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# On the “zero consonant” phoneme in modern standard Finnish – towards a coherent paradigmatic interpretation

## Introduction

There is a general consensus that the consonant paradigm of modern standard Finnish comprises the following 13 members: the three basic unvoiced (and unaspirated) stops *p t k*; the corresponding (voiced) nasals *m n ŋ*; the inherently unvoiced continuants *s h*, of which *h* can also have voiced realisations; the voiced dental stop *d*; the two (voiced) liquids *l r*; and the two glides *v j* (all quoted here in their orthographical representations). In terms of places of articulation there are the three labials *m p v*, of which the glide *v* is normally pronounced as a dentilabial (labiodental); the six dentals *n t s d r l*, among which *n d r* are pronounced as postalveolars; the single palatal (glide) *j*; and the three palato-velars *ŋ k h*, of which the continuant *h* has mainly laryngeal, but also velar and palatal, realizations. Of the two continuants, *s* may also be specified as a sibilant fricative, while *h* may be described as a spirant with relatively little fricative noise.

The consonant system may, consequently, be presented in a matrix with four places (labial, dental, palatal, velar) and seven manners of articulation (nasal, voiceless stop, continuant, voiced stop, vibrant/trill, lateral, glide) (Table 1).<sup>1</sup> The paradigmatic relationships of the continuants *s h* with regard to the glides *v j*, and of all these with regard to the segments *d r l*, are an issue open to several alternative interpretations (Janhunen 2007, 204–205), but there is no question as to the number of contrasts involved.

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1. Note that voicing is here, for the sake of clarity and simplicity, classified as a “manner feature”, as would secondary articulations such as aspiration, glottalization or palatalization were they present in the language. In reality, voicing is only marginally distinctive in Finnish, and only in the pair *t* vs. *d*, which, nevertheless, involves also a slight difference with regard to the place of articulation (dental vs. postalveolar). In principle, the obstruents *p t k s h* are always inherently unvoiced in Finnish, while the sonorants *m n ŋ r l*, including the glides *v j*, are inherently voiced.

<i>m</i>	<i>n</i>	<i>ng</i>	<i>m</i>	<i>n</i>	<i>ng</i>
<i>p</i>	<i>t</i>	<i>k</i>	<i>p</i>	<i>t</i>	<i>k</i>
	<i>s</i>	<i>h</i>	<i>f</i>	<i>s</i>	<i>sh</i>
	<i>d</i>		<i>b</i>	<i>d</i>	<i>g</i>
	<i>r</i>			<i>r</i>	
	<i>l</i>			<i>l</i>	
<i>v</i>		<i>j</i>	<i>v</i>		<i>j</i>

Table 1. The basic consonant paradigm of standard Finnish.

Table 2. The expanded consonant paradigm of standard Finnish.

Most original regional dialects of the language lack the voiced dental stop *d* (in the dialects normally represented as *r*, *l* or zero), and many also lack the velar nasal *ng* as a separate phoneme (for more information on the dialects, cf. e.g. Kettunen 1940; Rapola 1947). The segment *d* is attested in native words only as a morphophonological alternant (weak grade) of *t*, and in a process-oriented description it would not count as a separate deep-level phoneme. The velar nasal *ng* [ŋ], on the other hand, has a distinctive status only as a medial geminate [ŋŋ], which represents a morphophonological alternant (weak grade) of the homorganic cluster <nk> = *ngk* [ŋk]. There are also several other restrictions governing the phonotactics of the individual consonants, which means that the subparadigms of consonants used in the different positions within a word may vary. For instance, the segments attested in word-initial position include *m n p t k s h r l v j*, while those attested in word-final position include only the dentals *n t s r l*.

Some dialects, including the modern standard speech of educated individuals, incorporate several new marginal phonemes, which are mainly used in recent loanwords, but which also occur in innovative native items especially in the urban slang. These varieties of the language also exhibit deviations from the standard phonotactic patterns. For instance, the segment *d*, but not *ng*, has extended its phonotactic occurrences to initial position, while all consonants, with the possible exception of the glides *v j*, can be used in final position. The principal marginal phonemes are the voiced labial and velar stops *b g*, as well as the unvoiced labial (dentilabial) continuant *f*, all of which have obvious niches in the system. For some speakers, the system also contains a new alveopalatal sibilant *sh* (š) [ʃ], which has a niche in the palatal column (Table 2). However, many speakers ignore the distinction between *s* and *sh*, possibly because the system lacks other palatal obstruents, and also because the basic dental *s* often has realizations coming close to the palatal range.<sup>2</sup>

2. The realizations of *sh* (š) in Finnish vary, but they normally come close to the Central and Western European pronunciation of the corresponding sounds, like French <ch> and English <sh>. Although typically pronounced as an alveopalatal, in the phonological system this sound can in many languages be classified together with actual palatals, a situation connected also with historical factors. For Finnish, however, the issue has only marginal relevance.

There is, however, at least potentially, one additional consonant phoneme in Finnish. This consonant is more elusive than the others and is therefore traditionally not recognized as a member of the consonant paradigm, though it has a conventional symbol, the apostrophe (’), as used in certain positions even in the standard orthography. To give it more graphic prominence, the present paper will use the letter *x*, a symbol that has actually also been used (in the raised shape <sup>x</sup>) for some of its occurrences. Due to its elusive nature, this *x* may be termed “zero consonant”, but it should be understood that this label does not necessarily make it any less relevant for the consonant paradigm. Moreover, it has also clearly segmentable phonetic realizations depending on its position. To see how this segment functions, it is convenient to distinguish between four positions: initial, medial, final, and geminate. Each of these will be examined separately below.

