THE TEACHING OF PHONETICS TO L2 USERS OF ENGLISH: PRONUNCIATION OR PRONOUNZIATION?

by

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1.0 Introduction

The purpose of this paper is two-fold: to highlight the low profile of Phonetics teaching and research, particularly the latter, in our universities; and the consequent problems encountered by our undergraduate students in studying the subject. Even in the United Kingdom, professors found it necessary, as recently as the early 1960s, to deliver their inaugural lectures on topics arguing for a **place** for Phonetics on the university curriculum.

In our case in Southern Africa, only the odd Staff Development Fellow opts for, and is encouraged to study the subject. Such a fellow's choice of career represents a defiance of an all too often negative perception of Phonetics, deriving, I would suggest, from **both** our teaching methodologies, which suffer from a lack of that necessary, symbiotic support from relevant research, **and** the inevitable inability of students to accord the subject the same weighting that they do other disciplines.

This paper comprises three sections: the first represents an attempt to define the subject and to point out its applications in ordinary life; the second is an outline of my own teaching practice; and the last a personal confession. This latter consists of a discussion of errors-data collected from student essays and examination scripts over the years, errors for which I must bear part of the responsibility as leading participant in the learning process.

In my view, many of these errors do not all easily fall into our 'English-as-a-Second-Language-errors' or 'Mother-tongue-interference' mould. They have to do with both the teaching methodology as characterised above and with the **place** of the discipline on the curriculum.

If we are going to inspire our students with a burning desire to explore and master the 'mysteries' of a foreign/second language, they must first or simultaneously be made aware of the complexity

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of their own. After all, it was Doke's (1931b, 36) observation long ago that

> . . . the wealth of Bantu phonetics lies in the consonants, in their multiplicity of forms, their permutations, and the limits and rules governing their combination.

It is precisely because we learn the English sound system after mastering such complexities in our mother tongues that the new consonantal system presents relatively few and less complex problems. The English vowel system (cf Pongweni, 1990a) and prosody, however, are our shibboleth.

1.1 Phonetics: its Nature and Uses.

The necessity to restate the nature, and to revaluate the role of a discipline in the university enterprise has been keenly felt in academia over the years. This is particularly true of our own, viewed by many as perhaps the most esoteric among the pursuits of generally accentric professionals.

In 1961 Professor Scott gave his London inaugural address on the topic 'The **Place** of Phonetics in the University', in which he sought to define the contribution of phonetics to the achievement of the university's remit: can a university give pride of place to phonetics among its disciplines and, simultaneously, fulfil its role in the land in which it has its roots? Henderson's 'The **Domain** of Phonetics', in some scholars' view still a classic, was delivered in 1965. In it she sought to demarcate the discipline's 'academic territory, demonstrating its intersections with other disciplines' and indicating the many areas in which its contribution was, and continues to be, crucial.

When it comes to the phonetician's own perception of his subject, there has been no lack of hyperbole. Henry Sweet (1902), that doyen of British phonetics, for example, viewed 'scientific phonetics as the indispensable foundation of all study of language, whether practical or theoretical'. His view, shared by many of his successors, arose from the simple observation that the normal human child acquires speech first before it learns to read and write. Secondly, even after mastering these two latter skills, human beings communicate more through

speech than through writing, both as interlocutors in person-to-person contexts and through the telephone. We have all come across communities that are illiterate, but none that are speech-less.

It seems to the phonetician, therefore, that a discipline that seeks to deepen our understanding of a medium that is so all-pervasive and so definitive of **homo sapiens** (or is it **homo loquens**?), is worthy of serious study. Scott (1961) and Henderson (1965) spoke out in an era when full-fledged departments of Phonetics were still few and far between. Nowadays, there is no shortage of such establishments and, particularly in the West, governments and universities continue to invest in the discipline, as more and more undergraduates opt for it. This is in spite of a number of impediments that do not readily recommend phonetics to the often diffident high school graduate.

1.2 **The Insider and Outsider Perceptions of the Discipline.**
Among its perennial drawbacks is the tendency of its practitioners to appear to be 'actuated by the demon of terminological invention' (Malinowski, 1921). This tendency arises from the perceived scientism of phonetics which derives from its inevitable consortment with fields of study far removed from the Humanities, particularly physics and physiology. The use of such unfamiliar terminology and of two-dimensional diagrams of the speech tract is often the signal for the weak of heart among our new undergraduates to scurry in search of less intimidating alternative courses to phonetics.

Secondly, the invitation to phonetics freshmen to make sounds in order to feel, kinaesthetically, those articulatory movements that lead to the production of speech, seems sometimes to be viewed as an invasion of the student's person and as unwarranted familiarity on the part of the lecturer. To enable my students to not only hear but also feel the difference between [s] (voiceless) and [z] (voiced), I often ask them to pronounce the one, then the other, each time with their pointing figure firmly pressed on the larynx. I was once told, 'No! That is against our culture'. And I quickly consulted and adopted another, acceptable technique.

