Word Accent in English Spoken by Students of Engineering in India: A Pedagogical Perspective on Intelligibility

Maruthi Kumari Vaddapalli, Ph.D.

Abstract

The main purpose of the study is to look at the word accent of the English spoken by engineering students in India since Indian English is emerging as one of the varieties of world Englishes. Speech samples of ten engineering students were obtained for this purpose. It investigates the word stress patterns and deviations of word stress from Received Pronunciation and its impact on intelligibility. No specific pattern of divergences in placing the stress in words emerges which reflects the lack of explicit knowledge and awareness of English word stress. In order to overcome difficulties in placing word stress in English, it is recommended that a systematic course, involving the introduction of stress rules, ear training and production practice be given to engineering students of Andhra Pradesh in India.
The world is becoming a global village and the English language is bringing the world together. There are historical, economic, political, and academic reasons that English has been established the de facto world language. Whatever may be the reasons for the spread of English, it is now evident that it has become the global lingua franca. The flexibility of the language has facilitated a tremendous growth in the field of communication all over the world. David Crystal (2003) considers English “the world’s first truly global language. According to McArthur (2004), the English language is undoubtedly the world language due to the number of people who use English. He presents us the facts that English is being used in more than seventy countries as an official or semi-official language. The English language plays a significant role in over 20 countries. One billion people in India alone use English out of 1.4 billion users of English worldwide.

**Impact of Globalization in India**

India has become one of the best destinations for outsourcing business due to its English speaking manpower. Many qualified Indians work for IT companies and Business Process Outsourcing. Since the language used in these businesses is English, it has become vital that graduates in India have good communication skills. In today’s world, it is a well acknowledged fact that effective communication goes hand in hand with technological advancement. These days, most Indian companies hire language trainers and accent trainers to improve the communication skills of their employees. They conduct continuous language training programs in order to improve the language skills of their employees. English speaking skills have a major role in the economic advancement of the country.

‘*Good*’ and ‘*Bad*’ English

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There are many varieties of English in the world which include both native and non-native varieties. Kachru (1992), divides world Englishes into three concentric circles. According to Kachru, native varieties of English, i.e. English spoken in the USA, the UK, Canada, Australia and New Zealand, form the inner circle. The non-native varieties of Bangladesh, Ghana, India, Kenya, Malaysia, Nigeria, Pakistan, Philippines, Singapore, Sri Lanka, Tanzania, Zambia form the outer circle while the English spoken in China, Egypt, Indonesia, Japan, Israel, Korea, Nepal, Saudi Arabia, Taiwan, USSR, Zimbabwe form the expanding circle. The Englishes of the inner circle are the standard or accepted varieties of English that are prestigious. However, the outer and expanding circles don’t enjoy the same status.

According to DSouza(1999), though the Englishes of the outer and expanding circles are not bad Englishes, they don’t enjoy the same prestige as the native varieties. Since these are deviant from the native varieties, there is often a problem of intelligibility. Jones (1956), says that “a person’s speech is good when it is clearly intelligible to all ordinary people and it is bad when the speech is difficult for most people to understand”. He further states that “A person may speak with sounds very different from those of his hearers and yet be clearly intelligible to all of them, as for instance a Scotsman or an American addresses an English audience with clear articulation. Their speech cannot be described as other than ‘good’”(pp. 4-5).

**The Concept of Intelligibility**

Catford (1950) argued that an utterance can be considered intelligible only when it is “effective.” This means that the listener and the speaker should respond to each other appropriately to the situation. According to Catford, the term ‘intelligibility’ can be used only
when the speech is both intelligible and effective. Bryan Jenner (1989) defines intelligibility as “what all native speakers of all varieties have in common which enables them to communicate effectively with native speakers of varieties other than their own”. As English is being accepted more and more in the world, it is obvious that there is greater scope for exchange of speech among peoples of the world. Kenworthy (1950), put forward the concept ofcomfortable intelligibilityas a suitable goal for the majority of learners. The term is self-explanatory, but does not actually specify which features of English pronunciation need to be learned in order to attain this intelligibility.

Bryan Jenner(1989) considered a set of factors of English pronunciation essential for intelligibility anywhere in the world calling those factors as Common Core. Jennifer Jenkins (2000) modified the Common Core so as to take the reality of English as an International Language (EIL) into account. The resulting lingua franca Core identifies 7 areas in which it is essential to eliminate error in the students’ pronunciation. They are vowel quantity, consonant conflations, phonetic realisations, consonant cluster simplification, prominence and weak forms, tone groups, and nuclear/contrastive stress but not tone.

