



## The Effect of Accent Familiarity on the Intelligibility of Native Speaker Speech

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**Abstract.** In native and non-native speaker discourse, lack of intelligibility is often identified as one of the main hindrances of effective communication. A number of empirical investigations have attempted to pinpoint the variables which determine level of intelligibility in discourse and familiarity of the listener to the speaker's accent is one of such established variables. In this study, an attempt is made to correlate the level of accent familiarity with the degree of listener's understanding of the speaker's speech with a view to examining the impact of this variable on speech comprehension. The focus is native and non-native speech, specifically, British speakers of English and Nigerian listeners. The outcome of the assessment is that the degree of listener's familiarity with an accent determines the level of comprehension of the speaker.

**Keywords:** Accent Familiarity, Intelligibility, Native Speaker Speech.

### 1. Introduction

In recorded history, the present global spread and use of English is unparalleled. An estimate provided by Crystal of the number of English speakers is about two billion (2008: 13). Earlier estimates provided by Crystal puts Inner circle/native speaker population at 380 million while the Outer circle and Expanding circle populations are put at 500 million and 1,000 million respectively (1995: 61).

This global spread of the English language in terms of use and characteristics has resulted in concerns over the issue of maintaining mutual *intelligibility* between diverse speakers of the language (Christophersen, Kachru, Munro, van der Walt, and Rajadurai). The most recent of these concerns have made calls for rigorous comparison and contrasting of native and non-native accents of English with a view to assisting interlocutors achieve

communication goals. These concerns have been voiced in relation to all the dimensions of language study but achieving intelligibility is perhaps most crucial at the linguistic level of phonetics/phonology where variation is most noticeable. The imperative of achieving speech intelligibility is seen in the current situation among speakers of English where such prominent variations sometimes occur to the extent that speakers of different accents of English have even imagined their interlocutor to be speaking another language entirely and not merely another variety of English. Numerous instances of misunderstanding have been observed and while some of the incidents are hilarious (Smith and Christopher, 2009: 92-3; Shockey, 2003: 119), others are serious, sometimes leading to disastrous consequences (Brown, 1990:79; Atechi 2004: 60). An example of a funny incident arising out of intelligibility failure is that narrated by Smith and Christopher (op.cit) in which Salmon Rushdie's wife, an English woman met an Indian intellectual on the train. They were both conversing in English but each thought the other was speaking another language. The traumatic experience of a 19-year-old Dutch undergraduate has also been narrated. After studying English for 6 years at a grammar school and 1 year at a Dutch university, this student went to England for the first time and had to ask for directions to the bus station from a porter. However, he could not understand a single word the porter said to him. Brown also reported that in England, 'many overseas students are unable to understand English as spoken by university and college lecturers, sometimes to such an extent that they give up their course of studies'. More serious consequences of lack of intelligibility have been reported in possibly the most deadly accident in aviation history. In this incident, 583 people lost their lives in an air crash because a Tenerife airport traffic controller and a German pilot did not understand each other even though they were both speaking English. This

incident led to major communication and language training reforms in the airline industry.

However, one crucial variable which is often a determinant of intelligibility is familiarity. Two types of familiarity affect intelligibility. They are accent familiarity and topic familiarity. However, while scholars have sufficiently established that topic familiarity influences intelligibility, the same conclusion has not been adequately established for accent familiarity. This paper seeks to examine the implications of listener's familiarity with an accent and the influence it may have on the intelligibility of the speaker's speech to the listener. The outcome will make a contribution to the debate on the impact of familiarity on speech intelligibility especially with regards to communication between native and non-native speakers of English. This study is concerned with two accents of English; the Standard British English accent (which phoneticians know as Received Pronunciation) and the Nigerian accent of English or NE.

