Some Thoughts on the Term 'Signeme'

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ABSTRACT: The genesis of the term 'signeme' which was first mentioned by Daniel Jones is investigated. This is followed by discussions of each 'signemes' that Jones mentions, viz., those of phone, of length, of stress, of pitch, and of juncture. The difference between 'stress' and 'prominence' as Jones understands is briefly clarified. The terminological laxity revolving round 'opposition' and 'contrast', behind which lies a conceptual laxity, among many contemporary writers, is criticized. One appreciatively emphasizes Jones's correct view that it is the location of 'stress', not 'stress' itself (but see Serbo-Croat) that functions distinctively. Jones's contribution to clarifying certain phonetic phenomena by applying the criterion of syllable division (instead of applying junctures) is highlighted. The paper ends with a prognostication of any possible use or non-use of the term 'signeme' in linguistics.
KEYWORDS: Signeme, Distinctive function, Contrastive function, Phoneme, Chroneme, Stress, Fixed stress, Free stress, Location of stress, Serbo-Croat, Stress phoneme, Toneme, Juncture phoneme, Syllable division, Intonation, Opposition vs Contrast.

FIRST PRINTED OCCURRENCES OF THE TERM 'SIGNEME'

The term 'signeme' is not one that research linguists often encounter, if at all, nowadays.[1] The term 'signifeme' was mentioned in Jones (1957) as follows.

> […] "any speech feature whatever (segmental or otherwise) which can be used for distinguishing meanings". It is, I believe, the lack of a suitable term for this that has led many American writers to employ the unsuitable word "phoneme" to denote it. We need an unequivocal term, and I submit that such a term should be related to "significance" and not to "phone". An appropriate term would, I suggest, be **"signifeme".** The use of this word will enable us to distinguish conveniently the different types of significant difference by employing the terms "signifemes of phone", "signifemes of length", "signifemes of stress", "signifemes of pitch" and "signifemes of juncture". Then the term "phoneme" (which would be equivalent to "signifemes of phone") can be retained for the purpose for which it was originally invented in the school of BAUDOUIN DE COURTENAY and adopted by those who have based their work on this. (Jones 1957: 20)

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[1]   The term 'signeme' is not entered or discussed even in Collins & Mees (1999), an admirably well-documented book about the life and works of Daniel Jones.

The above quoted article (1957) was reprinted with corrections in 1964 and again in 1975[2] in which the term 'signifeme' was changed to 'signeme', the excrescent *-if-* in *signifeme* having been removed. The above quoted passage in Jones (1964, 1975) reads in part as follows.

> […] An appropriate term would, I suggest, be **"signeme"**.[3] The use of this word will enable us to distinguish conveniently the different types of significant difference by employing the terms "signemes of phone", "signemes of length", "signemes of stress", "signemes of pitch" and "signemes of juncture". (Jones 1964: 20, 1975: 20)

The reason for the fact that the term 'signifeme' was subsequently changed (corrected?) to the term 'signeme' in the 1964 and 1975 reprints can only be speculated. Three possibilities present themselves.

(i) The term 'signifeme' cannot have been a simple mistake made by the typesetters as this term recurs consistently throughout Jones's passage (in the 1957 version) quoted further above. Besides, it is assumed that the whole article which included the above quoted passage must have been proofread by Jones himself before publication.

(ii) The original term 'signifeme' ((?) < *signify + eme*) as a coinage was probably considered awkward (by Jones (?)) following the publication of his article in 1957 and was corrected to 'signeme' in 1964, this correction being retained in 1975.

(iii) It is not certain whether the term that Jones says was suggested by Ward *was* in fact 'signeme' and Jones went along with it or Jones had, independently of Ward, changed the term 'signifeme' to 'signeme'. In addition, it is not certain if, as I will recount below, the coinage of the term 'signeme' should indeed be attributed to Ward.

In order to appreciate Jones's suggestion of the term 'signeme' in the above quoted passage, it is necessary to know the context in which the passage was written. In the passage (Jones 1957: 19-20) preceding the one I have quoted above, Jones criticizes the then American linguists' practice of employing the term 'phoneme' to apply to length and other prosodic features (when significant) as well and even to significant feature of 'juncture'.

In a footnote (fn. 67), Jones approvingly refers to the terms 'prosodemes' which he says had already been used by some others (Nikolai Sergeyevič Trubetzkoy, Einar Haugen, Simeon Potter[4]).

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[2]   The corrections brought into the 1964 and 1975 reprints are not conspicuous at first glance, as the setup of all twenty pages is identical in the 1957, 1964 and 1975 versions.

[3]   At this point Jones attaches a new footnote (fn. 68) which reads: "A suggestion of DENNIS WARD of the University of Edinburgh." This footnote proves significant, as will be seen below.

[4]   The reference to Potter here should surprise no-one, as he was a rare British linguist who, through his sojourn in (the then) Czechoslovakia for academic purposes, was acquainted with the works of the early Prague Linguistic Circle.

WHO INVENTED THE TERM 'SIGNEME'? A MYSTERY

Years after reading Jones (1957) quoted at the outset of this paper (and also as reprinted with corrections in 1964 and 1975), I wrote (May 2007) to Dennis Ward to enquire into the genesis of the term 'signeme' which Jones had attributed to him. His reply (July 2007) had a surprise in store. Ward did not invent the term and attributed it to Jones and even suggested that Jones might have got it from someone else.[5] Whereupon I wrote to Michael Halliday (February 2012) to ask if he could help me in any way. Halliday wrote back (June 2012) to suggest that I should look in the direction of John Rupert Firth's works, adding that he himself had never heard the term 'signeme' in Firth's lectures he had attended. The identity of the inventor of the term 'signeme' remains a mystery.

In what follows, I will discuss in turn each type of 'signeme' that Jones proposes. In so doing, I will make occasional digressions where necessary or appropriate to other researchers' theoretical points even if they may lie outside Jones's own theoretical framework with a view to putting Jones's theory in perspective.

It would be fair to understand that, by 'significance' as mentioned by Jones in connection with 'signemes' of all types, is meant 'distinctiveness' and by 'significant difference' is meant 'distinctive difference' (or 'semantic difference' as Jones also says in other works of his).

'SIGNEMES OF PHONE'

Clearly, a signeme as mentioned by Jones is definitionally based on two crucial points.

(i) What can be regarded as constituting a signeme is a speech feature, i.e. a phonetic feature; and

(ii) The function of a signeme must be distinctive.

Both points must be met for a given speech feature to qualify as a 'signeme'.

I will now discuss one by one the various types of 'signeme' that Jones mentions.

'Signemes of phone' seems to present no problem. Jones himself equates 'signemes of phone' with what he calls 'phoneme'.

We recall that Jones defines as follows the phoneme in one of his well-known works.

