

LINGUISTIC CUES IN THE SPEECH STREAM OF THE NIGERIAN SOLDIERS: A SOCIOLINGUISTIC APPROACH

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Abstract

This study was carried out to find out how linguistic variants implicate different social meanings. The research was premised on the theory of Exemplar-based model of representation. The researcher used direct observation and interviews as instruments for data collection. Descriptive and interpretative tools were employed for the analysis of data collected. After the analysis, the researcher found that the linguistic variables such as pitch width, overall fundamental frequency (FO), speech rate, and invariance are associated with soldiers of the Nigerian Army. The research revealed that every speaker's utterance offers linguistic information and indexes a social category and the ability of the listener to identify the observed indexical features of the speaker depends on the listener's social experience and his perceptual acuity because lexical structure consists of detailed and linguistically rich remembered linguistic experiences which are stored in the memories of the listeners about the speakers. The work concludes that every speaker's utterance offers linguistic information that has social significance. The work among other issues, recommends the right application of perception in the association of social category to speakers will entrench the most-sought after society's coordinates as a way to solve social problems in the society.

Key words: Sociolinguistic Cues, Speech Stream, Speech Perception, Social Category and Nigeria Soldiers.

Introduction

Sociolinguistic variation in speech production is now known to correlate with a number of factors, including the social characteristics of the speaker and the formality of the situation (Labov 1994). According to Chambers *et al.*, speakers are not constant in the cues they produce sociolinguistically but, shift depending on the style they construct in a given context (2). Although perception has been a neglected 'neighbour' of production in sociolinguistics, because perception has been studied far less in sociolinguistics than has speech production. The aversion of much of sociolinguistics to perception has been, to some extent, more apparent than real. Many sociolinguistic studies over the past generation, especially instrumental studies, have succeeded in divorcing speech production from speech perception. However, perception issues according to Erick, may play a hidden role in studies that ostensibly address production. The reason is that variationists have not always carefully distinguished production from perception. This tendency is an artifact of the reliance of sociolinguistics on impressionistic transcription (11).

However, the link between an individual's production and their perception is not entirely straightforward. Some researches suggest that speech perception may not always be affected when there is a change in production, even when the change in production is a potentially long-term shift. Some researches also discover that listeners appear to use cues they do not use in their own production but that are used by other groups during perception. According to Katie,

The vast amount of work which examines the relationship between social factors and linguistic variation has focused on variation in speech production. However, a growing body of work demonstrates a link between social factors and variation in perception, not only do individuals produce variables in socially meaningful ways, they perceive speech differently depending on trends in their own production, their previous experience with other dialects, and the social characteristics that they attribute to the speaker (473).

This provides ample opportunity to the listeners to make judgments about a speaker based only on hearing their speech, attributing social characteristics and assigning broad social categories in consistent

ways. In the study of language variation and change, there is a long tradition of clustering individuals into structured groups, based on social factors such as age, gender, and social class. Across these groups, we observe the productions of (often binary) variables in order to make inferences about the underlying social patterns or the idea that certain patterns of pronunciation index social information (Foulkes and Docherty qtd. in Sara, 26).

According to Sara (82), investigators have recently made impressive progress in multiple areas of sociolinguistic. One area is the use of increasingly auditory analysis, which demonstrates that very sociolinguistic variable is used for the construction of social identity. A second area is the use of ethnographic approaches, which enable researchers to break free from using traditional social categories that may not be relevant for a particular group of speakers, and to investigate in-depth the social meaning of particular phonetic variants. A third area is the application of participant observation to probe listener's use of sociolinguistic details in speech production. The researcher argues that the combination of all these approaches holds the key to an integrated understanding of how sociolinguistic variation is produced, performed, and perceived in its social context. In general terms, sociolinguistic variation involves the integration of the principles, techniques, and theoretical frameworks of sociology, phonology, phonetics, with those of sociolinguistics, and especially to the use of modern methods in the quantitative analysis of language variation and change.

