

Articulatory Setting and Language Teaching

Edward T. Erazmus

University of Kansas

Introduction. Articulatory setting is defined as the predetermined positioning of articulators in a language, which, together with their resultant movements, produce the characteristic sounds of that language. The term "articulatory setting" is attributed by Wadsworth (1979) to Beatrice Honikman (1964) who provided a classical description of the articulatory setting of English in a language teaching context. While articulatory setting theory has some currency in European circles, it seems relatively unknown among American linguists. Honikman's treatment appears to have received little recognition and it is the purpose of this paper to support the theory by presenting a number of generalizations drawn from the phonological data, which may serve to give the theory greater visibility and coherence.

The articulatory Setting of English. As Honikman observes in her treatment of English setting, the central feature of articulatory setting is the anchorage or tethering of the tongue. In English, the anchorage is described as the placement of the sides of the tongue laterally on the upper back molars, up to the point of the pre-molars, from which point the forward blade and tip are suspended and free, and in position to make closure on the alveolar ridge for the high frequency phonemes of English [s,z,t,d,n,l,r] and the related phonemes [š,ž,č,ǰ,θ,ð]. The back anchorage on the molars considerably limits the movement of the tongue, but, on the other hand, the tongue tip is set in position for the economic articulation of the predominating alveolar consonants, their extensive clustering phenomenon, and the plethora of English vowel phonemes which are articulated from this position by relatively slight movements of tensing, forward and backward movement, lip rounding, and jaw lowering. Most speakers of English are completely unaware of the anchorage phenomenon until it is called to their attention. Articulatory awareness extends to the occluding portion of the tongue, namely, the tongue tip and its interplay with the alveolar ridge, but not to the anchorage, which is the most crucial part of English phonology just as it is in every language.

In the progress of this paper I shall present some basic arguments of the theory through generalizations which follow from

phonological observations. These generalizations are, for the most part, implicit in Honikman but require a fuller explicit restatement. The first of these generalizations provides that each language has a unique articulatory setting, that is, the crucial settings of one language are not duplicated in any other language. This corroborates the well known theory of the uniqueness of phonemic systems. It also conforms to our intuition that no adult normally learns a second language without passing through a foreign accent stage in the process. It is evident that in learning a second language we simply do not add new phonemes to an existing repertoire in our native language and take off in the second language from that point. A new system has to be developed which operates beside and apart from the native system (Fries, p. 10).

A second generalization has to do with the nature of anchorage, which, as we have noted, is the core of articulatory setting theory. In this generalization, anchorage is defined as the fixing of one portion of the tongue to a specific hard surface in the inner mouth, the hard surface being primarily the teeth, upper or lower, and the gum areas around the teeth. The portion of the tongue not fixed or anchored to a hard surface becomes the main articulator for the internal frontal consonants and the vowel system. As we shall presently observe, any portion of the tongue from tip to back can serve as the anchorage contact point. Anchorage may be viewed as a functional necessity in language, providing for economy of articulatory movement in a given system and guaranteeing uniform speech in the speech community, no matter how extensive the speech community, geographically or numerically.

The Articulatory Setting of French. In addition to English setting, Honikman provides a detailed description of the articulatory setting of French. The anchorage of French is produced by placing the underside of the tip of the tongue on the cutting edge of the lower front teeth. This puts the tongue relatively far forward in the mouth and portions of the tongue become visible in speech to some degree. Some interesting phonological features may be noted as a consequence of this front anchorage.

It is important for analytical and discussion purposes to consider the anchorage as static or rigid even though in speech the tongue is in constant motion. The anchored part of the tongue has some freedom of movement about a fixed locus, analogous to the bobbing of a boat or ship while at anchorage in a body of water. The anchorage or static setting being described for French is not difficult for any person with a measure of articulatory perceptive-

ness to approximate. One of the effects of this setting or anchorage can be readily perceived by saying the English word "red" with the anchorage held firmly, that is, bottom of tongue tip resting on the cutting edge of the lower front teeth. We are forced to produce a uvular "r" (or something akin to one), which is one of the most characteristic sounds of French. Given this front anchorage, the uvular "r" is the natural output for words containing an "r" which French inherits from its ancestral tongue in common with other European languages. Thus, the uvular "r" is not some mysterious manifestation of the French ethos but a simple phonological fact that one cannot produce a trilled, or tap, or retroflex "r", which are the usual options in other languages, with the tongue glued, as it were, to the top of the lower front teeth. The uvular "r" is the natural result of a specific anchorage and the wonder of this is that anybody who can follow a simple instruction in manipulating the tongue while articulating can produce it with probably a modicum of effort.