A FAMILY OF SOUNDS IN A GIVEN LANGUAGE WHICH ARE RELATED IN CHARACTER AND ARE USED IN SUCH A WAY THAT NO ONE MEMBER EVER OCCURS IN A WORD IN THE SAME PHONETIC CONTEXT AS ANY OTHER MEMBER. (Jones 1967[3]: § 31)

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[5] All this is surprising when we know that there was considerable contact, epistolary and otherwise, between Jones and Ward over a good number of years. See in this connection Collins & Mees (1999: 296-7, 299, 397, 401, 403-8).

This definition may be paraphrased as follows: 'A phoneme is a group of phonetically similar and complementarily distributed sounds'. In this paraphrased formulation the double criterion of 'phonetic similarity' and 'complementary distribution' is employed. This over-simplified yet convenient formulation does not overtly refer to two important conditions which Jones sets, i.e. 'in a given language' and 'in a word', but this is just because these two conditions are pre-requisite in any attempt to establish the phonemes of a given language and are accepted by all.

Jones is, as is well known, at pains to emphasize that his definition of the phoneme as set out above concerns what the phoneme IS and not what it DOES. What the phoneme does is to fulfil a distinctive function (a semantic function, as Jones himself puts it), that is, to distinguish meanings. The distinctive function of the phoneme is, according to him, a sub-sidiary property of the phoneme that is a corollary of his definition of the phoneme.

'A group of phonetically similar and complementarily distributed sounds' forms a unit (the phoneme) that fulfils a distinctive function, and these sounds are referred to as 'members' ('allophones') of the phoneme.

To the best of my knowledge, Jones seems not to demonstrate anywhere in his writings how to establish the phonemes of a language.

One conceivable procedure by which the phonemes can be established may be to look for the sounds which will be subsequently identified as the allophones of the phonemes. One would observe a wide range of similar sounds of a given language that occur in mutually different phonetic contexts. For example, one would find different kinds of **t**-sounds in English such as follows:

[tʰ] (orally released and aspirated) as in *tea*,
[t] (orally released and unaspirated) as in *cutter*, *statehood* or *catwalk*, or in *stuff* (i.e. after [s]),
[t˺] (orally unreleased) as in *at tea*, *hot drink*, *right change* or *that judge* (i.e. before [t], [d], [ʧ] or [ʤ]),
[tˡ] (laterally released) as in *little or cutlet*,
[tⁿ] (nasally released) as in *mutton* or *utmost*,
[t̪] (dentally released) as in *cutthroat* or *set them*,
[t] (orally released, aspirated or unaspirated as the case may be) as in *try* or *mantra*, (i.e. before [ɹ]),
[tʷ] (orally released, aspirated or unaspirated, with labialization) as in *twin* and *fatwa* (i.e. before [w]).
[tˀ] (simultaneously glottalized) as in *hat* and *setback*.

The different kinds of **t**-sounds such as cited above will then be unified into the **t**-phoneme of English, these **t**-sounds being the allophones of this phoneme. Likewise, the other consonant phonemes of English will be established. This procedure will be basically in keeping with Jones's notion and definition of the phoneme.

At this juncture the following point may be mentioned.

The phoneme is an unanalyzable global unit to Jones. Granted that, for example, /t/ (e.g. *cat*) is opposed to /d/ (e.g. *cad*), Jones is not concerned with 'in what way' the two phonemes are distinguished from each other. Jones would at least agree that what he establishes as the **t**-phoneme and the **d**-phoneme are different in that the former is 'phonetically' voiceless and the latter 'phonetically' voiced, and no more than that.

Unanalyzability of the phoneme for Jones is much the same as that of the phoneme as defined in the early days of the Prague Linguistic Circle's activity. Note in this respect the following passage.

> Unité phonologique non susceptible d'être dissociée en unités phonologiques plus petites et plus simples. ("Projet de terminologie phonologique standardisée" (1931: 311))

In fact, Jones himself refers to Trubetzkoy and says as follows.

> He [Trubetzkoy 1939: 34] defined them [phonemes] as "phonological entities which from the standpoint of the language under consideration cannot be subdivided into smaller consecutive entities," […][6]

However, Jones cannot be blamed for entertaining the concept of the phoneme as an unanalyzable global unit. His aim at working out the phoneme lies elsewhere than developing phonology in the way that later Praguians worked hard at. That the Praguians ultimately came out with the notion of the phoneme being *analyzable in terms of phonologically relevant features* is history but is irrelevant to the story of Jones's notion and use of the phoneme.

Incidentally, it would obviously be a mistake to understand, should anyone do so, that the phoneme as defined by Jones can be analyzed into the members (allophones) of the phoneme.

SIGNEME OF LENGTH

We move on to consider 'signemes of length', which correspond to 'chronemes' with which Jones operated all along during his career as a phonetician. Jones's idea of the chroneme is clearly stated as follows (Jones 1944: 3):

> […] various different lengths [chrones] count for linguistic purposes as if they were the same length [chroneme], in the same sort of way as we find that various timbres [sound qualities] have to count as if they were one (the phoneme) […] In this way we should have chrones and chronemes parallel to phones (sound-qualities) and phonemes.

Here is in some detail how Jones utilizes 'short chroneme' and 'long 'chroneme' in his presentation of the English vowel phonemes. Twelve monophthongs (iː, i, e, æ, ɑː, ɔ, ɔː, u, uː, ʌ, əː, ə) are presented in terms of eight monophthongs (i, e, æ, ɑ, ɔ, u, ʌ, ə) to which either of the two chronemes, as the case may be, is applied as follows (Jones 1964[9]: Chapter

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[6]   In Trubetzkoy's own words (1939: 34): "Phonologische Einheiten, die sich vom Standpunkt der betreffenden Sprache nicht in noch kürzere aufeinanderfolgende phonologische Einheiten zerlegen lassen, nennen wir : P h o n e m e […]" It is easy to see that this definition is essentially the same as that given in "Projet de terminologie phonologique standardisée" (1931: 311) which I quoted above.

XIV). For instance, the **i**-phoneme consists of two members (allophones), i.e. iː and i ([iː] and [i]), the former resulting from the application of the long chroneme to the **i**-phoneme and the latter from the application of the short chroneme to the **i**-phoneme. Likewise, the **e**-phoneme consists of [e], [ẹ] (opener and retracted), etc.; the **æ**-phoneme consists of [æ], [æ̣] (opener);[7] the **ɑ**-phoneme consists of [ɑː];[8] the **ɔ**-phoneme consists of [ɔ] (the short chroneme applied)[9] and [ɔː] (the long chroneme applied); **u**-phoneme consists of [u] (the short chroneme applied) and [uː] and [ụː] (advanced) (the long chroneme applied); the **ʌ**-phoneme consists of [ʌ]; and finally the **ə**-phoneme consists of [əː] (the long chroneme applied) and of [ə] (the short chroneme applied) which in turn consists of [ə₁], [ə₂], [ə₃] and [ə₄].[10] The question of what the members (allophones) of **ə**-phoneme consist of is somewhat complex in Jones's description of them. Should we understand that **ə**-phoneme consists of [əː] and [ə], or alternatively of [əː], [ə₁], [ə₂], [ə₃] and [ə₄]?