Theoretical Bases

This work adopts the theory of Exemplar-based model of representation. This theory assumes that knowledge of linguistic structure is built up by representing memory the totality of linguistic experiences that an individual has. This theory was propounded by Robert Nofofsky in 1986. The theory according to the proponent is a proposal concerning the way humans categorize objects and ideas in psychology. It argues that individuals make category judgments by comparing new stimuli with instances already stored in memory. The instance stored in memory is the "exemplar". The new stimulus is assigned to a category based on the greatest number of similarities it holds with exemplars in that category. For example, the model proposes that people create the "bird" category by maintaining in their memory a collection of all the birds they have experienced: sparrows, robins, ostriches, penguins, etc. If a new stimulus is similar enough to some of these stored bird examples, the person categorizes the stimulus in the "bird" category. Various versions of the exemplar theory have led to a simplification of thought concerning concept learning, because they suggest that people use already-encountered memories to determine categorization, rather than creating an additional abstract summary of representation. This representation many therefore include a potentially vast set of detailed sociolinguistic traces based upon the tokens an individual has heard, and a parallel set of traces bearing articulatory information about tokens that the individuals has uttered. It will be apparent from the foregoing that sociolinguistic data have been collected to address a wide range of theoretical issues, reflecting the range of disciplines that have contributed to the development of sociolinguistic as a field of linguistics. Given the historical foundation of sociolinguistics within other levels of linguistics, it is no surprise to find considerable overlap in their theoretical interests. Also, as described before, sociolinguists first consider social variation to be tied largely to socioeconomic hierarchy and to region. Non-standard varieties were spoken by socioeconomic groups, and formality in a conversation, no matter the speaker, would lead to the use of more standard variables (Labov, 94).

Later, sociolinguists began to consider certain variables as associated with locally-defined speech communities; a speaker's desire to be affiliated with a particular group determines what variables he chose to use at the time. Eckert stresses that,

Linguistic choices do not directly index the social categories or groups of speakers, but that those choices index attitudes, character traits, and involvement in certain activities that in turn are associated with different categories of people. These linguistic markers do not exist only in an isolated speech community, but in the wider community of society, where there are given broad meanings accessible to the culture (5).

He further notes that, stylistic practice involves adapting linguistic variables available out in the larger world to the construction of social meaning on a local level. But the use of these variables requires that they have some general conventional meaning, which can be vivified in a particular style (24).

This suggests that the identity of a person belonging to a social group is made up of traits that cause that person to be effective in that membership and those traits are projected by the use of linguistic variables that have obtained social meanings associated with the traits. When all those linguistic traits are used by a single speaker, listeners are likely to perceive that speaker as belonging to the appropriate social category.

According to Katie, recent theoretical contributions in sociolinguistics have postulated that linguistic traits are associated with specific social meanings in a field of connected meanings and social variables. Phonetic studies on the other hand explain how phonetic innovations may arise as a result of the dynamic actions of the articulatory system, and researchers have begun to use experimental methods to examine these links in the perception of a listener. This research successfully uses these methods to show that linguistic variables cause shifts in social perception when carefully observed as the case may be and the results will show that these shifts in variants also cause the listener to judge the speakers as being more or less likely to be involved in a particular social category (48).

From the preceding paragraphs, we see that the study reviewed is context oriented and hinges on the sociolinguistics; the study of language in relation to the society. Therefore, the researcher premised the work on the theory of exemplar-based model of representation to determine sociolinguistic variation and language use among soldiers of the Nigerian Army.

Sociolinguistic Cues

Sociolinguists have made great progress in understanding the nature of variability in speech. Much effort has been spent on understanding and modelling factors such as intonation, lexical voice, syntax, co-articulation, rate of speech, phonemic context and vocal tract physiology on the acoustic properties of speech sounds. Socially driven variation, however, is also pervasive but has received much less attention. Most current models of speech production and speech perception can therefore not readily account for how we produce, perceive and interpret socially conditioned variability. One of these current models of sociolinguistic variation is: exemplar model.

Exemplar Model

The exemplar model of speech perception and production proceed from the assumption that lexical structure consists of detailed and sociolinguistically rich remembered linguistic experiences. Because memories can be 'indexed' with relevant social information, this model seems to provide a compelling account of the interconnectedness of the linguistic and social meaning which is embedded in phonetic detail (Foulkes and Docherty, 21). They further note that, sociolinguistic variation refers to variable aspects of phonetic or phonological structure in which alternative forms correlate with social factor. They carefully documented different types of socially conditioned variation on the segmental, sub-phonemic and suprasegmental level, suggesting that variation is pervasive at all levels of phonetic and phonological structure (406).