For intelligibility, Robin Walker (2001) recommends “good vowel length, good pronunciation of most of the consonants, good handling of clusters, the avoidance of incorrect deletions, prominence and good tonic stress” Walker’s work focused on pronunciation and the appropriate use of tone groups.

Linda Shockey (2003)in her work Sound Patterns of Spoken English says “Conversational speech processes are partially conditioned by the phonetic nature of surrounding segments,
but other factors such as stress, timing, syllable structure and higher level discourse play a part in nearly every case.”

Features of Indian English

English is spoken in India by a wide variety of people. There are different kinds of Indian English. Some of them are mutually intelligible and some are not. Jenkins (2005), mentions the demographics of English speakers in India. It is astonishing that there are about 37 million proficient English speakers in India and about 200 million Indians with some English language skills. She also mentions that due to the influence of local cultures, Indian English has evolved its own characteristics. This evolution is due to the existence of various Indian languages and social conditions that have had a great influence on English language. Indians learn English from Indians, which is one of the reasons that Indian English is evolving as a variety with its own distinctive features. For example, Bansal (1969) highlights major differences in phonetic deviations. He states that Indians do not use aspiration word initially. As a result, words like ‘pen’ and ‘cup’ are usually unaspirated by Indian speakers unlike native speakers. Secondly, the voiced and voiceless alveolar consonants are pronounced as retroflex consonants. In addition, dental fricatives in words like health and that are pronounced as alveolar plosives. He also observed the use of bilabials in place of fricatives.

Another characteristic of the pronunciation of Indian English is spelling based pronunciation. In Indian languages, there is a close connection between spelling and pronunciation and they have one to one correspondence between letters and sounds unlike English. David Crystal (1987, p.214) reports that about 400 or so most frequently used words
in English have irregular spelling which makes it difficult to learn the spelling and pronunciation of English language.

**Intelligibility of Indian English**

As there are many Indian languages, their influence on English hampers the general intelligibility of Indian English. Such influence is normally called MTI (mother tongue influence). Universities, colleges and multinational companies are working towards accent neutralisation so that the English of Indian speakers will become globally intelligible. For instance, when an employee working for a multinational company interacts with a person from another part of the world, it is important that his accent is neutral and intelligible so that there is effective communication.

Bansal (1969) says, “English spoken in India does not differ radically from native English in vocabulary and grammar, though there are some well-known differences. In pronunciation, a large number of people deviate from both British and American English in a number of ways.” He further states, “As language is primarily a means of communication, we must ensure that we retain at least those features not only phonological and phonetic, but also those related to clear, articulate speech in the absence of which mutual intelligibility is likely to be affected.” Other features that cause unintelligibility to a native speaker are stress and intonation, the supra-segmental features of utterances (Balasubramanian, 1988, p. 131). According to Balasubramanian (1988, p. 131) “anyone using English should learn and acquire the supra-segmental features of native English.
Importance of Word Stress

Like every other language, English words consist of syllables. The vowel sound in each syllable forms the centre. In words with two or more syllables, one syllable is stressed or pronounced with greater prominence. The stressed syllable is called the accented syllable. Peter Roach (2000), in his work on word stress, categorizes four factors that are important in syllable stress. These are the loudness, length, pitch, and quality of the syllable.

It is generally accepted that word stress causes a great difficulty to non-native learners of English. Since it is difficult to predict which syllable of a word is stressed, it is important to learn the placement of stress when learning the word itself. Bansal (1969) states that “A very common fault among Indian speakers is the incorrect stressing of English words, that is different from the usual RP or the pattern of other native varieties”.

Importance of English for Engineering Students in India

There is an acknowledged need for students of engineering to acquire language and communication skills in order to be effective as practising engineers in the global industry. Recruiters may prefer the student who demonstrates the ability to communicate with others and to organize time and work. With the software industry growing by leaps and bounds, there is a greater need for the students of engineering to acquire effective communication skills so that they can step directly into positions of responsibility in the industry. The following excerpt of an article written by Chandra Kanth (2007) from a popular newspaper (The Hindu) clearly shows the state of engineering students in India.
“This issue of employability of engineering and other students has become a talking point. A McKinsey Global Institute study on the emerging global labour market has pointed out that the multinational companies in India find only about 25 per cent of the engineering students who graduate every year falling in the "employable" category. That means the rest need to upgrade their technical as well as soft skills, suggesting that the educational system could be overhauled significantly to cater to industry requirements.”