Thirdly, phoneticians do not regard their praxis as a feigned scientific methodology. Phonetics, far from being the mere borrower of terminology from the natural sciences, **is** the scientific study of the sounds and sound systems of natural, human language.

The justification of this claim has been articulated very clearly by, among others, Robins (1971:7,8), who writes with not just phonetics, but also with general linguistics in mind:

> In saying that linguistics is a science . . ., one is saying that it deals with a specific body of material, namely spoken and written language and that it proceeds by operations that can be publicly communicated and described, and justified by reference to statable principles and to a theory capable of formulation. Its purpose in this proceeding is the analysis of the materials and the making of general statements that summarize, and as far as possible relate to rules and regularities, the infinite variety of phenomena . . . that fall within its scope. In its operations and statements it is guided by three canons of science:
> (i) **exhaustiveness**, the adequate treatment of all the relevant materials;
> (ii) **consistency**, the absence of contradiction between different parts of the total statement; and within the limits imposed by the two preceding principles;
> (iii) **economy**, whereby, other things being equal, a shorter statement or analysis employing fewer terms is to be preferred . . .

Further, Robins states that linguistics is an empirical science since 'its subject-matter is observable with the senses, speech as heard, the movements of the vocal organs as seen directly or with the aid of instruments . . .', but that it is, within the empirical sciences, 'one of the social sciences', because its materials form part of human behaviour.

Fourthly, and this is anecdotal, it is at first awkward for the newcomer to our establishments to be led into research laboratories too often situated in the basement of the department or which are as close thereto as is architecturally possible. As

if it is not enough that one already feels a stranger among the peddlers of obscurantist dogmas, one must be physically dragged into the bowels of the earth, where the theories learnt on the ground floor and above are allegedly to be practically proven through experiments. Not to mention the dazzling array of space-age gadgetry that is to be found there.

Recording studios used to be located in the basements of linguistics departments so as to reduce the amount of extraneous noise coming from the streets while recording materials for analysis. Nowadays this is no longer necessary because of the development of the anechoic (sound proof) room.

The emulation of scientific methodology arising from our perception of the discipline as an empirical (social) science, the demands we make on students to actively participate in the creation of teaching and learning data, the use of borrowed terminology and technology and the logistical peculiarities referred to above, all combine to give phonetics its distinctiveness as a discipline, initially intimidating to the layman, but challenging to the initiated.

But the matter of the unfamiliarity of the jargon can be overstated. If Malinowski's demon exists, then 'he doth bestride' academia in toto. It is his ravages that have inspired the likes of Abrams (1981) to come to the rescue of our literary colleagues, for example, while Crystal (1985) has done wonders in demystifying our own endeavours.

The complexity of the material of phonetics, especially the acoustic phase, is one of which there is no doubt in the minds of the practitioners. It was viewed by Bloomfied (1933, 26) as a means by which discontinuous nervous systems are connected:

> The gap between the bodies of the speaker and the hearer- the discontinuity of the two nervous systems - is bridged by the sound waves.

Further, Henderson (op. cit., 7) quotes Fry as saying that speech is 'a communication chain with human terminals'. Both these metaphors seek to analogise, for the initiate's benefit, the

unknown with the known in order to communicate some appreciation of speech intellectually considered, and not, as is natural to him (the initiate), as a phenomenon to be taken for granted, there for all normal people to use.

1.3 The Study and Applications of Phonetics

Because it originates from mental activity formulating and needing to formulate a message, to nerve impulses commanding the organs of speech first to initiate an airstream (egressive or ingressive; pulmonic, glottalic or velaric - depending on the language and/or sound(s)), then to phonate and articulate it, which activities are all orchestrated and executed with lightning speed, and unconsciously on the part of the speaker, speech is a goldmine for research and teaching as well as a couldron of potential confusion and mystery. We therefore chop up the chain, for convenience of analysis and teaching, while remaining acutely conscious of the unitary character of the object of study. Phonetics is concerned with the accurate and exhaustive description of the individual sounds of languages. Phonology deals with both the functional distribution of linguistically significant sounds (phonemes) and the changes they undergo in order to be accommodated in the various contexts and interrelationships into which the rules of the language place them in order to mean. There is a relay-relationship between phonetics and phonology, for some, 'a naturalness condition', which Pike (1947, 57) has captured by saying that 'Phonetics gathers raw material. Phonemics (ie, phonology) cooks it'. A phonological statement is only as sound as the phonetic base from which it derives. Problems encountered in accounting for a phonological process may require a reappraisal of phonetic theory. This dependency is mutual.

Because of the demands made on phonetics as gatherer of raw material (the cook must not poison the diners), some have required it to cast its net wide. For Catford (1970),

> Phonetics . . . must be prepared to deal analytically and descriptively with any **initiatory**, **phonatory** or **articulatory** event which can possibly occur in the human vocal tract, since **at any moment** the investigation of some as yet unstudied language, of speech defects, or the study

> of the speech of children, may reveal the communicative, linguistic use of some so far unrecorded type of sound (emphasis added).