Currently, the theoretical framework that embeds indexicality centrally within phonological knowledge is the exemplar-based model of representation discussed by Goldinger (1997), Johnson (1997), Pisoni (1997), Pierrehumbert (2001), and Hawkins (2003). The exemplar model according to them takes a very different point of departure from most other models by not assuming that lexical representations are stored solely in abstract and invariant form. Instead, knowledge of linguistic structure is built up by representing memory the totality of linguistic experiences that an individual has. So, for example, knowledge of the sound patterning associated with the word *cat* is not considered to be reducible to something like a three phoneme string, /kæt/. Rather, it consists of a detailed record of all the exemplars than an individual speaker-listener has encountered of that word. In principle, a lexical representation may therefore include a potentially vast set of detailed acoustic traces based upon tokens an individual has heard, and a parallel set of traces bearing articulatory information about tokens that the individual has uttered.

According to Foulkes and Docherty, each exemplar simultaneously encodes non-linguistic as well as linguistic information since the acoustic record contains reflexes of who were speaking and what the speaker's voice sounded like in terms of segmental features, pitch range, voice quality, etc (420). Nygaard, Sommers, and Pisoni assert that, the exemplar model captures intrinsically the observation

made by many phoneticians and sociolinguists that no natural human utterance offers linguistic information without simultaneously indexing some social factors (93). Specifically, this predicts that individuals store and can access those aspects of phonological patterning which are crucial in conveying indexical information conveyed by the speech signal, and in any particular instance, listeners map phonological patterning not only against the meaning of the word in question but also against other dimensions of that particular token such as the identity of the speaker (Hawkins and Smith qtd. in Foulkes and Docherty, 2006).

Bod, Hay, and Jannedy note that,

These features alone strongly differentiate the exemplar-based model from other models of representation, but there is a further element of this approach which strengthens its appeal to those interested in accounting for sociolinguistic variability. For many investigators, including those cited above, exemplar-based representation goes hand in hand with probabilistic approach to linguistic learning and categorization (3).

Precisely, the same probabilistic mechanism can be extended to account for the emergence of knowledge of the indexical properties of variants.

In summary, the exemplar model of sociolinguistic variation accounts for emerging knowledge of indexical properties of phonological patterning, having to invoke any special mechanisms over and above those that apply in phonological learning generally, because it explores its potential from modelling sociolinguistic variation and not how the experience with sound patterning can be aligned to the social factors which are significant for a particular individual. To this end, the exemplar model of sociolinguistic variation is designed to account for how individuals develop and continue to develop their awareness of the indexical values of phonological variation for the purpose of understanding the integration of lexical and indexical information within the memory.

Correlation between linguistic variables and social factors

Since the mid 1960s and with the foundation sociolinguistics by Labov, social factors started to gain significance in the field of linguistics and to play an important role in analyzing and modeling speech. In sociolinguistic patterns (163), Labov stresses that “[t]he process of sound changes is not an autonomous movement within the confines of a linguistic system, but rather a complex response to many aspects of human endeavour”. Further, in principles of linguistic change (94), Labov asserts that “[t]he separation of ‘internal’ from ‘external’ ‘linguistics factors’ from ‘social factors’ may not seem practical to those who view language as a unified whole where those who believe that every feature of language has a social aspect. Throughout decades of sociolinguistic studies of variation, a great shift in views took place, a shift from viewing language as reflection of the social to viewing language as creator of the social factors (Eckert, 1989). The shift starts with Labov’s (1966, 1972, Trudgill, 2004) view of style variation as different levels of attentions paid to speech and ends with the constructivists’ view of the use of style to project a self-image and to construct identity and social meaning. Other views were also formed, design in which a speaker’s style is seen as a response to an audience. Bell viewed style as a reflection of social variation, whereas Finegan and Biber (94) viewed social variation as a reflection of style. This is not to mention accommodation theory (Giles and Powesland 75; Giles, Coupland and Coupland 99), which draws on the speaker’s orientation and attitude to the interlocutor and on the role of identity.

