

# THE FUNCTIONAL LEVEL OF ARCHIPHONEME

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In this paper, I propose to discuss a problem relating to the functional level of the archiphoneme; IS AN ARCHIPHONEME TO BE POSITED AT THE SUBPHONEMIC LEVEL?

The problem is indeed a perplexing one, since the notion of archiphoneme generally held by its advocates, admitting the absence of total agreement among them, hardly raises it. Yet the problem HAS been raised and given an affirmative answer by some functionalists themselves, notably by Vachek, though without sufficient explicitness, as one of the grounds on which they have put forward a proposition for abandonment of the notion of archiphoneme, at least in syntagmatics. Incidentally, Vachek's point of view involving two other main grounds as well about the abandonment of the notion of archiphoneme can be found in Vachek (1966:62). Notice further that he describes *archiphonème* as "terme abandonné après 1939" in Vachek and Dubsky (1966).

It is only fair to specify at the outset that it is Martinet's notion of archiphoneme, as distinct from Trubetzkoy's, that I subscribe to and on the basis of which I shall be presenting my argument about the problem proposed above. Martinet's notion of archiphoneme is couched *inter alia* in Martinet (1967:77-78) in the following terms: "Si le phonème est défini comme la somme des traits pertinents, l'archiphonème, lui, est l'ensemble des traits pertinents, communs à deux ou plus de deux phonèmes qui sont seuls à les présenter tous", and also, in connexion with neutralization of consonantal phonemes in Russian, "On a... une seule unité distinctive qui, pour ainsi dire, coiffe les deux unités correspondantes en position prévocallique et qu'on appelle archiphonème."

Some of the essential points contained in Martinet's formulation of archiphoneme which are relevant to my argument are as follows. Firstly, an archiphoneme subsumes under it the pertinent phonemes, the opposition between which is valid in position of relevancy but ceases to be so in position of neutralization where the archiphoneme is set up. Secondly, an archiphoneme is the sole distinctive unit in position of neutralization, which means that neither of two or none of the pertinent phonemes can in this position operate either additionally or vicariously for the archiphoneme. Thirdly, an archiphoneme is a distinctive unit UNIDENTIFIABLE with

either of two or any of the phonemes it is said to subsume under it since any such phoneme ceases to exist in position of neutralization. And fourthly, the relevant feature or features by which an archiphoneme is characterized represents the common denominator of the relevant features of both or all the phonemes it subsumes under it. I wish to call your special attention at this juncture to the fact that by the expression THE SUBSUMED PHONEMES which I shall be using for sheer convenience's sake later in my paper, I never imply that the phonemes which an archiphoneme subsumes under it continue to operate in position of neutralization just as in position of relevancy.

The present problem is precisely that of what functional level should be attributed to an archiphoneme; in other words, whether the archiphoneme should be considered to be functional or non-functional, or still in other words, whether it is phonologically relevant or irrelevant. Functional relevancy in question refers to the distinctive function which is central to the phoneme as defined by functionalists. It follows that to posit an archiphoneme at the subphonemic level is equivalent to considering it as non-functional or phonologically irrelevant since a unit posited at this level is not endowed with the distinctive function, and that on the contrary to posit it at the phonemic or hyperphonemic level is equivalent to considering it as functional or phonologically relevant. I shall now examine the question of the functional level of the archiphoneme in both paradigmatics and syntagmatics.