Catford is not raising a false alarm by infusing his words with some urgency. Speech pathologists and neuro-surgeons need accurate descriptions of the bubblings of dumb children, and of their aphasic patients in order to combat the problem.

Apart from its contributions to the field of speech pathology, phonetics has many applications, the most obvious of which is in the teaching of foreign languages. More recently, forensic scientists have begun to consider seriously evidence gleaned by acoustic phoneticians from recordings of a suspect's voice during the commission of a crime. This is why many banks in crime-infested cities have installed hidden cameras as well as highly sensitive cassette recorders.

Further, communications engineers need more and more sophisticated descriptions of speech in order to improve the efficiency of the telephone in transmitting messages.

1.4 Looking Beyond the Present

The future of a discipline is ensured only by a steady flow of new recruits to its ranks. Therefore, a reappraisal of its role must be closely linked to the teaching operation and the success or failure thereof. After all, the most wholesome reward for a teacher is to successfully impart knowledge to those who are destined to take over from him. This is the source of that professional satisfaction that keeps us going.

With the passage of time, and taking the troubled recent history of linguistics into account, I have developed a sermoniser's perspective of teaching, viewing the progress of the up and coming scholar as Wordsworth's Michael viewed his son:

> The shepherd, if he loved himself, must needs
> Have loved his Helpmate; but to Michael's heart
> This son of his old age was yet more dear-
> Less from instinctive tenderness, the same
> Fond spirit that blindly works in the blood of all

> Than that a child, more than all other gifts
> That earth can offer to declining man,
> Brings hope with it, and forward-looking thoughts,
> And stirrings of inquietude, when they
> By tendency of nature needs must fail.

From Wordsworth's 'Michael', 11. 141-150

The 'forward-looking thoughts' of the phonetician, as of all academics, are of two kinds: of hope that his efforts will produce at least one scholar who will step into his shoes; and of anticipation that such a product will turn the tables and come up with a more powerful paradigm than that he has been fed on for accounting for the complex phenomenon that speech is. Although this would naturally fill the old phonetician with envy, he would, like the Old Sea God of Keats' "Hyperion", be able at least to acknowledge the 'beauty' of his successor's achievement:

> Have ye beheld the young God of the Seas,
> My dispossessor? Have ye seen his face?
> Have ye beheld his chariot, foam'd along
> By noble winged creatures he hath made?
> I saw him on the calmed waters scud,
> With such a glow of beauty in his eyes,
> That it enforc'd me to bid sad farewell
> To all my empire . . .

From Keats' 'Hyperion', 11. 232-239

2.0 The Teaching Operation: Segmental Matters

In teaching phonetics to undergraduates, and this is the case here where I am responsible for our course 'The Phonology and Morphology of English', I begin by briefly explaining the neurological activity referred to above. This is followed by a more detailed, illustrated discussion of the following stages in the speech chain:

(i) airstream initiation
(ii) phonation of the airstream
(iii) resonance
(iv) articulation

(v) the acoustic phase and, finally
(vi) the perceptual phase (cf Pongweni, 1990b, 14-26).

At each of these stages it is essential to involve the learner as the subject is about what we all do when we use speech. One is concerned here to explain the biological basis of speech and, in the process, to use some of those terms borrowed from physiology and physics.

2.1.0 The Airstream Initiation.

The centrality of an air flow to the production of speech sounds is captured in the often quoted observation that 'speech is modified breathing'. This is because most speech sounds are produced by the so-called organs of speech in some way or other interfering with the flow of air out of the lungs - what we call the pulmonic egressive airstream. Its primary function is the sustenance of life as it carries oxygen into, and deoxygenated air out of the body. The teeth, various parts of the tongue, the lips and the palatal ridge are the main articulators of sounds, although their primary function is mastication. Every normal human child 'learns' to breathe and eat before they can articulate speech, the secondary function superimposed on the primary.

Although the majority of the sounds of the languages of the world are produced using pulmonic egressive air, a few use other air streams as well: velaric ingressive for clicks; and the glottalic egressive and ingressive for the so-called ejective and implosive sounds, respectively. All English sounds are produced with the pulmonic egressive airstream.

2.1.1 Phonation of Airstream.

The first stage at which the egressive pulmonic air flow is modified is when it reaches the larynx, in which are located the vocal folds/cords. These are two bands of elastic muscle which remain wide apart during quiet breathing. This is their position when we pronounce the so-called voiceless/breathed sounds, [s, t, f], for example. However, because of their elasticity, they are capable of assuming a wide variety of 'postures' in executing their phonatory function, that is, this modification of the flow of air.