There is no doubt that people do speak differently in different situations. However, there has been some debates about how best to analyze and explain these difference using sociolinguistic principles and methods (Milroy, 19). We have already seen one other explanation for some of this variation, which is speech accommodation. Bell (84) has suggested that the most important element in style – shifting may be this kind of accommodation to one’s audience, which he called ‘audience design’, rather than the amount of attention paid to speech.

Horizons of Sociolinguistic Variation

Arguably, the main concern of modern linguistics has been to put forward evidence of an unchangeable and stable grammar in humans. At the same time variability remains a very fundamental property of

human language. It is a known fact that language varies across community, individuals and speech acts, and with language variability comes language change. The question at the heart of the scientific endeavour concerned with linguistic variability is what causes language change? This question is present at the core of disciplines such as historical linguistics, contact linguistics and (variationist) sociolinguistics.

The merger of the some fields of linguistics and sociolinguistics has been described by Foulkes *et al.* (22) as having the aim of identifying, and ultimately explaining, the sources, loci, parameters and communicative functions of socially structured variation in speech. This aim according to them thus applies not only to a large proportion of work done in the field of sociolinguistics, but also to work done in the discipline of phonetics. Sociolinguistic work can inform us of the role of exemplars in our linguistic system by showing variability in how social categories and linguistic details are connected by listeners. Furthermore, work in phonetics can show how linguistic exemplars connected with particular social categories can lose (or win) in processes of language variation (Pierrehumbert, 20).

A further motivation for the current special issue is to promote innovativeness in methodology as a general concern for current sociolinguistic research. A heightened awareness of methodological concerns is perhaps something that sets sociolinguistic work apart from a lot of other works concerned with language variation and change. As mentioned above, investigations of the relationship between the production of linguistic details and social category have been prominent in the field of variationist linguistics since the 1960s (from the studies collected in Labov (94), to more recent work such as Llamas *et al.* (9) concerned with accommodation and usage of phonetic detail or Lawson (205) looking at vocalic variation and membership in communities of practice, to mention two examples out of many). The contribution of investigations in the third wave framework is a more comprehensive picture of how social meaning is constructed and conveyed in speech than what traditional variationist research has offered. Works of sociolinguistics nature have been particularly prominent in this field, and studies investigating the construction of social meaning of language and how linguistic details influence social categorization in perception (Thomas *et al.*, 202) or vice versa, how social detail influences linguistic perception (Hay and Drager, 7) have been particularly pervasive.

In November 2010, a conference called *Lingua* was held at the University of Groningen, the Netherlands. The conference was titled “Experimental Approaches” (EXAPP 2010) and was aimed at the new horizons of sociolinguistic variation and change. Different papers were presented by different scholars, opening new grounds for sociolinguistic as a field of linguistics to cover. Some of these grounds which are seen as new horizons as discussed by scholars in the conference are as follows:

Usability of Brands as a Determiner of Social Categorization of Linguistic Variation and Change

MacFarlane and Stuart-Smith, the conference participants took an innovative approach to discuss “Usability of brands” as a determiner of social categorization of linguistic variation, creating a methodology with strong roots in social psychology as well as sociolinguistics through the use of listening experiment’. MacFarlane and Stuart-Smith aimed at investigating to which extent the abstract, locally constructed, social information that *brands* portray can be a consistent categorizer of linguistic details in a community. They found out that, listeners who are aware of the local social meaning of a brand use this awareness in their perception of linguistic information. A key issue here according to them, is the role that brands play as social exemplars’ memories to subsequently be used to form evaluative judgements.

The Link between Individual’s Social Experience and their Perceptual Faculty

The link between an individual’s social experience and their perceptual faculty forms part of the arguments made in Fridland and Kendall’s investigation (2012). Their study reports a comprehensive experimental approach to account for the relationship that exists between the perception and production of language. Their study looked at informant’s participation in vowel shifts that are currently taking place in different US English varieties, combined with a perception study of the vowels in question. They found out that a shift in production targets does not necessarily align directly with a shift in perception targets. Fridland and Kendall argue that, one explanation for this mis-alignment could be

found in the exemplar theory and the possibility that best exemplars move in the direction of sound shifts first. The results imply that listeners form rankings of exemplars, and that not all exemplars are equally important for a speaker to participate in (or hinder) a sound change. Their findings do suggest, however, that regional background is a good indicator of both how one produces and perceives vowel continua and that the perception of vowels has strong ties to people's individual production pattern. Fridland and Kendall's findings provide sound empirical foundations to the exemplar theory. At the same time their findings underline a need for further sociolinguistic research into exactly how and why listeners rank linguistic exemplars.

