. Thus /n/ is used in
words, like /bəd/ → [bəd]. Thus /ə/, even if it gets a chance to enter into L1 repertoire is
not practised and is dropped. But it may remain if the child gets a practice in it.
Diphthongs

According to Chaturvedi (1973), the diphthongs /ei, ai, au, ɔːi/ of English have phonetically more or less similar equivalents in Hindi, i.e., /e:i, a:i, a:u, oːi/, but these are phonemically a sequence of long vowels /eː,aː,oː/ plus non-syllabic /i/ and /u/. In Hindi, as R.C. Mahrotra (1963) states, the diphthongs have a vowel followed by a semi-consonant /i/ or /u/. In English the diphthongs are derived from two vowels. In Hindi glides are induced in the long vowels themselves and are represented by the alphabets. Whatever the case may be the child has no glide in its nonsense-productions which may also be the ones required in L2.

Just like the vowels, the diphthongs keep fluctuating. By the time the child begins with its L2 the glides are there to get established in its new phonemic patterns.

/ei, ai, au, ɔːi/ with their variants are used as interjections. /ɔːi/ can be heard in sentences like [ɔː nu sɔːi], [ɔː nu rɔːi]. /ɔːu/ or a similar sound is used while learning [ɔː u ʌrɛɾ xa:]. But, otherwise /ɔːu/ is always replaced by /o/ both in L1 and L2.

/au/ is generally used in the nursery forms [hau] or [haːu], used to frighten the child. Its frequency is quite enough for /au/ to get stable. And it is noted that in [maːus] and [haːus] it produces it easily.

6.2 Contrasts

Dissimilarities are observed in case of the extra phonemes of L1 which are not present in L2.

The voiceless aspirated bilabial stop /pʰ/ of L1 is acquired in the early vocabulary of L1. It gets fairly stable by the time the child begins with L2. In L2 an aspirated allophone of /p/ is essential in RP, in the word initial positions. But as Indian speakers do not realize it, the child gets no chance to hear it in the speech of the elders. Had it been the case the child could have easily used /pʰ/ in its place. A slightly aspirated /p', may be an allophone of /pʰ/ is noted in the second year. But it is not stable. Thus the child has an aspirated bilabial /pʰ/ in L1 but aspiration of /p/ is not realized.
As in the case of /pʰ/, the aspirated /kʰ/ has strong aspiration, which is more than enough for the aspirated allophone [k] of L2. But aspirated /k/ is absent from the speech of elders thus the child gets no chance to imitate it in L2.

/dᵉ/ , /dʰ/, /gʰ/ are absent in L2. However they are at its disposal to be used in L2 patterns, if it finds the need because it is an active linguist.

In case of affricates, the palatal /ʃ/ is not acquired by it even at the end of the fifth year. Though there is a possibility to acquire it but there is no model for it to imitate, as /ʃ/ has been replaced by /ʃ/ or /s/ in L1.

/θ/ and /z/ are not available in L1 and the child, unless it is pointed out, is unable to differentiate /θ/ , /θ/ and /z/.

/h/ becomes stable in the beginning itself, as a voiceless allophone of /h/ in L1. This allophone is actually similar to the voiceless /h/ of L2. In L1 /h/ is restricted to initial and medial positions while in L2 /h/ occurs only initially. The functional load of /h/ in L1 is more than that in L2. When characteristic voice gets associated with /h/, at school level, it gets transferred to that of L2.

Differences are seen in case of L2 /iə/, /eə/ and /uə/, which are usually not heard in L1. /ɛə/ or /eə/ is generally heard in interjections.

According to Chaturvedi /ə/, /ʌ/ and /iə/, /eə/, /uə/, /ʌə/ are dissimilar because they are possible neither formally nor functionally in Hindi. In the case of the child, is does not have well established phonemic patterns. Thus sounds keep changing and it is possible for it to produce glides and vowels of all sorts. It is very difficult to monitor all the sounds produced. It is thus misleading to say that some sounds are not possible for the child while others are. The vowel-habits become limited to its L1 and only the sounds required are practised while others are dropped.

In case of clusters, the frequency of L1 clusters is higher than that of L2. A very simple reason is the acquisition and use of L1 much before that of L2. Both have C₁ C₂ clusters and very rarely C₁ C₂ C₃ and others.

Both show the similar patterns as follows:

- Stops + r/l
- Stops + nasal
- Nasal + r/l
- Nasal + voiced /voiceless stops
Lateral + stop
Lateral + fricative
Trill + nasal
Trill + fricative
Fricative + voiceless stops/nasals/lateral.

Clusters pose a major problem while dealing with their similarities and contrasts in L1 and L2. Similarities are few as compared to contrasts. The child as it begins with L1, is in full touch with it, rather its environment is full with L1 patterns. The various C1C2 patterns are heard by it frequently and it acquires them. In case of L2, it is an occasional language. Only with special attention given by the parents the child acquires its L2 and its use is limited to the lessons given by them. The words that the child learns or acquires, if used in fluent speech are used along with L1. Thus patterns C1C2 are accommodated in a different environment. In case of L1 the child has to produce all the phonemes in a phonemic structure. But in L2 the syllabic positions are to be maintained which are not present in L1 adults. Vowels are used instead. This tendency is retained in L2 also, where the child has very few examples to practice its creations.

Since L2 phonemic patterns are not heard frequently the vocalic or consonantal environment is not fully recognized by the child. Thus it is unable to control its organs to produce C1C2 or other clusters in L2. The tongue always takes help of a short vowel to begin the next consonants. This is noted in L1 also, but such instances are few to be mentioned.

L1 has consonants widely spread at all levels of articulation. The sequences are such that a series begins with the easiest articulation and proceeds to the toughest one; as in dental /t/ to /tʰ/, /t̪/, /t̪ʰ/. The child starts adjusting with the clusters at the easiest points of articulation and if it is to be replaced it does so if it hears it in its models.

A notable difference is in clusters with frictionless continuants whose frequency is more in L2 than in L1. And in L2 itself /ə/ is more affiliated to form clusters.

References:-
2. Ibid, p. 92.