A second prominent feature of French is the nasalization of vowels as appears in words like important, conséquent, etc. These nasals are also a consequence of front anchorage. In French, the [m] and [n] consonants are articulated in numerous words but in post-vocalic position the supra-lower front teeth anchorage makes difficult or inconvenient the occlusion of labial [m] and alveolar [n] and the nasality feature is shifted to the preceding vowel, rendering it a nasal vowel. Another way of saying this is that given the anchorage, economy of movement voids the occlusion of [m] and [n] in post-vocalic position, rendering the preceding vowels nasal.

A related phenomenon worthy of note occurs in the French indefinite article. The masculine form un is pronounced as a nasal vowel [œ̃] with the deletion of [n], a function of front anchorage, while the feminine form of the word is pronounced [yn], with the retention of the [n], possibly due to it being felt as intervocalic. The vowel of the latter, however, is unlauded, that is, the [u] is fronted, also a consequence of the front anchorage. Thus, the base morpheme for "one" exhibits a totally different phonetic realization in its masculine-feminine forms due to the intrusion of front anchorage.

In her French example, Honikman makes reference to the external articulatory settings of French, such features as lip-rounding, tongue protrusion, sunken cheeks, jaw dropping, etc. Their usefulness in the teaching of French pronunciation is evident, but we should be quick to point out that the chief determiner in the articulatory setting domain, both inner and outer, is the anchorage

and that other related features are secondary and derived. Honikman notes the relationship but it must be emphasized that the anchorage on the top of the lower front teeth in French results naturally and necessarily in rounded lips, elongated cheeks, visible tongue, etc., and it will happen to anyone who tries the setting. In fact, to use the French anchorage while speaking an English sequence of words will result in a prominent French accent, while, conversely, speaking French with the English anchorage results in an English accent or fractured French. Yet, how many hours of our teaching lives are spent in doing the unnatural, that is, forcing our students to produce the sounds of other languages while completely oblivious to the role of articulatory setting, much to the misery and confusion of our students and to our own frustration when we fail to achieve results. The foregoing discussion leads to a third generalization, namely, that the anchorage of a language determines all other articulatory features of the language which become secondary, derived and proceed naturally from the anchorage-setting.

Polish Articulatory Setting. The English and French articulatory settings discussed above are derived from Honikman. The anchorage of Polish will be described at this point and this represents my own analysis. In Polish, the tongue tip is placed or anchored on the lower front teeth gum line with a small amount of pressure exerted. This is the static setting of Polish. As the jaw drops in the process of phonation, the blade of the tongue bevels outwardly, with the sides of the tongue maintaining contact and sliding forward laterally on the upper teeth. Polish is a member of the Slavic language group, a chief feature of which is the phenomenon of palatalization. A simple Polish sentence written in broad transcription, [ya nye vyem tso to yest] and translated, "I don't know what this is," shows the ubiquitous presence of palatalization in the recurrence of the "y" symbol.

The low front tongue tip anchorage predisposes the tongue for a palatalizing "y" glide along the upper front teeth and alveolum which is readily incorporated into the stream of consonants and vowels. The front anchorage of Polish is quite accessible to view, easy to demonstrate to viewers, and relatively easy to imitate. Informal experiments in an ESL methods class show that students were able to produce an acceptable pronunciation of Polish in their first efforts at mimicry.

An interesting feature of Polish phonology are its nasal vowels. We have already discussed French nasal vowels which were attributed

to the forward tongue anchorage of French. In Polish a similar situation maintains. The deep front anchorage of Polish disposes the post-vocalic nasal "n" to assimilate to the preceding vowel for the same reasons noted in French, namely, economy of movement, dictated by anchorage, precludes the articulation of alveolar "n" in post-vocalic position.

Another item of phonological interest in Polish is the manner of occluding the so-called alveolars with the low front gum anchorage. For the stop [t] and sibilant [s] the tongue tip is anchored on the lower front gum as the anchorage dictates. In articulating the [t] the tongue tip rests on the lower gum, the forward blade on the lower teeth and the posterior blade on the upper teeth and alveolar ridge. The occlusion for [s] is similar except that the slit necessary for the sibilant starts at the upper teeth and a sharp, whistle-like "s" is sounded. English affricate [č] and palatalized sibilant [š] have counterparts in Polish with the exception that they are produced with the front anchorage already described. However, Polish has an additional non-palatalized affricate and sibilant referred to as a "whispered" series, made with the tongue retracted into the mouth slightly, causing the tongue tip to lose touch with the lower front teeth briefly, though a light touching of the lateral sides of the tongue to the lower and upper teeth persists.

From the Polish data we deduce a fourth generalization which states that similar consonants and vowels across languages are articulated in an entirely different fashion and any linguistic description or pedagogical effort that attempts to equate such phones without making distinctions is doing violence to the facts. It is pedagogical folly to assume that isolated, difficult phonemes should receive our attention while supposedly "easy" or near approximations in the two systems can be dismissed or by-passed as irrelevant. The pedagogical goal should be the establishment of a totally new system, parallel to but completely independent of the native language with no crossovers, compromises or near misses permitted.