Individual Perceptions

Individual perceptions are also the focus for the paper by Hall-Lew and Fix, which investigates perceptions of vocalization of (L). Their paper concerns the constancy of auditory phonetic coding abilities across a large number of linguists, and their findings have implications for sociolinguistic and phonetic work outside the English speaking world. Results from an outline listening experiment show that, the first language of linguists play little role for the consistency of impressionistic coding of whether vocalization occurs or not. However, Hall-Lew and Fix concluded that the degree of vocalization of (L) remains a tricky subject matter for variationist research. A qualitative data presented in their paper indicate how fine grained vocalization can have localized social meaning which could affect the coding abilities of linguists who have knowledge of these localized meanings. The question which arises from Hall-Lew and Fix's paper is how large phonetic differences must be to carry a different social meaning. Their study is of strong methodological importance, not only for variationist research, but also for research in phonetics that benefits from more information about how consistent auditory analysis is across populations.

Methodology

With the aid of Adba Sound ABS-126 technological assisted recording tool, the researcher collected a combination of spoken materials (speeches), some relatively well controlled and conditioned, and some to reflect the natural repertoire of how soldiers of the Nigerian Army use language. Based on the data collected, the researcher made use of the descriptive and interpretative technique to analyze the data. The data collected were analysed using careful auditory analysis in relation to the research objective to determine how linguistic variants can index social meaning.

Data Presentation and Analysis

The linguistic traits examined in this work is to address the research question were FO (overall fundamental frequency), speech rate and pitch width. The selection of these linguistic traits common among soldiers of the Nigerian Army was to gain a nuanced understanding of how some of these traits are used by soldiers of the Nigerian Army and interpreted by the listeners. In the military, research has shown that there is a relationship between FO and physical dominance, arrogance, and military membership; faster speech rate, efficiency, helpfulness, competence, and military membership; pitch width and expressiveness, and military membership.

An Extract from the Parade Proceedings of the Nigerian Soldiers

- i. *Commander: Number in twos from the --- Number! Height maintained!!!*
- ii. *Squad: (One after the other) one, two one two, one, two ...*
- iii. *Commander: Alright ... All one, one a step forward, all two two a step backward in open order march!*

So, the 'one one' and the 'two two' in example (iii) refer anaphorically to the squad numbers who had identified themselves with numbers 'one' and 'two' respectively in compliance with the order given in (i).

- (iv) *Commander: On your 'yarnsh' you should go ... you bush animal. Put his name on the book.*
- (v) *The offender: (Swiftly responds) Mercy Sir!*

This is a clear indication that the offender's apology is granted and that he should join the squad again.

- (vii) *Commander: Recognizing the presence of a patriot after two: one! two!*
- (viii) *All: Mon Sir!*

- (ix) *Commander:* *Head high P'rade, P'rade 'tion*
 (x) *Patriot:* *Are you happy? Would you like to be happy?*
 (xi) *All:* *We're ha!*
 (xii) *Patriot:* *Are you sure?*
 (xiii) *All:* *We're shu!*

Expressiveness

From the data above, it is obvious that expressiveness is one of the linguistic cues and very salient features of the Nigerian soldiers. From the discourse, it is obvious that the linguistics variables used correlate with the social variables that are known with the Nigerian soldiers which are: expressiveness, dominance, efficiency and stoicism.

The data show that expressiveness is a salient cue of the Nigerian army. What informed the choice of this military feature was because, it was more easily noticed than that of the other social variables mentioned above, there were a larger number of stimuli containing these variables. Also revealed that, the northerners have a strong effect on perception of military identity, it was best to choose a marker that is known with the dialect of the north. Also, the results show the positive correlation between the northern variable and leadership and time spent in the military. The northernness – leadership as evidenced with the prominence of speakers of the northern dialect in Nigerian politics, from a start, including two out of three of the most recent Nigerian presidents. The northernness – military correlation confirms both that, as expected, if a speaker sounds like he is a northerner, he is more likely to be perceived as someone who has spent time in the military, and that linguistic variables that indicate northernness can also cause listeners to make broader social judgments of a speaker, suggesting that social information is organized in a complex web of interactions, and pulling on one string of the web can activate many other connected strings.