## 2. Literature Review

Generally, intelligibility refers to level of understanding. The framework of intelligibility testing was first proposed by Catford (1950: 7-17) in a landmark treatise where it is stated that speech is intelligible "if the hearer understands the words i.e. if his response is appropriate to the linguistic forms of the utterance" (op.cit). Familiarity is a variable which is often associated with intelligibility through the relations of listener's familiarity with the accent and listener's familiarity with the topic. This paper focuses on the familiarity of the speaker's accent which in this case is RP to Nigerian listeners.

An examination of the literature on correlating familiarity with intelligibility shows that there does not seem to be a consensus on the impact of familiarity on intelligibility. On one hand, Gass & Varonis 1996: 65-89; Gupta, 2006; 15-31; Major et al, 2005:37-69, and a few others all agree that intelligibility is affected by accent. On the other hand, Strevens 1965: 185-205, and some others disagree with this proposition.

Gass and Varonis (op.cit) investigated the hypothesis that familiarity with a non-native speaker's accent facilitates understanding. The effect of four specific variables on intelligibility were tested. The variables are: familiarity with topic, familiarity with non-native speakers of a different language background, familiarity with non-native speakers of the same language background and familiarity with the same

speaker. The speakers included Arabic and Japanese speakers of English who produced tape recorded samples of speech. 142 native speakers of English listened to the speakers. The findings were as follows: (a) Familiarity with the topic of discourse greatly facilitates intelligibility; (b) familiarity with non-native speech in general facilitates comprehension; (c) familiarity with a particular non-native accent facilitates comprehension of the speech of another non-native of that language background and; (d) Familiarity with a particular non-native speaker facilitates comprehension of that person's speech. It was concluded that the listener's familiarity with the topic greatly facilitates the interpretation of the entire message.

Gupta (2006) investigated the mutual intelligibility of RP (Received Pronunciation) and the Singaporean accent of English as well as the effect of familiarity on the intelligibility of the speech of both groups. The results indicated that familiarity has an impact on intelligibility. Certain distinct features of both accents were identified as leading to lack of intelligibility. Further examination of these features revealed that these were accent features which were unfamiliar to both groups of speakers.

Munro and Derwing (2008) studied the acquisition of English vowels by second language learners of English. They found that improved intelligibility occurred especially with vowels that had a high frequency in words. This result supports the observation that familiarity affects intelligibility.

Bross also supports this position by claiming that 'the key to intelligibility is the concept of calibration' (1992:24-65). Calibration is the listener's ability to make rapid correlations between the different sounds of an unfamiliar accent with the sounds of the listener's own accent. It is argued that once the listener has been able to calibrate the message, then intelligibility will naturally take place.

On the other hand, Eisenstein & Verdi, Strevens, Eisenstein and Hopper all disagree with the proposition that a high degree of accent familiarity guarantees intelligibility. They base their conclusion on the results of empirical studies which seem to indicate that accent familiarity is not a significant determinant of intelligibility.

Major, Fitzmaurice, Bunta and Balasubramanian (2005:37-65) also attempted to measure the intelligibility of a native speaker accent to non-native listeners. According to them, the research was necessary because 'it is widely believed that listeners

understand some dialects more easily than others, although there is very little research that has rigorously measured the effects' (37). The research participants consisted of 180 potential takers of TOEFL (Test of English as a Foreign Language) who were all enrolled at either pre-degree courses or were undergraduates at various American colleges and universities. They comprised Chinese, Japanese and Spanish second language speakers of English as listeners and 60 undergraduate and postgraduate native speakers of Standard American English from U.S universities as speakers. The objective system of assessment was employed through a test based on recordings of 12 short lectures. The participants were questioned based on the recordings. For adequate comparison, other speakers were included in the test. They include speakers of Southern American English, African American English (AAVE), Australian English and Indian English. After the recordings were made, they were edited and test tapes were constructed from the initial studio recordings. Multiple-choice answers followed the test items. Statistical analysis showed that both native and non-native listeners are affected by a speaker's dialect and for non-native listeners, there were no significant differences between Standard American and South American speakers (58). The conclusions further buttressed the point that the speakers of Standard American English were not significantly more intelligible than speakers of other varieties because it is maintained that:

*[T]he results do not...support...that native-English speaking listeners and ESL listeners would perform better on listening comprehension tests in English based on lectures delivered by native speakers of Standard American English (58).*

This suggests that familiarity does not affect intelligibility.