The Study

The aim of the present study is to analyze word stress patterns in the English spoken by engineering students in India and its impact on intelligibility in order to see the levels of intelligibility of Indian students leaving colleges and seeking employment. The analysis is intended to reflect the present state of spoken English of engineering students, so that remedial measures or steps for improvement can be suggested.

For historical reasons, India has had longer association with British English than any other variety. This model is well described in many books including the English pronouncing dictionary available in the market. By and large, the education system in India follows the British model.

Because British Received Pronunciation (RP) is widely accepted and easily understood worldwide, this model was selected as standard for comparison.

Method
The speech of ten randomly chosen students of a final year engineering course was recorded and divergences from RP were analyzed. The speech samples were played to listeners from a wide range of backgrounds. The listeners were asked to give their feedback.

Participants in the Study

For the present study, ten students in a final year engineering course were chosen as speakers. The sample was viewed as adequate as a representative sample of Engineering students’ English.

The ten speakers include both male and female speakers from different colleges in Andhra Pradesh, India. All participants ranged from 18 to 22 years of age. Their learning background and environment was homogeneous. Their mother tongue was Telugu.

Test Material Used for the Study

The data comprises speech samples obtained from final students of engineering from various engineering colleges in Andhra Pradesh, India. The test material used for the study was a set reading passage. The passage includes all the 44 RP phonemes of English with different types of words that are bi, tri, and polysyllabic. It was also ensured that the passage contained familiar words within the register of engineering. The passage is reproduced below.

“Engineering is bringing a global change. It gives shape to our world. Cars, computers, toys, bridges, aeroplanes are all products of engineering. Roller coasters, movie special effects and everything one can imagine is a result of engineering. Engineers can design, create, or modify everything we touch, wear, eat, see and hear in our lives. Their innovations safeguard national security, protect environment, and also improve health care. Engineers should work...
with dedication and precision. They are problem solvers who search for quicker, better and less expensive ways to use the forces and materials of nature to meet today’s challenge. No one can disagree that engineering is a marvel.”

**Recording Procedures**

All the speech samples were recorded by using a very good quality Sony TCS cassette recorder. A quiet room was chosen for recording at various colleges. The passage was typed neatly on a sheet of paper and was handed to each speaker. They were asked to read the passage as naturally as possible. They were, however, given a few minutes to look through the passage before reading. No interruption took place throughout the recording. Each speaker was asked to say his/her name before reading the passage.

**Listening Procedures**

Four groups of five each were selected to be the listeners. The first group comprised five foreigners of which three were native speakers of English and the rest from other languages, the second group had five prospective employers, the third had five members from general public and the remaining five were the teachers of engineering colleges of JNTU (Jawaharlal Nehru Technological University, Hyderabad, India). The teachers were chosen from JNTU as they are teachers of engineering in a sister university. All the listeners were graduates.
Care was taken to ensure that the listening sessions were free from noise that could affect the procedure. For the sake of convenience, the recorded data was transferred to a compact disc and a CD player was used for the listening sessions. The listeners were given a booklet of 10 feedback forms comprising questions on intelligibility factors and were asked to fill in the forms after listening to each speaker. On each sheet there was information about percentage of marks. Each speaker was given a percentage of marks as assessed by the listener. After listening to the speakers, each listener was asked to identify and indicate the best speaker and the worst speaker according to his/her estimation. The listeners were also given a form called ‘Particulars of the Listeners’ in which they had to fill in their particulars.

The listeners were clearly instructed on how to fill in the feedback forms before filling in their responses. They were asked to listen to each speaker carefully and give his or her responses before listening to the next speaker. There was a pause of a few seconds between playing each speaker to enable the listeners to fill in the feedback sheet concerned.

**Transcription**

The reading passage of each speaker was listened to carefully and a phonetic transcription of the data was made based on auditory perception. (see appendix for details). The validity of transcription was cross checked by a senior professor of phonetics and phonology at the English and Foreign Languages university, Hyderabad. Features of stress and intonation were marked even though the study is limited to looking at the patterns of word stress in the speech of these students.
Data compilation sheets of all the speakers were prepared based on the phonetic transcription of the reading passage. Divergences from RP in terms of word stress were described. It is convenient to describe the speech of a person in terms of divergences from a standard model. Divergences from RP in respect of word stress of each speaker were noted in the data compilation sheet.