According to Jones's view of the English vowel monophthongs, chronemes (short and long in e.g. ([i] vs [iː], respectively), are supposed to function distinctively. Hence, 'short chroneme' and 'long chroneme' exemplify 'signemes of length'.

As can be seen above, Jones's presentation of the English vowel phonemes with the use of the long and/or short chroneme(s) is vastly different from, in fact incomparable with, the widespread presentation wherein chronemes are irrelevant and the twelve monophthongal phonemes are established as /iː/, /i/, /e/, /æ/, /ɑː/, /ɔ/, /ɔː/, /u/, /uː/, /ʌ/, /əː/ and /ə/. Collins & Mees (1999: 359) write:

> [...] Jones's ideas on the nature of chronemes within phonemes, and in particular the application of this theory to English, were to bring him into conflict with many scholars, including some of his own colleagues.

Other writers prefer the notation of the twelve monophthongs as /i/, /ɪ/, /e/, /æ/, /ɑ/, /ɒ/, /ɔ/, /ʊ/, /u/, /ʌ/, /ɜ/, /ə/ with no length marks[11]. This notation attaches primordial importance to the *quality* of each vowel phoneme, whose quantity is implied (if not disregarded) and is not shown in the notational presentation itself. An alternative phonological notation of the English monophthongs was proposed by Gimson (1962[1], 1972[2], 1980[3], 1989[4]) and is widely used, in which quality and quantity (short or long, as the case may be) are combined in the presentation of the vowels. This presentation is as follows: /iː/, /ɪ/, /e/, /æ/, /ʌ/, /ɑː/, /ɒ/, /ɔː/, /ʊ/, /uː/, /ɜː/ and /ə/ (the monophthongs are arranged here as Gimson presents them), or (in the order Jones presents them) /iː/, /ɪ/, /e/, /æ/, /ɑː/, /ɒ/, /ɔː/, /ʊ/, /uː/, /ʌ/, /ɜː/ and /ə/.

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[7]　Jones (1964[9]: § 276) first presents [æ] as the only vowel that the **æ**-phoneme comprises but goes on (*loc. cit.*) to mention [æ] (rather opener variety) as well which he says occurs "before 'dark' **l** (as in *alphabet* ˈælfəbit)" but which he says the foreign learner may ignore.

[8]　Jones (1964[9]: § 284) says that "The English phoneme [...] represented by the symbols **ɑ** may be regarded as comprising only one sound." This suggests that a phoneme may not necessarily be 'a family of sounds' despite Jones's definition of the phoneme.

[9]　This again suggests that a phoneme may consist of only one sound.

[10]　See Jones (1964[9]: §§ 356-70).

[11]　I personally prefer and employ this type of presentation of the English monophthongs since I consider the qualitative difference as being decisive and the quantitative difference is subsidiarily concomitant with the qualitative difference. For example, I notate /i/ and /ɪ/ rather than /iː/ and /ɪ/.

The short and long variants of either the short or long chroneme are said to be 'allochrones' by Jones. However, according to Jones, both a long chroneme and a short chroneme themselves are of variable lengths depending on different phonetic contexts, that is, for example, a long chroneme or a short chroneme can each be relatively long or short. One may compare in this connection e.g. [ɪ] in *bid* (the short chroneme) and [iː] in *beat* (the long chroneme) in which [ɪ] may well be longer than [iː] due to the different contexts where they occur.

The notions and terms of 'chrone' and 'chroneme' have disappeared very quickly from widely available manuals of phonetics and phonology of various languages.

SIGNEMES OF STRESS

We now move on to 'signemes of stress'. It may be assumed that, like 'signemes of length' we have just seen, 'signemes of stress' are to be also identified through the same pattern of procedure as that whereby 'signemes of phone', i.e. the phoneme, are arrived at.

> […] a state of affairs in stress comparable to the variations of quality in the phoneme, length in the chroneme and voice-pitch in the toneme. (Jones: 1967³: § 467).

Almost predictably, Jones coined the term 'stroneme'[12] for 'signemes of stress'.

The condition that is importantly stipulated by Jones in connection with the phoneme and its members (allophones) should *à priori* apply to 'signemes of stress' as well. This means that one should operate with 'words' that do not contain within them potential pauses (this excludes compounds and syntagms) just as the phonemes should be established within 'words' specified likewise.

Jones's definitional concept of 'stress' can be well discerned in some passages by him such as the following.

> The force of the breath with which a syllable is pronounced is called *stress*. Jones (1963⁴: § 436)

> The degree of force with which a speaker pronounces a sound or a syllable is called its *stress*. (Jones 1963⁴: § 436)

To Jones, 'stress' is concerned very much with a subjective activity on the part of the speaker (Jones 1967³: § 434). In other words, 'stress' in his terminology is equivalent to what is alternatively often called 'chest pulse' (Jones's term), 'intensity' or 'amplitude'; this is also my own use of the term 'stress'. 'Stress' as defined this way may largely apply to English speech (English being generally said to have a 'stress accent') but not to a language like Japanese (often said to have a 'pitch accent') which is characteristically pronounced without much variation in degrees of intensity (stress).

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[12]   See Jones (1967³: §§ 468 & 469).

Jones is at pains to distinguish 'prominence' from 'stress' as, according to him, 'prominence' is 'an effect perceived objectively by the hearer.'

Jones (1963[4]: 437ɑ) says that "stress is one of the factors that may cause or help to cause a sound or syllable to be 'prominent'." All this seems to make clear that stress is only one of the contributory factors to what he calls 'prominence' (which would correspond to 'mise en valeur' in French) whose contributory factors are, in addition to stress (the speaker's action), loudness (the hearer's perception as a result of stress), length, pitch (static or dynamic), intonation (in utterances), etc. in various combinations. Prominence is, according to Jones, an objective perception on the part of the hearer. This is clearly stated when Ward (1972[5]: §286) says that "When one hears English spoken or read aloud, one realises that a number of words or syllables stand out from the rest of the sentence." She goes on to say (*op. cit, loc. cit*) "This standing out may be termed *prominence*." She then uses the term 'accent' (*op. cit, loc. cit*) in an obvious reference to 'prominence'. Unlike Ward, Jones does not use the term 'accent' in much the same context. Indeed he does not seem to use the term 'accent' in his writings.[13] This is consistent with his own use of the term 'prominence'.