Smith & Rafiqzad (1979: 371-380) examined the intelligibility of both RP and Standard American English to second language speakers of English. Among the other English varieties which were tested were educated accents from China, India, Indonesia, Japan, Papua New Guinea, the Phillipines and Taiwan. The major aim of the study was to help determine: 'what differences, if any, there are in the intelligibility...of selected taped material of nine national varieties. There were 29 undergraduate participants and they were all balanced for age and sex. The test material consisted of a recording on forms of address used in each speaker's country to address outsiders in English. The difficulty level of the test materials was controlled and judged to be about the same level through the following means:

*[B]oth speaker and respondent were fully proficient in English and believed themselves to be educated speakers of their national variety of English, each person spoke clearly and the number of embedded sentences and the speed of delivery were approximately the same.*

Thereafter, a cloze procedure of the passage was constructed with every 7<sup>th</sup> word deleted from the passage, leaving ten blanks which the listeners had to fill in. The passage was then presented to the listeners to test intelligibility (word/utterance recognition). In addition, a subjective questionnaire was also presented to the listeners. The listeners were to indicate how easy or difficult it was to understand the speaker. The important findings of this study include the following results: (a) the native speakers were not as able to correctly identify their fellow native speakers as speaking standard varieties of English as the non-native speakers were; (b) the non-native speakers was more critical and seemed to have stricter criterion for identification of standard English, many thought that the speaker of Standard American English was speaking non-standard English; and lastly, (c) the results easily support the interpretation that it is possible for Standard English to be spoken with many different accents. But what was perhaps the most striking results of the investigation is the conclusion that 'native speakers (from Britain and the United States) were not found to be the most easily understood...thus, being a native speaker does not seem to be as important as being fluent in English' (441). This finding also supports the view that accent familiarity is not a determinant of intelligibility.

For topic familiarity, there is some evidence that the use of technical words and specific register reduces intelligibility. For instance, Smith and Rafiqzad observed that intelligibility level differed according to the difficulty level of the passages used in their experiment. However, there is no such consensus for the conclusions on accent familiarity and intelligibility.

### 3. Research Methodology

There were several important considerations involved in the selection of the speakers for this study. The first consideration was this: which type of RP accent is the study focused on? This question is important because no accent is homogeneous as a lot of variability is found within all accents. For the sake of proper contextualization and clarity, mainstream RP which contains features which form a central tendency for all RP accents was selected as our RP

variety. Therefore, 16 Britons who use mainstream RP accent were selected. 8 male speakers and 8 female speakers were selected. The second consideration was the level of education of the speakers. As the Britons in consideration are mother tongue speakers of English, level of education was really of no consequence, but in the interest of homogeneity of sample population, university undergraduates were selected so that both speakers and listeners would have a comparable level of education.

The selection of speakers was done within certain principles. The principles were set down to ensure a certain level of homogeneity among the informants. The principles are stated below:

- born and bred in Britain, more specifically in England
- parents must be educated (at least up to university level)
- never have been outside England for a considerable length of time
- a university undergraduate
- attended a public school.

The speakers were carefully selected from a pool of 70 informants. They were individually engaged in a chat on their personal biography and information on these issues was sought. Based on their responses, 16 speakers were finally selected. It should be added here that all the undergraduate RP speakers were students of the University of Leeds.

The listeners were selected based on a similar set of criteria. Education is an important consideration which was used in the selection of both speakers and listeners. For the purposes of this research 'education' meant a minimum educational qualification of School Certificate. Other criteria used in the selection of listeners are as follows: Firstly, the listener must be a Nigerian, born and bred in Nigeria of Nigerian parents from any of the three major ethnic groups. Secondly, he/she must speak a Nigerian indigenous language with some fluency. Thirdly, listeners must be second language speakers of English. 144 Nigerian listeners were selected using these criteria. In addition to this, 16 Nigerians who had a length of residence (LOR) of a minimum of 10 years in the UK were selected. This group represents the Nigerians with some degree of familiarity with the standard British English accent. The ratio of Nigerian listeners living in the UK to the other group of Nigerians listeners involved in the study was 1:10.