**Divergences from RP - Word Accent**

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Word Accent

Word accent of the speakers was studied on the basis of the bisyllabic, trisyllabic and polysyllabic words present in the passage. Significant divergences from R.P pattern were noted with respect to word accent.

A close look at the table above gives us the word accentual pattern used by the speakers of the words in the passage.

The first column of the table indicates bi-syllabic, tri-syllabic and polysyllabic words, which are tested for word accent. The last column indicates the majority pattern of the word accent of the speakers.

It is observed that majority of speakers had word accent on the first syllable in almost all the words. 8 of the 10 speakers had stress on the first syllable in the word ‘engineering’. It is interesting to note that all the speakers were students of engineering and yet they could not pronounce the word ‘engineering’ correctly.

Words such as ‘global’, ‘bridges’, ‘roller coasters’, ‘everything’, ‘modify’, ‘safe guard’, ‘national’ etc. are stressed in conformity with R.P. pattern as they are stressed on the first syllable according to R.P. 9 of the 10 speakers accented ‘computers’ and ‘security’ on the first syllable. 7 of the 10 speakers stressed on the first syllable of the word ‘imagine’. The majority pattern shows that most of the speakers accented on the first syllable of all the words in the passage.

From this we understand that the speakers are totally ignorant about the English word accent and however they have a tendency to stress the first syllable of words.

Language in India www.languageinindia.com
12 : 3 March 2012
Maruthi Kumari Vaddapalli, Ph.D.
Word Accent in English Spoken by Students of Engineering in India: A Pedagogical Perspective on Intelligibility
Listeners’ Responses

Listeners’ responses offer us interesting facts. Since the listeners were asked to respond to the questions on meaning saying clear, unclear and not so clear, code x was assigned to clear, ‘y’ to not so clear and ‘z’ to unclear for the sake of analysis. On this scale, Speaker 10 scored 18 ‘x’s, 2 ‘y’s and no ‘z’s. He scored the highest number of ‘x’s which means that his speech was very clear. Table (Appendix-) gives the speech details of the speakers with respect to clarity of meaning. Hence it can be interpreted that the clarity of meaning of speakers 2, 10, 6, and 4 is good and that of speakers 5 and 7 is bad.

The listeners were asked to rate each speaker’s pronunciation on the scale-‘good’, ‘not so good’ and ‘bad’. For the sake of convenience, ‘x’ is coded to good, ‘y’ is coded to not so good, and ‘z’ is coded to bad.

Speaker 2 scores 15 ‘x’s and 5 ‘y’s with respect to his pronunciation and Speaker 1 gets 13 ‘x’s and 5 ‘y’s to his account. Speaker 6 scores 11 ‘x’s and 9 ‘y’s and Speaker 10 gets 12 ‘x’s and 8 ‘y’s to their accounts. Speaker 3 also gets 10 ‘x’s and 10 ‘y’s to his account. All of them had no ‘z’s in their account. Though speaker 4 gets 9 ‘x’s and 10 ‘y’s, he scores 1 ‘z’ too. Speakers 5, 7, and 9 score 5 ‘z’s, 2 ‘z’s and 3 ‘z’s respectively. Speaker 5 gets only 3 ‘x’s to his account whereas he gets 12 ‘y’s. Speaker 7 also gets only 3 ‘x’s and 15 ‘y’s. Speaker 9 gets 9 ‘x’s and 8 ‘y’s.

Hence we can interpret that Speakers 1, 2, 6, and 10 are rated as good speakers with respect to their pronunciation and Speakers 5, and 7 are rated as bad.

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The listeners were also asked to give percentage of marks to the speakers. Average of the percentages given was calculated by the researcher. The last column of the table shows the average percentage of each speaker.

Considering the average of the percentages, Speaker 2 gets the maximum percentage of 73.8. Speakers 10 and 6 score 72.05 percent each and Speaker 8 scores 70.15 percent. Speaker 1 scores 67.9 percent whereas Speaker 8 scores 67.75 percent. Speaker 3 scores 67.15 percent.

On the other hand Speakers 5 and 7 score relatively less than the other speakers. Speaker 5 scores the least-57.9 percent followed by Speaker 7 who got 61.65 percent.

Hence from the percentages given by the listeners, though Speaker 2 scores the maximum, speakers 6, 9, and 10 can also be considered as good speakers, whereas speakers 5 and 7 are bad.

**Limitations of the Study**

Since this study is based on a small sample size, a bigger sample size would facilitate better generalization of findings which might unfold some stress patterns in the English spoken by engineering students. The instrument used for data collections was also limited to only one.