Language Learning and Articulatory Setting. While the anchorage of the tongue in any language provides the system with economy of movement and guarantees uniformity of speech through the speech community, it mitigates against the easy transfer from one phonological system to another. The single most difficult area in the learning of a second language is the phonological component. The phonological block appears visibly in the form of foreign accent which no adult learner succeeds in avoiding. The foreign accent is not a

cavalier matter, but rather a traumatic, agonizing and even shameful struggle of the inner personality trying to cope with a phenomenon that is beyond its immediate grasp (Erazmus, 1980).

An ancillary thesis of this paper is that the phonological block and the foreign accent, while not avoidable, can be considerably mitigated in the language learning process. To a large extent problems in phonology are the consequence of our ignorance of what happens in the articulation of language. If every language has an anchorage different from others, the hard way to learn a second language is for the learner to use the anchorage of his own language as a basis for uttering the sounds of the target language. The consequences are disastrous. Yet this is the way most, if not all, language learning is done. On the first day of class we provide spoken models in the target language and expect the students, willy-nilly, to "get with it." The student responding with intuitive psychological defenses, transforms the foreign sounds into their nearest native equivalents at the behest of his native articulatory settings. Language pedagogy, ignorant of the issues, offers little guidance to the helpless learner. Quite the contrary, our audio-lingual methods of forced production simply compound the trauma the learner experiences and in this country we are at the present time witnessing the slow demise of foreign language teaching. Speaking with a foreign accent is dehumanizing and learners will not willingly put up with the torture if they can conveniently avoid it, which is the direction things are going in our schools at all levels.

My own experience in the use of anchorage as a functional element in the teaching of English is limited and at this stage I can only indicate directions such practice might take. Honikman provides an unequivocal cue, "I would therefore say, establish the setting first, than the details of articulation" (p. 85). Within the context of this paper I would recast this as our fifth generalization, namely, the beginning point of all audio-lingual work in language teaching is the establishment of the anchorage of the target language in the speech of the learner.

In practice, I would raise the consciousness of anchorage in the mind of the students by referencng to the anchorage in their own language which is the source of phonological interference. In English classes of mixed national backgrounds, I find that linguistically naive students have some vague awareness of the anchorage in their own language. The anchorage of the target language can then be advanced. Because of the physical reality of anchorage or what I have called "static setting", it is quite possible to orientate the student to the target setting in a gross way with rela-

tively little instruction. Advanced and intermediate students I have taught accept the notion readily. The learner should become aware of two anchorages, the native and the target, and, if possible, become his own monitor for the purposes of keeping them apart and controlling crossover and contamination of systems. Modelling of the target language should be done by native speakers as the articulatory settings and the phonemic system of a language are so crucially intertwined that a deviancy in one or the other will create an effect on the learner's output. Whether the task of projecting articulatory setting instruction and awareness would lop off hundreds of hours of drill and frustration and induct a student directly into the heart and beauty of another phonological system, as we theoretically hypothesize, remains to be seen.

Conclusion. In summary, I would like to recap the generalizations offered in this paper as presented in the order of their occurrence.

1. Every language has a unique articulatory setting (anchorage) which is the basis and controlling factor of the phonological output of the language.
2. The anchorage, which is the basis of articulatory setting theory, consists in the rigid placement of one portion of the tongue on a given hard surface inside the mouth, namely, the teeth and/or gums.
3. The anchorage is central to articulatory setting and determines all external and internal positioning of articulators and plays an overriding role in the entire phonology.
4. The identity of phonemes across languages is illusory from the articulatory setting point of view and the phonology of a second language must be learned as a completely autonomous system.
5. The beginning point of all second language learning is the establishment of the anchorage of the target language together with an awareness of the native language setting and its competing nature.

Articulatory setting theory as seen from the view of the individual language, that is, with the anchorage being crucial to the correct production of the sound system, offers us hope that, given the proper use of our knowledge, the transfer from one system to another can be greatly facilitated. In addition, there is hope that the correct setting achieved early in the learning will speed up the entire language learning process and will prove an entry for the learner into the pleasures and beauties of second language learning.

REFERENCES

- Erazmus, Edward. 1980. The basis of foreign accent. Paper presented at Midtesol Conference, Ames, Iowa, April, 1980.
- Fries, Charles C. 1945. Teaching and learning English as a foreign language. Ann Arbor: University of Michigan Press,
- Honikman, Beatrice. 1964. Articulatory settings. In In honour of Daniel Jones, ed. by Davie Abercrombie, et. al. London: Longmans, 79-84.
- Wadsworth, Stafford. 1979. Articulatory settings: mechanics of variety. *Revue de Phonétique Appliquée* 52.255-269.