First in paradigmatics. Linguistic signs forming minimal pairs, whether by virtue of an opposition between a phoneme and an archiphoneme such as *stall* /sTòl/ — *small* /smòl/ (Engl.), *Rad* /raT/ — *rar* /rar/ (Ger.) or *paire* /pEr/ — *pire* /pir/ (Fr.) or by virtue of an opposition between archiphonemes such as *stall* /sTòl/ — *spall* /sPòl/, *Rad* /raT/ — *rag* /raK/, *paire* /pEr/ — *peur* /pœr/, clearly indicate that an archiphoneme is phonologically relevant. This means that an archiphoneme is to be considered as a distinctive unit, a functional as opposed to non-functional unit, just as a phoneme is. This means again that an archiphoneme cannot be posited at the subphonemic level, that is, at a level where a unit cannot function distinctively *vis-à-vis* a phoneme. Incidentally, it is impossible to cite any minimal pairs which might exist by virtue of an opposition between an archiphoneme and one of the 'subsumed phonemes', but of course this is because an archiphoneme occurs to the exclusion of the 'subsumed phonemes' in position of neutralization and therefore the archiphoneme and the 'subsumed phonemes' are mutually exclusive, mutually non-oppositive and mutually non-commutable.

None of the minimal pairs cited above, however, directly suggest the exact functional level of an archiphoneme in relation to a phoneme. In an attempt to determine the functional level of the archiphoneme, let us first consider cases where the phoneme is one of those subsumed under the archiphoneme (e.g., /T/ — /t/, /d/). There are indications that an archiphoneme should potentially be posited at an appropriate functional level, that is, a phonologically relevant level, but one which is not identical to that at which the 'subsumed phonemes' are posited. First, the relation of subsumption between an archiphoneme and 'subsumed phonemes', which suggests that the archi-

phoneme is to be posited at a level which is different from that of the 'subsumed phonemes'. And second, the fact that the relevant feature or features of the archiphoneme represents the common denominator of those of the 'subsumed phonemes', which also suggests different functional levels for the archiphoneme and the 'subsumed phonemes'. Since an archiphoneme and the 'subsumed phonemes' are to be posited at two different functional levels and furthermore, the distinction between the functional and non-functional levels is discrete and admits of no intermediate level, the archiphoneme is necessarily posited at the HYPER-PHONEMIC level, but, and this is important, not at the subphonemic level. Actually, both the relation of subsumption and the factor of the common denominator will have already suggested for an archiphoneme a functional level logically higher than that for the 'subsumed phonemes'. In like manner, an archi-archiphoneme (e.g., an archi-archiphoneme of 'nasality' in Japanese) will be posited at the hyperphonemic, or to be more exact, hyper-archiphonemic, level.

In cases where the phoneme is NOT one of those subsumed under an archiphoneme (e.g., /T/ — /m/), it would apparently seem that an archiphoneme and a 'non-subsumed phoneme' are to all intents and purposes posited at an equivalent functional level since they are mutually non-exclusive, mutually oppositive and mutually commutable while being both of them distinctive units. The mutual relation between their functional levels is after all rather obscure at first sight simply because no such direct relationship exists between them as between an archiphoneme and the 'subsumed phonemes'. What prevents such an interpretation is of course that all the phonemes of a given system, whether or not subsumed under archiphonemes, are posited at an equivalent, phonemic level, and the hyperphonemic level of an archiphoneme earlier established in relation to the 'subsumed phonemes' can legitimately be extended to apply in relation to 'non-subsumed phonemes' as well. At any rate, one can again conclude that an archiphoneme cannot be posited at the subphonemic level.

One can thus conceive of a hierarchy of functional levels for distinctive units from the phonemic level upwards, which globally distinguish themselves from the non-functional or subphonemic level. One can then envisage possibilities of opposition between distinctive units posited at different levels within a hierarchy of functional levels, for example, between phonemes (/mæt/ — /bæt/), between a phoneme and an archiphoneme (/sTòl/ — /smòl/), between archiphonemes (/sTòl/ — /sKòl/), between archi-archiphonemes (/ka~ko/ — /kaQko/), etc.

One will thus be justified in concluding from the foregoing that in paradigmatics, an archiphoneme should be posited at the hyperphonemic level, and not at the subphonemic level as Vachek claims.