For example, they touch lightly along their entire length to weakly impede the passage of pulmonic air into the pharyngal cavity and beyond. However, given their elasticity, the vocal folds are forced apart by that pulmonic air, only allowing a puff of air through and then, in a split second, they resume their original 'posture'. This process is repeated with lightning speed to give rise to those vibrations which we call 'voice'. This is what the vocal folds do in the production of so-called voiced sounds, that is, all vowels and a considerable number of consonants, thus [a, i, e, o, u; m, l, w, b, g]. The faster the vocal folds vibrate, the higher the pitch we perceive. Voiceless sounds do not carry pitch.

2.1.2 Resonance.

The 'tone' produced by the vibration of the vocal folds can be isolated instrumentally and recorded. Its quality has very little, if any, resemblance to normal human speech. The latter is the result of a filtration process by the cavities above the larynx, the supraglottal cavities of the pharynx, mouth and nose. The latter two are fixed in shape and size. But the oral cavity, because it contains many flexible organs, is capable of assuming various shapes and sizes. It almost always acts in conjunction with the pharynx, sometimes with the nasal cavity and sometimes with both.

Each shape and size of the supraglottal cavities produces a specific, physical sound quality. The infinite number of such sounds (phones) that the average speaker uses each has its own particular shape and size of these cavities to modify the laryngeal 'tone'. The function of the cavities is to amplify and enrich that tone in a process called resonance. Take any defined space and blow air into or through it, you get one sound quality; change the dimensions of that space and blow air into or through it, you get a different sound quality.

Each body, in this case, each body of air, has its own mode of vibration. It you place next to it, or introduce into it, another body of air, the first body of air will amplify and enrich those characteristic features of the second which are nearest or identical to its own.

2.1.3 Articulation.

Articulators are divided into two categories: active and passive. The former are flexible muscles and, on instructions from the central nervous system, they move to form 'strictures' with each other or with the passive ones. They include the lips, which can form a closure with each other, [p, b,m]; a narrowing of the air passage with the lower incisors, [f, v] (lower lip with upper incisors); and can be rounded [o, u, w], or spread, [i, e, j], and so on. The tip, blade, front, back and root of the tongue articulate in similar ways with the passive parts of the roof and back of the mouth, and with the back wall of the pharynx nearest to them to produce a wide variety of speech sounds.

It is important to note that we speak of discrete postures of the organs of speech merely for descriptive and explanatory convenience. In fact these movements do not occur in neat sequence but are orchestrated by the central nervous system and executed with lightning speed, as pointed out above. Phoneticians always have to remind the layman of this dynamic character of articulation by referring to these movements as constituting 'the river of speech'. In other words, speech sounds flow into and out of each other indiscernibly. The sounds are not like a series of separate drops of water knocking against each other down a precipice. In normal speech, sounds are affected by the 'colour' of the company they keep. In Gimson's (1980, 286) words, assimilation arises from 'the mutual influence which contiguous segments exert on each other'.

Apart from lack of adequate knowledge of physiology on the part of students, the dynamic character of speech sometimes baffles them, causing errors in their writing about it, as my data on this part will illustrate.

2.1.4 The Acoustic Phase.

Speech travels from the mouth of the speaker to the ear of the listener through the air in the form of sound waves. Voiced air is characterised by regular, repetitive vibration, whereas voiceless air vibrates randomly: [a, e, i, o, u, m, l, z, v] etc and [s, f, p, t] etc, respectively. • From the physicists, we have learned to analyse this phase of the speech chain by specifying the

defining features of periodic (voiced) and aperiodic (voiceless) sounds. The sound waves are complex phenomena, each consisting of several component frequencies, the most important of which is the fundamental frequency, responsible for the pitch we perceive. It is the lowest frequency of which all the others are whole number multiples.

2.1.5 The Auditory Phase.

Speech impacts the listener's ear-drum in the form of these sound waves. From there the sound waves are transmitted to the inner ear and then to the brain, specifically the left cerebral hemisphere, for decoding. Of course, if the listener's ear is bombarded with non-linguistic sound waves or with those of a language the listener does not know, then the sound waves will not be matched to the latter's innate or acquired linguistic knowledge. They strike a discordant note and are rejected.

2.1.6 Constraints to Effective Communication.

In subsection 3.4 below I list only four of the defining characteristics of the Primary Cardinal Vowel System. The fifth one is that they can be learned only from Daniel Jones or from one of his pupils. They have since been recorded and so a copy of the original would be **useful.**

This requirement, however viewed, serves to underpin not only the practical character of the system, but also that of the discipline as a whole.

The Southern African Development Coordination Conference (SADCC) comprises ten states: Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Tanzania, Zambia and Zimbabwe. This author has visited, and worked in one capacity or other in seven of their universities. Only in one of these seven institutions is there a Phonetics Research Laboratory, and one that is equipped with modern research and teaching instruments. And that is thanks to the inaugural Professor of Linguistics at the University of Zimbabwe, Brian Annan, an Abercrombie product.

In all the other institutions, phonetics is taught from books. If, despite the beneficence of the University of Zimbabwe, students

there still encounter the problems discussed in this paper, what is the experience of phoneticians in these other institutions? What are they doing to exploit that 'wealth of Bantu phonetics' which beckoned Doke (ibid) so many years ago?