I myself use the term 'accent' to correspond to what Jones calls prominence.[14] I thus make a distinction between 'accent' and 'stress' and employ these terms discriminatively from each other; I prefer to use 'accent' where many other writers, if not Jones, customarily use 'stress'. The disparate definitions of 'stress' and 'accent' and the different use of the two terms are reflected in various writers' works. The term 'stress' is used (where one might expect the term 'accent' or 'prominence') when Ashby (2011: 169) writes "[…] the three physical correlates of stress: loudness, length and pitch." This, I suspect, clearly departs from Jones's use of the term 'stress'. Skandera & Burleigh (2011: 61) likewise use the term 'stress' when they write: "[…] the suprasegmental features of loudness, pitch, and duration, which are components of stress […]". The unclear use of the term 'stress' is endemic among not a few writers on English phonetics. At least Jones is consistent with his definition and use of the term 'stress'. One even frequently encounters the terms 'stress accent' (i.e. accent whose dominant contributor is stress) and 'pitch accent' (i.e. accent whose dominant contributor is pitch).

Jones mentions 'primary stress' as in ˈ*pretty* and ˈ*concord*. He also mentions 'secondary stress' as in ˌ*repreˈsent*, and ˌ*underˈstand*. The occurrence of secondary stress which generally occurs *before* primary stress is largely governed by the typical rhythmic pattern in English.

Are primary stress and secondary stress to be regarded as members (strones) which constitute the stroneme in English? It seems inconceivable to find another stroneme in English. Jones is right not to set up a stroneme in connection with not only a fixed stress (as in

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[13]   The term 'accent' does not occur in the indexes in e.g. Jones (1967[3]) and Jones (1964[9]). One may profitably take a look at the Index (555-571) in Collins & Mees (1999) in respect of the term 'accent' (555) and 'stress' (569). The fundamental reason seems to be that Jones prefers to use the term 'accent' in the sense in which one talks about 'Yorkshire accent', 'German accent in English', etc.

[14]   What slightly complicates the matter is that Jones also uses the term 'prominence' in connection of what is known as different degrees of sonority of sounds. In my present discussion I ignore this.

Hungarian and Turkish) but a free stress itself (as in English and Italian). The exception he makes is to Serbo-Croat in which there are 'three stresses' (as Jones refers to them) – described by some as 'pitch accents' – that are manifested mutually differently and function distinctively. In Jones's own words,

> It seems that level stress, crescendo stress and crescendo-diminuendo stress all occur in Serbo-Croat and its dialects […] the difference between crescendo and crescendo-diminuendo stress is used for word-differentiations […] (Jones 1967[3]: § 466)

Notice that the level stress is not mentioned as being involved for distinctive function. On the strength of the cases in Serbo-Croat, Jones seems not to altogether abandon the possibility of establishing the stroneme (or rather different stronemes) in those cases where *kinds* of stress are concerned. There may be a case for Jones to conceive of different stronemes here, but he does not seem to. Collins and Mees (1990: 385) say as follows by way of a summary about Jones's stand.

> Jones believes that it is normally location of strong stress and not the type of stress which is linguistically significant. Consequently, the concept of a stress phoneme or "stroneme", composed of "strones", can have application only to Serbo-Croat—or any other languages found to share its exceptional characteristics.

Serbo-Croat is said to have pitch accent, and different pitch configurations occur on stressed syllables only,[15] rather like Mandarin Chinese in which the well-known four tonemes (realized by four different pitch configurations) occur in stressed syllables only.

However, ultimately Jones ends his short exposition on 'stroneme' on a pessimistic note.

> […] it is probable that the idea of the stroneme may be dismissed as of little or no value for any practical purpose […] ordinary stresses cannot be grouped in any way into families corresponding to phonemes, chroneme and tonemes. (Jones 1967[3]: § 469)

Post-Bloomfieldians operate with 'stress phonemes'[16] of which they establish four.[17] Unlike post-Bloomfieldians who establish 'stress phonemes', Jones does not mean to establish four 'stress phonemes', though he says that "it seems possible to distinguish up to four degrees of stress" (Jones 1963[4]: § 438*b*). On the other hand, Jones allows the possibility of operating with three degrees of stress, and says (Jones 1963[4]: § 438*b*) that "When three degrees are distinguished, the intermediate degree is called *medium stress* or *secondary stress*;

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[15]   Trubetzkoy (1939: 190-191, 199 fn. 2) gives a description, more substantial that Jones's, of what he calls 'free accent' ('freie Betohnung' or 'freie Akzent' in his terminology) in Serbo-Croat. He counts Serbo-Croat among those European languages in which pitch configurations have a word-differentiating function, along with Norwegian, Swedish, Lithuanian, Latvian, North Kashubian (Slovincian), Slovenian, North Albanian, etc.

[16]   Cf. Pike (1947: 77a) writes: "In this volume we call phonemic stress a phoneme […]".

[17]   Trager & Bloch (1941: 227) write that "[…] we regard the degrees of stress as phonemic […]" and then also say (228) that "There are […] four phonemically different stresses in English […]". Bloch & Trager (1942: 48) say that "English stress can be completely described in terms of four contrasting grades" and mention (also 48) in connection with American English "[…] the four stress phonemes […]". Bloch & Trager (1942: 48) illustrate the four stress phonemes with the example of e.g. *elevàtor-ôperàtor*.

the strong stress is then called *primary stress*." So far as BrE he describes is concerned, Jones in fact operates with just two degrees of stress, i.e. primary stress and secondary stress.

DOES STRESS FUNCTION DISTINCTIVELY?

Note that, here and elsewhere, I am retaining Jones's use of the term 'stress' in what follows. Though mentioning that 'signemes of stress' function distinctively, Jones does not say that stress itself functions distinctively except in e.g. Serbo-Croat. According to him, what fulfils a distinctive function is the location of the stress, as we shall see below. Yet it seems that Jones does not definitively pronounce on the function of stress itself.

We need to turn to André Martinet for a clear statement on the function of what he calls 'accent' (F) which corresponds to 'mise en valeur' (F) or 'prominence' (E). Jones himself would use the term 'stress' here. According to Martinet (2008⁵), the function of accent is *contrastive* (not oppositive or distinctive). We only need to quote below a few passages by Martinet to understand what is meant by 'the contrastive function of accent'.