We shall next take a look at the functional level of archiphoneme in syntagmatics. The SIGNIFIANT of a linguistic sign is accounted for in its entirety, on the phonematic level (that is, as against the prosodic level) by an ordered series of minimal distinctive discrete units, which functionalists designate in paradigmatics as phonemes, archi-

phonemes, archi-archiphonemes, etc., and which are of course all of them phonologically relevant. However, syntagmatically, all these distinctive units might be viewed as functioning with mutually equivalent distinctive power irrespective of their paradigmatic identification. In other words, the distinction established between phonemes and archiphonemes, with their respective functional levels, namely, phonemic and hyperphonemic, would apparently be of no relevance in syntagmatics. To all intents and purposes, all these distinctive units might be posited at an equivalent functional level. This may be illustrated by, say, the English word *stall* /sTòl/, which consists, on the phonematic level, of four distinctive units, /s/, /T/, /ò/ and /l/, each of which fulfils a degree of distinctive function equivalent to that of the others, the archiphoneme as well as any of the phonemes. In other words, as long as viewed syntagmatically, the distinctive units under consideration are in no way necessarily characterized as phonemes or archiphonemes, which means that a hierarchy of functional levels mentioned earlier is of no immediate relevance, and the sole relevancy is the global identification of the functional level as opposed to the non-functional level for these distinctive units. Any single unit of phonematic nature which goes to account for the SIGNIFIANT of a sign should be necessarily posited at a phonologically relevant level, and an archiphoneme is one such single unit. It follows from what has been said above that while it would seem impossible in syntagmatics to determine which of the hierarchical functional levels is to be attributed to an archiphoneme in relation to a phoneme, it should at least be certain that the archiphoneme is not posited at the subphonemic level. It is therefore easier to understand Vachek's contention regarding the non-justification of the notion of archiphoneme in syntagmatics than his assertion about the subphonemic status of the archiphoneme.

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#### DISCUSSION

BUYSSSENS (Bruxelles)

Je suis de ceux qui se passent de la notion d'archiphonème et pensent tout expliquer au moyen de la notion de neutralisation. Aussi, j'aimerais savoir à quoi la notion

d'archiphonème sert dans vos théories. Je vais plus loin. L'archiphonème n'étant pas un phonème, on n'a pas le droit de l'opposer aux phonèmes.

Enfin, la notion d'archiphonème soulève des problèmes insolubles. En français il n'y a pas de mot se terminant par /ɔz/; est-ce la voyelle /ɔ/ qui est impossible devant /z/ ou est-ce la consonne /z/ qui est impossible après /ɔ/? Je ne vois pas comment résoudre ce problème.

AKAMATSU

1. Je persiste à croire que dans la théorie phonologique d'optique fonctionnaliste, la notion d'archiphonème et celle de neutralisation sont liées inéluctablement l'une à l'autre et que, par conséquent, l'on ne peut parler de l'une sans parler de l'autre. Comme le dit Martinet, là où l'archiphonème se réalise, il y a neutralisation. La simple utilisation de la notion de neutralisation sans admettre en même temps la notion d'archiphonème, comme le prétend M. Buysens, me paraît incohérente et insoutenable. En d'autres termes, ce n'est que la moitié de l'histoire. A quoi sert la notion d'archiphonème dans mes théories? Pour moi, la notion d'archiphonème n'est pas simplement quelque chose de purement utilitaire, mais aussi une nécessité théorique. Voici pourquoi. Une fois la neutralisation constatée, la tâche du phonologue fonctionnaliste est d'identifier le statut phonématique de l'unité distinctive en question — le signifiant se composant entre autres d'une série ordonnée d'unités phonématiques — dont la réalisation phonétique se perçoit en position de neutralisation. Il s'agit justement de l'identification fonctionnelle de cette unité distinctive, d'où la notion d'archiphonème. Cette identification fonctionnelle, dont on ne doit pas se passer, à mon avis, et que M. Buysens semble négliger, me paraît extrêmement importante puisque, comme le dit Martinet, il n'y a pas de correspondance nécessaire entre la réalité physique et la fonction linguistique, et que, selon moi, l'on doit constamment se soucier de vérifier celle-ci masquée derrière celle-là. Je me demande ce que M. Buysens se propose de faire, sans recours à la notion d'archiphonème, de la réalité physique qu'il observe en position de neutralisation.