2.2 The Phonetics-Phonology Interface.

The first stage at which the validity of Sweet's and Pike's claims for a pivotal role for phonetics is tested is when, in the teaching operation, explanations must be sought for changes which phonetic data undergoes in phonological and morphological processes. This is also the first stage at which that perennial problem of linguistics generally is encountered: the use of language to explain its own behaviour. Language has to be used to describe, not the world outside of itself: tragedy, irony, loyalty and disloyalty, or the objective world, but language itself using a metalanguage.

And so I teach the phoneme theory to explain how languages each use a finite set of linguistically significant segments (phonemes) derived from the infinite array of actual, contextually determined physical sounds. In this process one is at pains to establish the justifiability of the 'naturalness condition' or 'the raw material' - 'cooking' metaphor. This is called segmental phonology, as opposed to the suprasegmental, which deals with such features of language as tone, stress, rhythm and intonation.

2.3 The Teaching Operation : Suprasegmental Matters.

English is, in some phonologist's view, one of the so-called stress-timed rhythm languages. By this is meant that it is the number of stresses that determine rhythm rather than the number of syllables, in an utterance. That is to say, given two sentences with the same number of stressed syllables, they can, in certain linguistic and extra-linguistic contexts, be uttered in the same time frame, irrespective of the differences in the number of actual syllables between them. For example, of the two following sentences, the first has ten syllables, while the second has six. But each has three stressed syllables. Despite the difference in the number of syllables, the two can be telescoped into the same time frame. Thus

(a) This mo'squito is 'always in my 'ear

The 'man is 'mad al'right

This phenomenon, called strict isochronous rhythm, is of course restricted to certain domains in speech. It is usually found in verse recitation, at particular points in a sermon or political address, in utterances that betray the speaker's irritation or some other emotion, in counting and roll-calls. However, as Roach (1983, 103) has pointed out

> . . . the evidence for the existence of stress-timed rhythm is not strong. There are many laboratory techniques for measuring time in speech, and measurement of the time intervals between stressed syllables in connected English speech has not shown the expected regularity; moreover, using the same measuring techniques on different languages, it has not been possible to show a real difference between 'stress-timed' and 'syllable-timed' languages.

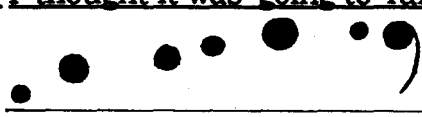
Intonation is a function of pitch movement or fluctuation in speech. This is a feature of all languages as none is spoken on a monotone. But the role which such pitch fluctuation fulfills in the languages of the world is the basis on which they are divided into the two broad categories of tone and intonation languages. The former make lexical use of pitch fluctuation while the latter use the same merely to add shades of meaning to the lexical meanings of words. In Shona for example, we have such minimal pairs as: /rìmà/: 'plough'/'cultivate' vs/rímà/, 'darkness',/ìmbá/, 'house' vs/ímbá/,'sing', demonstrating the lexical use of pitch contrasts.

Both rhythm and intonation are difficult to teach on the part of the lecturer who is himself an L2 user of English, and also because the L2 students resist what some view as an attempt to anglicise them. And yet the rendition of the crucial expression 'Thank you' for example, can make or break a liaison, depending on how and in what circumstances it is uttered. We also need to be aware of the semantic difference effected by intonation on what are apparently identical sentences such as

I 'thought it was 'going to 'rain

, and it did.

and, I 'thought it was 'going to 'rain



, but it did not.

The last time that I addressed this matter (Pongweni, 1990a), I wrote as follows:

> In teaching the pronunciation of English in an L2 context, the need for a target model is imperative. And the criteria for identifying such a model are clearly set out by Gimson (1980, 302): it must be a model with a 'wide currency'; it must be 'widely and readily understood' and, lastly, it must be one that is 'adequately described in textbooks and has ample recorded material for the learner'. 'Received Pronunciation' (RP) fits the bill.
>
> The question then arises, whether to demand that one's students should attain native-like RP performance . . . Gimson (1980, 304) recognises the problems immanent in certain English teaching contexts, especially in Africa and Asia. English and, consequently, recorded materials may reveal a discrepancy between the teacher's performance and the model. Given these limiting facts, there is a need to allow some latitude in the quality of the target to be achieved.
>
> Gimson (1980, 303-4) identifies three such targets: one termed the requirement of 'minimum general intelligibility', the second, that of 'high acceptability', and the third one, that of 'restricted intelligibility'. For this author, a compromise variety of English pronunciation between the first two is the best one can hope to achieve, given the

> constraints of time available on the curriculum, the age of the students and their motivation, and the fact of the majority of teachers being L2 speakers themselves.