> […] les éléments phoniques d'une langue peuvent assumer des fonctions **contrastives** [Martinet's boldface] lorsqu'ils contribuent à faciliter, pour l'auditeur, l'analyse de l'énoncé en unités successives. (III-1)

> L'**accent** [Martinet's boldface] est la mise en valeur d'une syllable et d'une seule dans ce qui représente, dans une langue determinée, l'unité accentuelle. Dans la plupart des langues, cette unité accentuelle est ce qu'on appelle couramment le mot.[18] (III-31)

> La fonction de l'accent est essentiellement contrastive, c'est–à-dire qu'il contribue à individualiser le mot ou l'unité qu'il caractérise par rapport aux autres unités du même type présentes dans le même énoncé ; une langue a *un accent* et non *des accents*. (III-33)

Care should be taken not to take 'contrastive' and 'distinctive (oppositive) as synonyms.[19] Accent functions contrastively as much as e.g. the phoneme functions distinctively.

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[18] What is meant by 'word' here is a simplex word or a derivative but not a compound, as Martinet (1960: III-31) correctly says as follows: "[…] en anglais et en allemand, pour les mots simples (non composés) […]".

[19] In this connection it is worth quoting at length an excellent relevant passage attributable to Veiga (2006: 61-62) who expresses a view that is critical of the widespread and rudimentary misuse of the terms 'opposition' and 'contrast', a view with which I entirely agree: 'Dans la terminologie phonologique la plus répandue dans le cadre théorique de la linguistique structurelle européenne on nomme *contraste* le rapport syntagmatique que toute unité effectivement présente dans un texte établi avec d'autres unités présentes aussi dans ce même texte, […]. Contrairement à la relation d'opposition, la relation de contraste est une relation *in praesentia* et, de ce fait, elle exige la co-apparition des termes entre lesquels elle s'établit dans la même sequence […]. Si dans la tradition phonologique européenne […] la différenciation entre les concepts d'*opposition* et de *contraste* est bien connue en tant que relations paradigmatique et syntagmatique, respectivement […], l'emploi général du terme *contraste* étant spécialemennt remarquable parmi les linguistes américains, ce qui implique la non différenciation, —du moins terminologique, mais nous savons bien que derrière les imprécisions terminologiques se cachent tôt ou tard des imprécisions conceptuelles— entre les deux concepts auxquels […]."

The concepts and terms like 'stress phonemes' or 'phonemic stress' attributable to certain writers would not be accepted by Jones any more than by Martinet.

The term 'contrast' is used by Jones, correctly, with a specific sense in the expression 'contrast for emphasis' in connection with (English) intonation (see Jones 1964[9]: § 1046 ff.) Jones very rarely uses the term 'opposition', if at all, and anyway he never does in connection with 'stress' itself.

LOCATION OF STRESS MAY FUNCTION DISTINCTIVELY

Jones is quite right on an important point when he correctly recognizes that the *location* of (a free) stress may function distinctively. His view is fundamentally different from the views of those who operate with e.g. the four stress phonemes in connection with AmE. I know of no-one who operates with two stress phonemes (i.e. primary stress and secondary stress) in connection with BrE such as Jones describes. Jones does not take the view that, for example, *billow* and *below* (which are segmentally identical) are distinguished from each other through the occurrence of two stresses (say, strong and weak) so that the former word has the strong stress occurring on the first syllable and the weak stress on the second syllable while the occurrence of the two stresses are reversed in the latter word.

Jones's awareness of *sporadicity* of the occurrence of this distinctive function of 'location of stress' is implied by his use of the word 'may' which occurs in the third and fifth quoted passages from Jones below. Jones's relevant passages are found as various places in Jones (1967[3]) as follows.

> […] the position of the strong stress (in words of more than one syllable) serves the same purpose [i.e. differentiating words] (§ 341)

> […] meaning depends […] upon the location of strong stresses [Jones's plural form] (§ 428)[20]

> […] words of more than one syllable *may* [my italics] be differentiated by the position of the strongest stress' (§ 429)

> Various pairs of English words are distinguished by the position of the strong stress (§ 453)

> […] one word *may* [my italics] be distinguished from another by the position of the strong stress. (§ 469)

I only need to cite here just another passage from Martinet with which Jones will agree.

> Ce qui peut avoir valeur distinctive, c'est la place de l'accent (Martinet 2008[5]: III-33).

As will be evident from all the examples to be cited below on the subject of the location of stress, we will deal with stress patterns of simplex words, that is to say, neither compounds nor syntagms.

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[20] Jones's expression 'the location of strong stresses' also occurs in Jones (1967[3]: § 462).

In connection with sporadic occurrences of the location of stress functioning distinctively, Jones (1967[3]: § 453) cites some pairs of examples from English (and further examples from a few other languages), viz. ˈ*increase* (n.) vs *in*ˈ*crease* (v.), ˈ*import* (n.) vs *im*ˈ*port* (v.), ˈ*insult* (n.) vs *in*ˈ*sult* (v.), ˈ*torment* (n.) vs *tor*ˈ*ment* (v.), ˈ*refund* (n.) vs *re*ˈ*fund* (v.), and ˈ*billow* vs *be*ˈ*low*. The meaning differences between the words of the respective pairs above are mostly the grammatical difference of noun vs verb, except in the last pair in which the difference is not only the grammatical difference of noun vs adverb/preposition but also in the semantic contents of the two words. It is noticeable that Jones intentionally chooses cases where the phonetic segments of the words of the respective pairs are identical and the only difference between the words is the different location of the stress. Jones leaves out of account all cases in which the two paired words with different locations of the stress are distinguished from each other with regard to the semantic differences but do not share identical phonetic segments. That this is so on his part is apparent from what he actually says in the footnote he attaches at the end of the list of examples (Jones, 1967[3]: § 453) as follows.

> Pairs of words, such as those written *present, subject, recount*, are not cases in point since they show differences of sound qualities as well as stress […]

Jones does add in this footnote the examples of ˈ*present* (n.)[21] vs *pre*ˈ*sent* (v.), ˈ*subject* (n., adj.) vs *sub*ˈ*ject* (v.), and ˈ*recount* (n.)[22] vs *re*ˈ*count* (v.) —I have additionally shown the relevant grammatical categories.

Through his objection to accepting pairs of words such as the above, Jones reveals some misunderstanding about what is meant by the location of stress in polysyllabic words functioning distinctively. The different vowels in the words of the respective pairs are nothing but the reflection of changes in stress patterns in the words caused by different locations of stress. The sole decisive factor responsible for the differentiation of the two words of each pair is the different locations of stress, no matter how different the vowels of the words happen to be. Consequently all the words whose inclusion Jones objects to should legitimately be retained.

To the list of a few pairs of words Jones objects to, I add below a few more which should be equally valid.

> ˈ*compact* vs *com*ˈ*pact*
> ˈ*entrance* vs *en*ˈ*trance*
> ˈ*extract* vs *ex*ˈ*tract*
> ˈ*intern* vs *in*ˈ*tern*
> ˈ*invalid* vs *in*ˈ*valid*

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[21]   I presume that Jones has in mind *present* (n.) here as meaning 'gift' and not 'present time' as he pairs *present* (n.) with *pre*ˈ*sent* (v.) meaning 'bestow'.