2. L'archiphonème n'est pas un phonème, certes, comme le signale M. Buysens. Néanmoins, je pense qu'on peut dire aussi la chose suivante: l'archiphonème est du même ordre que le phonème dans la mesure où l'un et l'autre fonctionnent de façon à se trouver dans le signifiant en tant qu'*unités phonématiques* constitutives non seulement syntagmatiquement (par exemple *Tod* /toT/) mais aussi paradigmatiquement (par exemple, *père* /pEr/ — *pire* /pir/). Dans ce dernier cas, je ne vois aucun inconvénient à opposer un archiphonème aux phonèmes, à moins, bien entendu, que les phonèmes soient de ceux que l'archiphonème 'coiffe'.

3. J'en arrive enfin au problème de /ɔz/ que me pose M. Buysens. Ma solution est la suivante. Je pense que c'est la voyelle [ɔ] (à noter que je n'écris pas /ɔ/) qui est impossible devant /z/ pour les raisons suivantes:

(1) devant d'autres consonnes finales, sauf /r/, rien n'empêche le francophone d'effectuer l'opposition /o/ — /ɔ/, par exemple, *saule* /sol/ — *sol* /sɔl/, *côte* /kot/ —

*cotte* /kɔt/, *tome* /tom/ — *tomme* /tɔm/, et même d'autres cas hypothétiques dans lesquels le comportement phonologique normal du francophone permettrait la dite opposition, par exemple, *sauce* /sos/ — \**sosse* /sɔs/. La voyelle [ɔ] sera d'ailleurs identifiée comme réalisation de l'archiphonème /O/ (c'est-à-dire /o-ɔ/), donc [ɔz] comme /Oz/. La présence de [z] final constitue ainsi le contexte phonique spécifique dans lequel l'opposition /o/ — /ɔ/ se neutralise;

(2) d'autre part, je ne crois pas qu'on puisse dire que [z] est impossible après /ɔ/ parce que si c'était le cas, on ne trouverait vraisemblablement que [ɔs] (et non pas [os]), ce qui n'est effectivement pas le cas.

#### FROMKIN (Los Angeles)

If one believes in the 'reality' of linguistic units such as phonemes, the existence of the archiphoneme T (which you suggest is neither /d/ nor /t/) in an English word such as *stack* can be questioned. Evidence can be put forth, from speech error data for example, supporting an abstract but nonetheless REAL underlying /t/ after /s/. To cite just one actually occurring error in support of this, a speaker who intended to say *a stack of books*, said instead [ə tʰæk əv spɔks]. When clusters *st*, *sp*, and *sk* are split in deviant utterances such as the one cited, voiceless *t*, *p*, and *k* result and never their voiced counterparts. If archiphonemes, neutral as to the voicing distinction are posited after *s*, there is no explanation provided for the non-occurrence of the voiced phones in such error data. If one, however, suggests that the underlying stops are voiceless this fact is understandable. Such data also reveal the reality of the English phonological rule which aspirates the voiceless stops incerta in constraints which disallow voiced stops after /s/ (thus changing the /b/ in *books* to [p] in [spɔks]). Furthermore, these rules or constraints much apply (or intervene) after the errors in serial ordering occur.

#### AKAMATSU

May I preface my reply by saying that I am not so much interested in observing phonetic facts (physical reality) as such and formulating a set of rules that coherently apply to them as I am in discovering what linguistic function physical reality actually reflects.

It is my opinion that linguistic units we postulate and operate with may be said to be 'real' to the extent that they contribute to an adequate description of the FUNCTIONING of a given language under study. I believe as a functionalist that an archiphoneme is a theoretical construct as 'real' a linguistic unit as a phoneme, both being definable in terms of RELEVANT FEATURES, precisely because the notion of archiphoneme is indispensable from a functional point of view to account for a certain well-known linguistic phenomenon, namely, neutralization of a phonological opposition between phonemes. Other linguists of different convictions will no doubt find some other solutions, as I see Fromkin does. I am saying that in the present problem,

/T/, which is neither /t/ nor /d/, is as 'real' a linguistic unit as /t/, /d/, /m/, /ʃ/, /e/, etc., are.