The data that I have collected requires that we retrace our conceptual foot-steps to near the middle of this discussion, where I outlined the manner in which I introduce students to phonetics. This material does not consist of errors of execution by the students. It comprises errors of cognition, the failure to grasp the concepts of phonetics and the physiological activity that they seek to explain. In an L2 context practice is preceded by deliberate, conscious effort to understand these goings-on.

3.0 Feed-back from Teaching Operation: Errors and Problems of Analysis

My colleagues, and others who have given these matters some thought, will agree with me that the manner in which I have categorised the errors could be improved. My difficulties are to do with errors that seem to have been triggered off by the loss of confidence in the student's own ability to cope with the unfamiliar. It seems to me that at that point the student fails to demystify the unfamiliar because of the absence, in his world-view, of an explanatory analogy linking the known to the unknown. A good example of this is the student who presented the following thoughts on the relationship between pitch and tone:

> The words together **hand in hand** explain each other: pitch and tone, the differences must just amount to sameness. Pitch **fluction serves** from monotony. Tone is **a term** which **perceives** pitch. Tone has a lot to do with pitch. No language is spoken in **monotony**.

Even if the words 'pitch' and 'tone' were synonyms, I do not know that we could metaphorise that relationship by saying that the two work 'hand in hand'. As for the differences amounting to sameness, I am at a loss to find a Shona equivalent that could be said to have interfered. This sounds rather like the outpourings of a mind irritated by its own failure to grasp concepts probably poorly presented in the first place. 'Pitch **fluction serves** from monotony' is the student's own

version of 'Pitch fluctuation saves the ear from monotony'. That is to say that in every human language, whether it be a tone or an intonation one, there are pitch rises and falls when it is spoken. And the student's last sentence could have been his attempt to remember Abercrombie (1967). 'No language is spoken on a monotone'. Finally on this one, I deny categorically that I ever suggested that 'Tone is **a term that perceives pitch**', or whatever.

3.1 Is it 'Cognitive Dissonance'?

In my search for a possible scholarly explanation for the problem above, I have come across the psychologists' theory of **cognitive dissonance**, 'which is based upon the observation that most people cannot tolerate more than a specific degree of inconsistency in the environments they perceive' (Gordon, 1990). Our student comes to university after a rigorous process of screening through examinations sometimes prepared for and written with the barest of facilities. Admission to university represents indisputable testimony to his capabilities. The latter institution is usually relatively more generously endowed to enable him to excel. Then along comes a discipline that threatens the very foundations of his self-confidence. Gordon continues, 'The dissonant or inconsistent elements include (the student's) knowledge of his skill and the fact of his poor score' in class.

To reduce this tension-dissonance - the (student) may change his behaviour or misinterpret or reinterpret the dissonant elements in order to lessen the difference between the facts.

In the process such a student may blame his poor showing on the lecturer (sometimes justifiably), on the weather conditions prevailing at the time of writing the examination or assignment, on time pressure, and so on.

Thus he seeks a psychological equilibrium.

3.2 Is it Interdisciplinary Interference?

There is a category of errors which I have attributed to interdisciplinary interference. In the context of cognitive dissonance and the concurrent search for a 'psychological

equilibrium', these errors seem explainable by theorising as follows. The student's self-confidence is corroborated by his performance in the majority of his courses except one. He perceives the concepts of the recalcitrant course through terms which have become dominant in his mind because of their successful application in the other courses.

This possible scenario would seem to account for the following errors:

(a) '[f] if a fricatife sound', instead of
(a) (i) '[f] is a fricative sound'

Has my literary colleague been teaching alliterative verse so well that it now comes oozing from our student's pen? The alliteration of (a) does not come only through the five underlined fricative sounds but also from the fact of their being all voiceless. The voiced [z] of is and the [v] of fricative would have interrupted this alliterative marker which binds the consonants in their voicelessness. This probably brings into question the efficacy of the widely used teaching practice whereby students are advised to pronounce a sound even as they are describing it (in an assignment) in order to both hear the sound and feel vocal organ movements.

(b) 'Phonemes involve entities using criteria such as CONTRAS'
(b)(i) 'Phonemes are discovered using criteria such as CONTRAS' (contrastive distribution)

'Entities' probably comes from sociology or some other discipline. But 'contras' is almost certainly the contribution of political science at a time when Nicaragua was topical.

(c) 'The soft palate forms a **blockade of the naval cavity**' (when oral sounds are being articulated), instead of
(c)(i) 'The soft palate **blocks** the passage to the **nasal** cavity . . .'.

The word 'blockade' usually collocates with 'naval' in military discourse. In fact if the student had bothered to consult a dictionary such as **Collins**, this is what he would have found:

the interdiction of a nation's sea lines of communications, especially of an individual port by the use of sea power.