Dominance

Perception studies concerning the soldiers of the Nigerian Army have commonly looked to overall FO as a possible correlate to more dominant speech. The result of the analysis found out that these correlations were stronger for physical dominance than for social dominance. Dominance is not the only trait associated with mean pitch; FO is sometimes discussed as a marker of the soldiers of the Nigerian Army and it has to be related to perceptions of low emotional states. The analysis further revealed that, soldiers are perceived to be direct, concise and dominant and people who speak with authority. Also, in the military, particularly among soldiers of the Nigerian Army, the principle of dominance solves the collective problems by establishing a power hierarchy in which those of the top control those below, which helps each soldier of the Nigerian Army to contribute to the common goal of the institution as it minimizes open conflict within the institution.

The dominance as one of the acoustic features of soldiers of the Nigerian Army was revealed by the result of the manipulation that there would be a correlation between lower pitch, arrogance, leadership and ability to win a physical fight. The result showed overwhelmingly that the tendency for listeners to identify the voices in the lower pitch guise as someone who would win a fight demonstrates that listeners associate lower pitch with greater physical prowess and perhaps also with aggression.

Efficiency

Efficiency involves speed and accuracy, getting a job done correctly in the shortest amount of time possible. In speech, this would equate to concise wording, increased speech rate, and fewer pauses, but vocal and silent. The amount of information that a person is able to convey in a given slot of time is one of the most important aspects of efficient speech, though this of course must be balanced by clear acoustic signals. The result of the analysis showed that, soldiers of the Nigerian Army can understand speech at a rate that is twice as fast as the non-military members, so the hindrances in the comprehension of quick speech are not speed by other confounds such as unclear syntactical structures and muddled articulatory gestures. The analysis also revealed that a faster speech rate was correlated with power and competence for the Nigerian soldiers. It was also observed from the analysis that speech rate is indeed one of the most salient cues for military involvement.

Stoicism

The variable for stoicism according to the result of the analysis is the width of the speakers overall FO throughout an excerpt and this variable is also matched with manliness, that is having the qualities or physical features that are admired or expected in a man. The result of the analysis has shown that military officers particularly soldiers of the Nigerian Army use a generally lowered FO linguistic variants that may be a result of masculine posturing and display of dominance that take place in a culture that is male – dominated and intrinsically violent considering the nature and tune of the society we live in today.

In addition, the works that soldiers are required to perform are emotionally tasking and, in today's society, much more violent than the tasks required of an average citizen. The result has also shown a lack of intonation in military speech partly, because soldiers must maintain a different level of emotional distance from their everyday activities in order to be able to perform tasks. This emotional distance was observed to be established through the use of acronyms or military jargon to describe the events whose words in civilian society bear a great deal of emotional semantic content. The result further revealed that, the emotional language has greater pitch diversity. Therefore, stoic language is that without much change in pitch and may be a part of what constitutes military speech.

Summary

The results provide evidence that a single linguistic variable can have meaning within a language and that variable can be used in combination to create and project a person's social identity. The work further shows that the four character traits: expressiveness, dominance, efficiency and stoicism are social variables carrying separate locally-created meanings correlated with the identity of a man that has spent time in the military. The objective of the research is to examine sociolinguistic cues in the speech stream of the Nigerian soldiers and how they index their social meaning. The work further shows that the combination of linguistic and social variables exhibit that the speaker possessed expressiveness as a result of time spent in the military.

Conclusion

The conclusion drawn from the findings indicates that though each linguistic variable can have a specific social meaning, those meanings exist in a complex indexical field in the listener's minds, and these associations are activated as listener's process speech. It was also discovered that lower pitch correlates with physical dominance, a faster speech rate with competence, and wider pitch with expressiveness. When all of these variables were combined, the speaker seemed extremely likely to have been in the military, suggesting that listeners listen for individual linguistic traits to make social judgments and also seek out combinations of variables to make connections with social categories.

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