**Conclusion**

Speaker 10 has fewer divergences than Speakers 2 and 6. All the three of them stressed the third syllable instead of first in the word ‘engineering’. Speaker 2 demonstrated stress on the third syllable in place of the first in the word ‘aeroplanes’. The word ‘environment’ was stressed on the third syllable by Speaker 2, and on the first syllable by Speakers 6 and 10.
This tendency clearly shows that even the best among the speech samples are not aware of the English word accent.

A majority of the speakers had the word accent on the first syllable in almost all the words. Eight of the ten speakers stressed on the first syllable in the word ‘engineering’. It is interesting to note that all the speakers were students of engineering and yet they could not pronounce the word ‘engineering’. This is mainly due to the influence of their first language in which the accent is on the first syllable. An investigation made by Pickering, L. and Wiltshire, C. (2000) on three Indian teaching assistants with Bengali, Tamil and Hindi as their first language found that Indian English accent is influenced by Indian languages and Phonetic correlates of accent in Indian English are found in Indian languages.

In the present context of engineering graduates seeking employment in foreign countries, and also in the context of globalisation, it is imperative that the intelligibility level of the technical graduates be improved, as much of their careers involve interaction with global clientele in software industry.

It would be ideal for the colleges offering technical education to also provide remedial measures which include language training programs. It is also suggested that teaching spoken English with special emphasis on word accent form an important and integral part of the curriculum. The present study indicates that no specific pattern of divergences in placing the stress in words emerges which reflects the lack of explicit knowledge and awareness of English word stress. Hence, it is recommended that a systematic course, involving the
introduction of stress rules, ear training and production practice be given to engineering students of Andhra Pradesh in India.

References


Language in India www.languageinindia.com
12 : 3 March 2012
Maruthi Kumari Vaddapalli, Ph.D.
Word Accent in English Spoken by Students of Engineering in India: A Pedagogical Perspective on Intelligibility


Appendix A

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Listener No.</th>
<th>Paticulars of the listeners</th>
</tr>
</thead>
<tbody>
<tr>
<td>(foreigners)</td>
<td>01</td>
<td>American</td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>American</td>
</tr>
<tr>
<td></td>
<td>03</td>
<td>Russian</td>
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<tr>
<td></td>
<td>04</td>
<td>Thai</td>
</tr>
<tr>
<td></td>
<td>05</td>
<td>British</td>
</tr>
<tr>
<td>(prospective employers)</td>
<td>06</td>
<td>H.R.Manager, Impetus</td>
</tr>
<tr>
<td></td>
<td>07</td>
<td>Operations Manager, Deloitte</td>
</tr>
<tr>
<td></td>
<td>08</td>
<td>H.R.Manager, SATYAM</td>
</tr>
<tr>
<td></td>
<td>09</td>
<td>H.R.Executive, Logicia India</td>
</tr>
</tbody>
</table>

Language in India [www.languageinindia.com](http://www.languageinindia.com)
12 : 3 March 2012
Maruthi Kumari Vaddapalli, Ph.D.
Word Accent in English Spoken by Students of Engineering in India: A Pedagogical Perspective on Intelligibility
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<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>10</td>
<td>H.R.Manager, IBM India (general public)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Medical Officer, Andhra university</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Assoc.Professor of English, Andhra University</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Manager, INCS, Naval Base</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Advocate</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Language Training Free Lancer</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Professor, Mechanical Engineering</td>
<td>(teachers of engineering colleges of JNTU)</td>
</tr>
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<td>17</td>
<td>Professor, Electrical Engineering</td>
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<td>19</td>
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<td>20</td>
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</tbody>
</table>

Language in India www.languageinindia.com
12 : 3 March 2012
Maruthi Kumari Vaddapalli, Ph.D.
Word Accent in English Spoken by Students of Engineering in India: A Pedagogical Perspective on Intelligibility
Appendix- B

Feedback form

Listener No.

Tick the appropriate item

1. The meaning conveyed by the speaker was
   a) clear
   b) not so clear
   c) unclear

2) The speaker’s pronunciation was
   a) good
   b) not so good
   c) bad

3) What percentage of marks would you give to the speaker? (   )

Date of Listening          Signature

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12 : 3 March 2012
Maruthi Kumari Vaddapalli, Ph.D.
Word Accent in English Spoken by Students of Engineering in India: A Pedagogical Perspective on Intelligibility