This (c) seems clearly to have been imported from the study of imperial history, or warfare generally. When phoneticians, instead of using the verb 'blocks' in (c) (i), nominalise it, they use 'blockage'. And this is where the lecturer who is an L2 speaker of English may be partly responsible for the problem. The military noun has stress on the second syllable thus, 'bloCKADE' with a diphthong [ei], whereas the phonetician's is stressed on the first thus, 'BLOCKage', where the vowel of the second, unstressed syllable is [I]. Did the lecturer mix up his stress patterns and say 'The soft palate forms a bloCKADE'? In both instances, the vowels in **-CKAGE** and **-CKADE** will have been telescoped into the Shona [e] (cf Pongwani, 1990a).

(d) 'There is a **breath-taking** pause between rhythm groups', instead of explaining that the English intonation tune is made of rhythmic groups between which the speaker breathes, taking in more air into the lungs. The student's 'breath-taking' participial adjective has obviously come from other domains where 'awe' and 'excitement' are appropriate labels for describing human behaviour.

But 'breath-taking' is probably appropriately used by another student who wrote of the speech chain,

(d)(i) An attempt to describe what really happens and how it happens from the mouth to the ear - might be a hair-raising or breath-taking one because as Ladefoged says, 'as each word is uttered it ceases to exist'. Be that as it may, that is not the end of the story, because it would be logical to try to explain the physics of hearing without necessarily using machines!

In the last part of the above the student is pleading not to be taken to the laboratory.

3.3 'Opportunistic' or 'Parasitical'?

Another category of errors that present problems of explanation and, therefore, of correction is one that I shall call 'opportunistic'

or 'parasitical'. Once the student has fallen prey to cognitive dissonance and interdisciplinary interference, these other errors seem, as it were, to jump on the bandwagon.

(e) In articulating stop consonants, the vocal organs form a **clossure**, followed by **pressure builts-up** and the release followed by **plossure**.

Why should the word 'pressure', correctly spelt, cause the student to misspell 'closure' as 'clossure', and to invent a word 'plossure' instead of using 'plosion'? Whereas in his second error (f), where [ʃ] is characterised as a **hishing** sound (instead of **hissing**). the student could have been pronouncing the sound as he wrote, I doubt that he was pronouncing 'klosha - presha - plosha' as he wrote the first time. The distinction between /ʒ/ and /ʃ/ is easily made by all Shona speakers:

/ʒárá/ - hunger

/ʃárá/ - choose

The above student's classmate also invents and mispells some words, in addition to being tautological:

(g) Then there is a **radicle** release of air after closure and there is a **plossure** which is the result of the release of air which was separated by the closure.

I often characterise plosion as the auditory feature we perceive when two bodies of air (atmospheric and articulatory), with one at a higher pressure than the other, are suddenly brought together following the **radical** release of the closure that originally separated them.

On the same subject of non-continuant sounds, I got the following effort to describe ejectives. These latter are like the sound at the beginning of Setswana 'tsamaya':

(h) The glottalic egressive airstream **mechanic** produces ejectives. Such sounds are accompanied by an **apostle phee** such as p', t ' and ts'.

We speak of 'airstream **mechanisms**' to refer to all those parts of the speech tract that move to set a body of air into motion, making it flow either out of or into the speech tract. These include the diaphragm, the intercostal muscles (sometimes called 'inter-coastal' by my students!), the lungs and, in the case of ejectives, the larynx, with the vocal cords tightly closed. To push air out of the lungs, the diaphragm assumes the shape of a **dome**. This has often given the students an opportunity to express their fatalism:

(i) The diaphragm is **doomed** in order to push air out of the lungs!

These opportunistic errors extend as far as interfering with attempts to recall the names of authors:

(j) The primary cardinal vowel system was devised by Daniel **and** Jones.

The famous phonetician's name was Daniel Jones.

(j)(i) **Bloomfontein** and the American Structuralists.

I have referred to **Bloomfield**'s work in section 1 above and, most curious among the curious,

(k) Complementary distribution was described by Pike, a technician in the reduction of a language to a writing system.

After discussing the phoneme theory, and the criterion of complementary distribution in particular, I normally refer the students to Pike's classic definitions of that and other criteria. These are to be found in his 1947 book, from which the 'raw material-cooking' metaphor (above) comes: **Phonemics: a technique for reducing languages to writing!**

Other errors of the same type, which do not need further discussion, are:

(l) The vocal cords are wide aparts

(m) The voiced dental tricative [ð] and

(n) The tip of the tongue against the tip ridge.

There is a distinct possibility that (n) is due to the lecturer or student or both pronouncing 'teeth' as [t̪ɪθ], instead of [ti: θ]. The fricative and the plosive, being both voiceless and anterior, are easily confused, with [t̪] being 'preferable' to [θ], a 'foreign' sound.

3.4 Mother-tongue Interference

Finally, there are among the data discussed in this paper, errors that emanate from mother-tongue interference. The first of these arises from the student's attempt to understand the cardinal vowel system's function in the description of the vowels of particular languages through a simile often used by teachers of phonetics. The cardinal vowel system has the following characteristics:

(i) they lie on the periphery of the vowel area in the mouth
(ii) they are not the vowels of any language
(iii) they serve only as reference points in the description of the vowels of a language
(iv) they are thus invariant in their quality

Because of their invariant quality, they are said to be like the points of compass: if the latter pointed in one direction for North today, and then to a different direction for North the following day, explorers and travellers would never know where they were. Our student wrote

(o) The cardinal vowels **have been equalled** to the points of a compass

This is a direct translation from the Shona **enzaniswa**, that is, 'to be regarded as the same (in size or quality) as . . .'.