The evidence adduced by Fromkin is very interesting but does not seem to me to invalidate the notion of archiphoneme. Before I go on to give my own interpretation of Fromkin's evidence, there is just one small but vital point I wish to make. It is this; was the deviant utterance in question indeed [ə tʰæk əv spɔks], as cited by Fromkin, or was it in reality [ə t̄æk əv spɔks]? My post-session personal communication with Fromkin on this point revealed that her transcription was based on her impressionistic observation. I wish it had been instrumentally confirmed. While it is true that retrieval of speech errors including the present one cannot, by the very nature of it, be always subjected to subsequent instrumentation, I believe that instrumental confirmation may be singularly vital as a preliminary step in certain cases; so in the present case, as to whether or not one has to do with [tʰæk] or [t̄æk]. Fromkin's evidence lacks the degree of certainty desired. Note that my query is not intended to twist facts in favour of theory, which is to be condemned.

In the absence of the instrumental confirmation desired, I am obliged to present alternative interpretations of Fromkin's evidence.

(a) The deviant utterance \**a tack of spooks* may be instrumentally confirmed to have been [ə t̄æk əv spɔks], which I do not wish to exclude *a priori*. (Do not let the orthographic representation of the deviant utterance deceive us without reflection into necessarily retrieving [... tʰæk...]). The following process may be hypothesized as an explanation. The initial programming for *stacks* /sTækS/ is articulatorily executed except for /s/ which, due to a failure in motor command, is delayed and transferred to the position before *books* /bɔkS/. This means that [t̄] which is already set in the initial programming ([s] is also in the initial programming) will be actually realized, while [s] is somehow suppressed as the rectificatory signal from the brain reaches articulatory organs too late. Of course, [t̄] here is the realization of /T/ (in spite of what the orthographic representation \**a tack*... would seem to suggest).

(b) Should the deviant utterance in question be instrumentally confirmed to have been [ə tʰæk əv spɔks], as Fromkin adduces, the following may be hypothesized. All of the process described under (a) will have occurred. Then, as the speaker's brain receives the information about the voiceless alveolar plosive occurring initially and followed by a vowel under accent in what could be identified as an unexpectedly occurring moneme, i.e., *tack*, there intervenes a subsequent motor command, which replaces [t̄] by [tʰ], the latter of which is more in conformity with normal phonetic-phonological behaviour of an English-speaking subject. In this case [tʰ] is to be represented as the realization of /t/.

I must disagree with Fromkin that the non-occurrence of [d] in the deviant utterance points to the 'underlying' /t/. If [d], in fact, does not occur, it is simply because the realization of /T/ in the context /s-/ (being the initial motor command for *stack*) is determined through progressive assimilation to be voiceless instead of voiced (cf. *cats* [kæts] /kætS/, *dogs* [dɔgz] /dɔgS/). (One can recall in this connection the existence in

some languages of [zd-] /zT-/ which can be similarly explained.) It is important to point out that the occurrence of the voiceless alveolar plosive and the non-occurrence of the voiced alveolar plosive in the present problem entirely *eludes an English speaker's choice*, conscious or unconscious; it is the phonetic context that determines the choice. It is in this sense that "neutral as to voicing distinction", as Fromkin puts it, should be understood. Consequently, what Fromkin calls the 'underlying' element in question is not /t/ as she claims. (Incidentally, [p] in [spɔks] cited in the foregoing is more exactly [p<sup>h</sup>], which is the realization of /P/.)

Finally, I should like to say that what happens phonetically in speech errors does NOT NECESSARILY constitute a sound basis upon which to reach a valid conclusion about phonological problems as they exist in normal speech.