[22]   Actually, this word can be pronounced ˈ*recount* (as Jones puts it) meaning 'counting again' or *re*ˈ*count* (though Jones happens not to mention it here), both words being pronounced with [riː]. *EPD* under Jones's sole 'compilership' indicates the accentuation of *recount* (n.) as follows: *re*ˈ*count* (1917[1] through 1949[10]), but *re*ˈ*count* / ˈ*recount* (1956[11], 1963[12]). The accentual patterns *re*ˈ*count* / ˈ*recount* are retained in 1967[13]. (Jones died in 1967.) Thereafter, under various 'editorships', the new accentual patterns ˈ*recount* / ˌ*re*ˈ*count* are recorded in 1977[14] and are retained in 1997[15], 2003[16], 2006[17], 2011[18] up to present.

    The word *re*ˈ*count* (v.) meaning 'tell' is pronounced with [rɪ].

> ˈ*moral* vs *mo*ˈ*ral*
> ˈ*process* vs *pro*ˈ*cess*
> ˈ*produce* vs *pro*ˈ*duce*
> ˈ*progress* vs *pro*ˈ*gress*.

As in the case of e.g. ˈ*billow* vs *be*ˈ*low*, which Jones himself cites, the difference between the paired words consists essentially in the difference of semantic contents associated with different locations of stress rather than the difference of grammatical categories. This, I believe, is an important point. Traditionally, when it comes to the question of words which are differentiated from each other due to different placements of stress, most writers cite only those examples, cited further above, in which the two words of the respective pairs differ from each other in terms of grammatical categories like ˈ*increase* (n.) vs *in*ˈ*crease* (v.) rather than such examples, as ˈ*billow* vs *be*ˈ*low*.

As I already said on a few occasions, it is only sporadically that different places of stress in words function distinctively. It is just as important in this regard not to neglect a number of cases in which different places of stress in words do *not* function distinctively. Each of these words has stress placed in different locations, but it remains the same word. In this connection we recall that Jones (1967[3]: § 429) writes that "[…] words of more than one syllable *may* [my italics] be differentiated by the position of the strongest stress". We are not certain from this passage if Jones is implicitly referring to cases like the words listed below as well. He neither refers to such cases nor gives relevant examples in Jones (1967[3]). In Jones (1963[4]: § 444), however, he does give the following list of relevant examples:

> ˈ*hospital* ~ *hos*ˈ*pitable*, ˈ*applicable* ~ a*ˈpplicable*, ˈ*exquisite* ~ *ex*ˈ*quisite*, *in*ˈ*explicable* ~ ˈ*inex-*ˈ*plicable*, ˈ*formidable* ~ *for*ˈ*midable*, ˈ*dirigible* ~ *di*ˈ*rigible*, ˈ*controversy* ~ *con*ˈ*troversy*, ˈ*in-teresting* ~ *inte*ˈ*resting*, ˈ*intricate* ~ *in*ˈ*tricate*, ˈ*justifiable* ~ *justi*ˈ*fiable*.

The undeniable merit on the part of Jones is to opine that it is the *location of stress* that may function distinctively and *not stress itself*, the view that eludes the majority of linguists past and present.

Another merit on his part is his refusal to set up 'stress phonemes'.

SIGNEMES OF PITCH

We will now move on to 'signemes of pitch'. It is easy to imagine even in advance that Jones has in mind tonemes and intonation.

An early treatment of tonemes appears in Jones (1944: 6-8). Subsequently Jones (1967[3]) devotes the whole of Chapter XXV (i.e. §§ 470-87) to the subject of tonemes. He clearly sees a parallel between the phoneme and the toneme as he writes as follows in the latter work:

> We […] find in tonemes a treatment resembling that obtaining in regard to phones (tambers): the tones of tone languages can be grouped together into 'tonemes' in the same sort of way as

phones are grouped into phonemes,[23] and it is tonemes and not actual tones [which he calls 'allotones'] that distinguish one word from another. (§ 471).

Jones (1967[3]) defines a toneme as follows.

[…] a family of tones in a given tone language which count for linguistic purposes as if they were one and the same, the differences being due to tonal or other context. (§ 472)

It is evident then 'signemes of pitch' correspond to tonemes and that the 'tones' he mentions are 'allotones' (§ 473).

Jones emphasizes the variety of allotones which depend on their pitch and melodic nature in the contexts (tonal or otherwise) in which the allotones occur. This has relevance to the question of identification of a given toneme. Jones (1967[3]: § 472) actually says that

It would seem impossible to restrict the conception of the toneme to the tones found in isolated words […]

Yet it is true that many linguists will set up the tonemes of languages in terms of these tonemes as they occur in simple words in isolation. This is the case with, for example, the well-known four tonemes of Mandarin ('first toneme' as in *ma* 'mother', 'second toneme' as in *ma* 'horse', 'third toneme' as in *ma* 'hemp', 'fourth toneme' as in *ma* 'scold') which are established as these words occur in isolation. Phonemena known as tonal sandhi, which correspond to what Jones calls the phonemena involving 'allotones', are not neglected by linguists.

Jones (1944: 6-8) and Jones (1967[3]: §§ 474-85) illustrate the allotones of a tone (how to group them into a toneme) and the various contexts they occur in with examples from Tswana, Cantonese, Mandarin, Somali, etc.

As for intonation, on which Jones worked much, he operates in terms of 'tone groups'[24] and 'tune 1 (with a falling tone)' and 'tune 2 (with a rising tone)'[25] within which 'tones' (level, rise, fall, rise-fall, fall-rise) occur principally at 'contour points'. A tone group is so structured that it consists of the 'head', 'body', 'nucleus', 'tail' and 'prehead',[26] though the last two elements may be missing, as the case may be. Jones made no attempt to group, say, 'tune 1' and 'tune 2', into a 'tone group' nor to group, say, 'level tone', 'rise tone', 'fall tone', 'rise-fall tone' and 'fall-rise', into either 'tune 1' or 'tune 2'.

Jones's treatment of intonation can be seen at substantial length in Jones (1964[9]: Chapter XXXI, i.e. §§ 1007-88).

Jones does not envisage the concept of different (generally four) levels of pitch that are supposed by some to function distinctively. There is no attempt on Jones's part, if at all,

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[23]   Remarks of the same tenor are found already in Jones (1944: 7-8).
[24]   The notion of 'tone group' had been first introduced by Palmer (1922). So had 'nucleus' and 'tail'.
[25]   Two kinds of 'tune', i.e. 'tune 1' and 'tune 2', were introduced by Armstrong & Ward (1926).
[26]   'Prehead' was additionally used by e.g. Kingdon (1958: 12-3).

to group variants into an 'intoneme'.[27] In this respect, he is not sympathetic to those Americans who set up four pitch levels which are four intonemes. The Americans' analysis of AmE intonation follows Bloomfield's notion of 'secondary phonemes' (1933: 90-92 *et passim*). This led to the Americans viewing intonation (as well as stress) as functioning distinctively (but not in the sense of 'distinctively' as phonemes do). Wells (1945) and Pike (1945) established four 'pitch phonemes' in intonation (they would be four intonemes) which consist of four levels (1 to 4) of pitch .