The speech of the sixteen RP speakers was recorded along the sections of: connected speech, phonemes, stress and intonation. The speech recording was presented to the selected 160 Nigerians. The listeners were arranged into groups of ten and instructed to listen to the recordings and write down what they heard i.e. ten Nigerians listened to one RP speaker. Thereafter, a comparison of the speakers' utterances and the listeners' written responses was done. Scores were given for the correct responses and the scores were averaged over the ten listeners involved for each speaker. Table 1 below shows the scores in percentage values.

**Table I: Mean Intelligibility Scores in Percentages**

Listeners in groups of 10	Connected Speech	Phonemes	Stress	Intonation
Set 1	64.5	27.6	98.0	53.2
Set 2	64.6	28.7	98.0	61.9
Set 3	47.2	29.8	96.0	58.7
Set 4	45.1	39.3	98.0	55.2
Set 5	56.2	44.9	96.0	55.6
Set 6	50.7	37.8	98.0	58.5
Set 7	53.6	35.8	96.0	68.0
Set 8	61.5	36.3	100	46.1
Set 9	66.1	38.7	98.0	48.0
Set 10	55.4	29.4	96.0	47.6
Set 11	70.8	38.1	98.0	54.0
Set 12	71.0	40.3	94.0	46.1
Set 13	74.8	38.3	96.0	67.1
Set 14	78.6	37.2	96.0	43.1
Set 15	64.4	38.4	94.0	47.2
Set 16	71.7	39.6	96.0	42.0

Table 11 below shows the effect of the listener's degree of familiarity on intelligibility. The listening test scores of the sixteen (16) Nigerians resident in the UK (LOR: Minimum of ten years) is presented.

**Table II:** The Effect of the Listener’s Degree of Familiarity on Intelligibility

Listener ID	Test 1 Connected Speech	Test 2 Minimal Pairs	Test 3 Sentence Stress	Test 4 Intonation
L10	77	50	100	75
L20	85	55	100	75
L30	67	54	100	73
L40	71	51	100	70
L50	77	57	80	82
L60	74	63	100	83
L70	73	57	100	79
L80	81	58	100	69
L90	82	50	100	74
L100	64	52	100	59
L110	83	57	100	58
L120	93	67	100	73
L130	83	59	100	79
L140	82	52	100	64
L150	75	54	100	43
L160	80	54	100	48
<b>Average</b>	<b>77.9%</b>	<b>55.6%</b>	<b>98.7%</b>	<b>69.0%</b>

Sixteen (16) out of the one hundred and sixty (160) Nigerian listeners involved in this study were Nigerian undergraduates in the UK. These 16 are representative of Nigerian diasporic dwellers (UK). The scores indicate that they correctly identified a higher number of units than the other one hundred and forty four (144) Nigerians who are resident here in Nigeria.

This study corroborates the view that accent familiarity correlates highly with intelligibility. Our juxtaposition of the performances of the Nigerians resident in Nigeria with that of the Diasporic dwellers showed the relevance of degree of familiarity to intelligibility. With a range of 64% and 93%, almost all of the Nigerians in this group (Nigerians living in the U.K) scored higher than the general intelligibility average of 62%, thus implying that high familiarity with an accent correlates with high intelligibility. The Nigerian listener who obtained the highest score is a female student at the University of Leeds who has worked part-time for about three years as a telephone operator. The job is similar to a public relations job which involves a lot of interaction with the members of the public. This particular listener seems to have developed the requisite skills for highly efficient listening demonstrating that calibration of an accent sufficiently assists the listener to achieve greater listening proficiency.

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