Secondly, in describing the flow of air from the lungs out of the speech tract, we say it may exit through the mouth (if the nasal passage is closed), or through the nose (if the mouth is closed), or through both (if there is no obstruction in either). Whichever way the air flows depends on the nature of the sound that is

being pronounced: oral, nasal or nasalised, respectively. This has given rise to

(p) **Air has a choice** of either going through the mouth or the nose or both, **depending on the wishes of the speaker.**

The semantic features of 'air' include [-human, -animate], which excludes 'air' from those words that can serve as the subject in the frame

'_____ has a choice', in English.

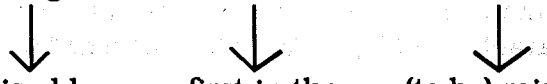
But in Shona the equivalent structure would be

Mweya unogona kubuda . . .

Lit: air is able to exit . . .

However, this student also misconstrues the Shona expression in that 'is able (to)' means 'there is a possibility that air will . . .'. This is found in Shona

kunogona kufuma kuchinaya



Lit: it is able first in the morning (to be) raining

There is a possibility that it will be raining come daybreak.

But, may be subconsciously, the student seems to know that air cannot make a choice, since such choice is said to be dependent 'on the wishes of the speaker'.

The same incongruity in the semantic features of words used is found yet again in

(q) If there is any friction, the resulting **sounds would rather be** fricatives than vowels.

The modal verb 'would' functions in such grammatically well-formed structures as

I would rather be poor and happy than rich and miserable.

in which a human subject expresses volition.

Inadequate vocabulary or the injudicious use thereof manifests itself in

(r) 'Allophones occur in different **atmospheres**', instead of **environments**.

and in

(s) 'Minimal pairs differ only in one **incident**', instead of **feature**, or the more general **respect**.

Lastly, just as the 'Air has a choice . . . depending on the wishes of the speaker' example strays into the domain of the skewed perception of democracy, so we have the following which, through its indelicacy, clouds a valid phonetic observation:

(t) When vocal cords vibrate very fast, the pitch is higher. The auditory phase is interfered with since it has to record the sound faster than when a man speaks. Women's voices are characterised by higher pitch perception.

The fact of the matter is that the lowest pitch that the normal human ear can pick is said to be at the 'threshold of audibility'. On the opposite end of the scale low-to-high, a pitch that is just higher than the ear can tolerate is at the 'threshold of pain'. That is why in recent years some aeroplanes have been scrapped (as should some disco D.J.'s) or modified - they threatened the health of the community.

The last sentence in the example above seeks to make the point that when women speak they, on average, attain higher pitch levels as compared to the average man. As it stands, that sentence is ambiguous as to who or what does the perception, the listener or women's voices - and that is to give it the most generous interpretation.

4.0 Conclusion

In this paper I have identified a number of problems that, in my view, beset the discipline of Phonetics. These range from the phonetician's hyperbolical conception of it, the consequent sceptical response of fellow academics in our context, the intimidatory character of Phonetics discourse, which probably explains the complex errors that we get as feed-back from teaching, to the sensitive questions of the target model of the pronunciation of a second/foreign language which phoneticians should expect their students to achieve and pass down to the schools. The fact of the overwhelming majority of us teachers in the region being second language users of English has been highlighted here as an equally intractable problem - hence the question in the title of my paper.

As for the errors themselves, a tentative categorisation has been proffered, together with an explanatory discussion that might lead to the development of teaching materials that will alleviate the situation.

Until fairly recently, universities have assumed that the acquisition of a senior degree demonstrates not only the candidate's academic competency, but also his ability to teach, and teach successfully. However, the very gap between the demands of research and application has persuaded many an institution to set up University Teaching and Learning Method (UTLM) centres, at which the returning SDF is exposed to both the problems of communicating effectively with the student and the possible methods of combating these. Those new recruits to university teaching who already have teaching qualifications and experience are, of course, streets ahead of the rest of us.

But I have myself often wondered whether my phonetics laboratory acquired knowledge of human physiology, albeit confined to that of the speech tract, and of the physics of the sound wave, is adequate for the task before me. Would not a UTLM centre provide the opportunity for an interdisciplinary approach to teaching that would clear these doubts? Cognitive dissonance, if that is part of the problem, might become better understood in team-teaching operation with educational

psychologists, as would problems of understanding the physiological and physical basis of speech, if we collaborated with colleagues from those areas.

We in the Humanities have produced books on 'English for Students of Science', in collaboration with scientists. May be we could also have them produce some on 'Physiology' etc for students of phonetics, in collaboration with us.

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