One peculiarity of intonation is such that different pitch phonemes or different tunes do not bring about *discreteness* as different phonemes do. Whereas e.g. the difference between /p/ and /b/ as in *pat* vs *bat* is discrete, such is not the case between the occurrence of e.g. the pitch phonemes /2/ instead of /3/ or /4/ at the contour points, as the resultant difference is gradual, not discrete. The difference between finality in a statement with the use of Tune 1 on the one hand and non-finality in a question with the use of Tune 2 on the other is a question of 'more or less' as voice rises by gradual degrees towards the end of the tunes. As distinctiveness is compulsorily linked to discreteness, pitch phonemes cannot in reality function distinctively. As Catford (2001[2]: 174) rightly puts it, "[…] intonation […] has a *pragmatic* rather than a *semantic* function." 'Semantic function' effectively means 'distinctive function'. This would rule out intonation as a candidate for 'signemes of pitch'.

SIGNEMES OF JUNCTURE

We now move on to consider 'signemes of juncture', the last type of 'signemes' mentioned by Jones.

Collins & Mees (1998: 299) write as follows about Jones's initial publications on 'juncture'.

> The second article [Jones (1926)] is notable for its discussion of juncture (the actual term is not employed), anticipating the more detailed treatment in Jones [Jones (1931)], and the later work of the American structuralist school on this topic, e.g. Trager–Bloch (1941).

In my view, Jones (1931) is significant on two points of equal importance. Firstly, Jones presents and discusses as a question of 'syllable division' what subsequently came to be known by the term 'juncture'. Secondly, Jones's recommendation that phonetic material on the basis of which the phonemes of a given language are to be established should be words (i.e. simplexes, not complexes or syntagms) since a disregard of this recommendation will risk establishing phonemes which do not exist in the given language.[28] It is the first point that concerns us just here.

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[27]   Cf. Pike (1945: 25) writes: 'In English, four relative but significant levels (pitch phonemes) can be found which serve as the basic building blocks for intonation contours, and Pike (1948: 60) says: '[…] One may choose to call the key pitches INTONATION PHONEMES or INTONEMES.'

[28]   This important point is mentioned in Gimson (1962[1]: § 5.37, 1972[2]: § 5.37, 1980[3]: § 5.37, 1989[4]: § 5.37) but is infelicitously dropped by Cruttenden in Gimson (1994[5]; 2001[6]; 2008[7]; 2014[8]).

Examples given in (2(*a*), 2(*b*), 2(*c*), 2(*d*)) in Jones (1931: 61-2) are particularly relevant to both points mentioned above. For example, the two utterances [ˈðæt s ˈtʌf] (*that's tough*) and [ˈðæt ˈstʌf] (*that stuff*) demonstrate that the syllable division occurs between [s] and [t] in the former utterance and between [t] and [s] in the latter utterance. The analysis that is performed on the basis of these two utterances, which are not simplexes, arrives at the erroneous establishment of two different phonemes, /tʰ/ (aspirated) and /t/ (unaspirated) in English.

Jones describes various phonetic phenomena associated with syllable division occurring at different points in pairs of words of various dimensions, i.e. simplex words, compounds or syntagms, of identical segmental structure (e.g. *upraise / appraise*, *signet-ring / symmetry*,[29] *that's tough / that stuff*, *four aces / four races*,[30] *up late / a plate*). Jones's description illustrates instances of what post-Bloomfieldians understand by 'juncture' occurring at different places and contributing to the difference between the words of the respective pairs.

In a recent work, Skandera & Burleigh (2011[2]: 60-62) explain at some length the notion of 'juncture', though without mentioning neither Jones nor American writers. They do cite well-known examples like *that stuff / that's tough*, *night rate / nitrate*, *a name /an aim*, etc. They say (*op. cit*.: 62) that it is the *location* [my italics] of the internal open juncture that distinguishes *a name* from *an aim*.

The following six points may be noted.

(1) Firstly, the term 'juncture' was first introduced in the form of 'juncture phoneme' or, in a shortened form, 'juncture', by Trager & Bloch (1941: 35). The term 'juncture' recurred in Bloch & Trager (1942: 35). This was a decade *after* Jones (1931). Trager & Bloch (1941: 225-6) also introduced the terms 'open juncture' and 'close juncture', and furthermore, 'internal open juncture' and 'external open juncture', the two sub-types of 'open juncture'. All these terms were also used in Bloch & Trager (1942: 47). For instance, *night-rate* has an internal open juncture between *t* and *r*, *nitrate* has an internal close juncture between *t* and *r*, and *Nye trait* has an external open juncture before *tr*.

(2) Secondly, Jones does not regard 'juncture' as a phoneme and consequently rejects 'juncture phoneme'. He does not agree with the proliferation of different types of phonemes ('stress phoneme', 'intonation phoneme (= 'intoneme')', 'juncture phoneme') on the part of post-Bloomfieldians who were inspired by the notion of 'secondary phonemes' proposed by Bloomfield (1933: 90-92 *et passim*).

(3) Thirdly, Jones rarely used the term 'juncture' in his own works even after the term was introduced in America and preferred to talk in terms of 'syllable division'. The term 'juncture' is not employed even in Jones (1967[3]). Jones (1956[8]) newly incorporated a chapter (not found in any previous editions) 'Chapter XXXII Syllable Division', in which the term

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[29]   This pair is obviously a quasi-minimal pair but this affects in no way the point being made by Jones.
[30]   This pair is valid only if the so-called 'linking-*r*' occurs in the pronunciation of *four*.

'juncture' was not employed. However, we find him using this term with reservation in Jones (1957).

(4) Fourthly, Jones will at best *vicariously* envisage the place of juncture as functioning distinctively. His examples of the two utterances, *that's tough* and *that stuff*, in which syllable division occurs between *that's* and *tough* in the first utterance and between *that* and *stuff* in the second would be seen in terms of an external open juncture occurring where syllable division occurs at different places in the two utterances. In other words, the two utterances are differentiated from each other by virtue of different places at which the external open juncture occurs. Bloch & Trager's examples, *night-rate* and *nitrate* (to which we add *Nye trait*[31]) are distinguished by the different places of (internal open and external open) juncture (in *night-rate* vs *Nye trait*) but this does not work for *nitrate* which has a close juncture. Presumably, in Jones's vicarious view of 'juncture (phoneme)', the difference among 'internal open juncture', 'external open juncture' and 'close juncture' is virtually irrelevant and he would be happy to consider them globally as 'juncture' *tout court*, so far as he is concerned, and talk about different places of juncture.

(5) Fifthly, the status of juncture phonemes (or junctures, for short) as to whether or not they are segmental phonemes along with vowel phonemes and consonant phonemes seems to be a moot point, and there is some apparent inconsistency in this regard. Are they segmental phonemes or suprasegmental phonemes (like stress phonemes and pitch phonemes)? If the former, they would appear, in phonological notation, in company of phonemes. If not, they would not appear in that way. I quote at some length from Hall (1964: 84).

> Vowel and consonant phonemes are […] often referred to as *segmental* or *linear* phonemes. Other phonemic features, such as stress, juncture, and intonation patterns, do not come either "before" or "after" vowels and consonants,[32] but occur at the same time, extending over segments of utterances, either syllables or longer stretches. In phonemic transcription, we represent stress, juncture, and intonation by symbols placed either above those for linear phonemes[33] (e.g. accent-marks over vowel letters) or next to them in accordance with special conventions that they are to be understood as applying to specific stretches of linear symbols […] Hence phenomena of stress, juncture, and intonation are often called *nonlinear* or *suprasegmental* phonemes.

To place in phonological notation symbols for juncture phonemes in company of vowel phonemes and consonant phonemes which are known to be representatively segmental phonemes, is liable to induce readers to imagine that juncture phonemes are as segmental as are vowel phonemes and consonant phonemes. Yet phenomena of juncture as well as stress

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[31]   This example is found in Hall (1964: 111), spelt *Nye-trait* and with the gloss "a trait or characteristic of a Mr. Nye".

[32]   But see in Hall (1964) e.g. "/hwáj+tʃúz/ [*why choose*?] […] vs /hwájt+ʃúz/ [*white shoes*] […]" (99), "/nájt+rèt/ [*night-rate*], /náj+trèt/ [*Nye-trait*]" (111) […] "/drɛd+nɔt/ *dreadnought* […] /dór+nàb/ *door-knob* […] /fájr+prùf/ *fire-proof* […] /blú+àjd/ *blue-eyed* […] *White House* /hwájt+hàws/ […]" (186).

[33]   I have personally yet to see symbols for juncture phonemes placed *above* those for linear phonemes.

and intonation are claimed to be suprasegmental phonemes. It is somewhat baffling and confusing. It seems clear-cut and not misleading to operate with 'syllable division' as Jones does rather than with 'juncture phonemes' as do post-Bloomfieldians.

(6) Sixthly and lastly, there is no doubt that Jones's study of phonetic phenomena in terms of 'syllable division' *predated* by at least a decade the studies in terms of 'junctures' conducted by post-Bloomfieldians'.

In conclusion, then, 'signemes of juncture' correspond to no entity which functions distinctively.

SUMMARY OF MY SURVEY AND DISCUSSIONS

Following my survey and discussions above of the various types of 'signemes' that Jones (1957) proposed, I will give a summary of the points.

1. 'Signemes of phone' corresponds to the phoneme.

2. 'Signemes of length' correspond to the chroneme provided that there are at least two chronemes, i.e. 'short chroneme' and 'long chroneme', in a given language, for them to function distinctively. However, the use of chronemes has nowadays largely given way to that of phonemes without involving chronemes.

3. 'Signemes of stress' may correspond to 'stress' which Jones is at pains to distinguish from what he calls 'prominence'. Stress may function distinctively in a language like Serbo-Croat and some other languages in which there are at least two different *kind*s of stress. In respect of languages with a free stress like English, Jones rightly recognizes different locations of the stress may function distinctively.

4. 'Signemes of pitch' correspond to the toneme. However, intonation, though it is a question of pitch (in its punctual and dynamic manifestations), can hardly be considered to correspond to 'signemes of pitch' so far as Jones is considered, as he does not operate with different levels of pitch in terms of different intonemes as do some post-Bloomfieldians.

5. Finally, 'signemes of juncture' may, though with much reservation, correspond to what post-Bloomfieldians stipulate in terms of various 'juncture phonemes'. However, it is doubtful if the individual junctures themselves function distinctively. More likely, it is the different locations of a certain type of juncture (external open juncture) that function distinctively (cf *that's tough* vs *that stuff*) and also the different locations of the different types of juncture ('internal open juncture' as in *night-rate*, and 'external open juncture' as in *Nye trait*) that may function distinctively.

SURVIVAL OF THE TERM 'SIGNEME'?

It is true that the term 'signeme' has practically disappeared over the years in linguistics and phonetics literature. Yet the term is still found in relatively recent past in a few linguistics encyclopedias. In Bussmann (1990[2]: 684) we read as follows.

> **Signem**. Kunstwort aus *sign-* und dem Wortbildungselement *-em* (= Bezeichnung für funktionelle Einheiten auf → Langue-Ebene). S. wird als Oberbegriff für alle distinktiven Elemente auf verschiedenen Beschreibungsebenen verwendet.

The brief references that are given following the above definition consist of only a few names and does not include Jones.

At a subsequent date we read in Bussman (1996: 436)[34] as follows.

> term formed from *sign-* and *-eme*, which is used to refer to all distinctive elements at the various levels of linguistic description.

What is noticeable is that this definition of the term 'signeme' applies to *the various levels of linguistic description*, that is, not only the phonetic and phonological levels (though Jones would prefer to say 'phonetic level'). This opens the way to considering further levels of linguistic description. However, restrictive application of the term 'signeme' according to this definition is suggested by the word 'elements'. This excludes that the term 'signeme' is applicable to such linguistic *devices* as function distinctively. For example, at syntactic level, the order in which 'words' occur and which functions distinctively (distinctive word order) is excluded (cf. *it is…* vs *is it…*), or at 'Wortbildung' level (e.g. *birdsong* vs *songbird*). The device of ordering is traditionally accounted for by 'taxeme', so that there is no need to use the term 'signeme' for this purpose. Besides, 'taxeme' can apply to phonematic units such as the phoneme and tonematic units such as the toneme as well, which function at phonological level. Applicability of the term 'signeme' at levels other than phonetic and phonological seems to be appreciably limited.

All in all, there does not seem to be much scope for utilizing the term 'signeme' in current linguistics except, perhaps, that its nomenclature might be changed to something like 'distincteme' (more manifestly associated with the notion of 'distinctiveness', 'distinction'), but the term 'distincteme' will still be plagued with the suffix *-eme*.

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[34]   As can be seen, Bussmann (1996), which is in English, is based on Bussmann (1990[2]), with revisions and additions.

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