## Initial position

It is a widely accepted conception that consonants (C) and vowels (V) are universally arranged in sequences of the type CV, rather than VC. Although this has occasionally been disputed for some languages, there is no reason to doubt that in Finnish, at least, syllables begin prototypically with a consonant (consonantal anlaut). There are, however, apparent exceptions to this regularity, the most obvious counterexamples being offered by lexical items that seem to begin with a vowel (vocalic anlaut or “null onset”). All vowels in Finnish can begin a word without the physical presence of a preceding consonant. This is a word type attested in many languages, including many Uralic languages, and in Uralic it can be dated back to the earliest reconstructable protolanguage.

There are, however, good arguments to treat the lack of an initial consonant in Finnish as an “empty” consonant, that is, as a consonant that has no positive marked properties, but that nevertheless may be thought to fill the slot that would otherwise remain empty. In fact, depending on the dialect, especially in eastern Finland, initial vowels can be preceded by a clearcut segmental glottal stop, the so-called “hard anlaut” (“luja aluke”). Let us therefore tentatively identify the “empty” slot at the beginning of words as a manifestation of the “zero consonant”. We may extend this principle to the protolanguage, e.g. Finnish orthographical <ala> ‘lower part’, <elä-> ‘to live’, phonemic *xala* ‘lower part’, *xelä-* ‘to live’ < Proto-Uralic \**xīla*, \**xela-*. We see that the “zero consonant” behaves phonotactically like any other initial consonant: it occupies a slot in the string of sounds, and it can be followed by all vowel qualities, just like any other initial consonant.

That the initial “zero consonant” is not marked orthographically in Finnish is, in fact, simply due to the orthographical system used for Finnish. For this detail, Finnish follows the European heritage of the Latin script. In many other orthographical systems, as, for instance, in the Semitic and Indian traditions, as well as in the Korean Hangeul, the initial “zero consonant” is written with

a consonant letter (“alif”), signalling its status as an additional member of the paradigm. (It may be recalled that the “vowel letters” of the Graeco-Roman script tradition are also originally consonant letters.)

As far as the Uralic languages are concerned, it may be noted that the initial “zero consonant” has actually developed into a velar nasal in several forms of “Northern Samoyedic”, as in Tundra Nenets *ngil*<sup>o</sup> ‘lower part’ < \**ngilə* < Proto-Samoyedic \**xilə*. The velar nasal itself can have undergone further developments, including palatalization before original front vowels, as in Nganasan \**nyili*- ‘to live’ < \**ngilä*- < Proto-Samoyedic \**xilä*-. The appearance of the “prothetic” nasal in Northern Samoyedic is easier to understand if we think of the “zero consonant” as some kind of glottal sound: we are here dealing with a manifestation of the phenomenon known as “rhinoglottophilia” (Matisoff 1975). This means that the “prothetic” nasal did not develop out of “nothing”, but rather, out of the “zero consonant” that was already there.

For Finnish, an additional argument in favour of the identification of the “zero consonant” as a phoneme with a slot in the string of segments is provided by its behaviour at the word boundary in sandhi. This feature is normally treated in Finnish grammars in connection with morphophonological boundary phenomena (“*sananrajaiset äänneilmiot*”). Typically, the “zero consonant” is progressively assimilated by a preceding word-final consonant, resulting in a geminate at the word boundary, as in: *nyt+xon* ‘now (it) is’ → *nyt\_ton*. This gemination is phonemic and can lead to the neutralization of contrasts as in *lipun+xosto* ‘buying a ticket’ vs. *lipun+nosto* ‘raising the flag’ → (both:) *lipun\_nosto*, cf. also the well-known example *taivaallinen\_nautuus* ‘heavenly glory’ (playing on the phonetic confusion between *xautuus* ‘glory’ vs. *nauta* ‘cattle’, Penttilä 1969, 212). If neutralization is to be avoided, the “zero consonant” has to be pronounced as a clearcut glottal stop, as in *nyt+xyö* [nyt ʔyø] ‘now (it is) night’ vs. *nyt+työ* [nyt tyø] ‘now (it is time to do) work’ (cf. Penttilä 1963, 25; Karlsson & Lehtonen 1977, 45).

The progressive assimilation of the “zero consonant” is occasionally confused with “elision”, by which should only be understood the positional and optional deletion of final vowels, which automatically conditions the degemination of any preceding geminate, as in *täällä* ‘here’ > *tääl*. If a form with an elided final vowel is followed by a word beginning with the “zero consonant”, conditions exist for the regular assimilation as in *tääl+xon* ‘here (there) is’ → *tääl\_lon* (cf. Hakulinen & al. 2004 §38), but two phenomena have otherwise nothing to do with each other. It is important to recognize that, from the point of view of syllable division, the second component of the geminate always belongs to the following syllable, that is, to the following word. The correct syllabification of assimilated sequences is therefore of the type *nyt\_ton*, and not of the type “*nytt\_on*”. What we are dealing with is, in other words, a segmental alternation, in which the “zero consonant” is replaced with a value identical with that of the last consonant of the preceding word.

## Medial position

An initial “zero consonant” can come to stand in medial position in compound words, when a component ending in a vowel is followed by a component beginning with the “zero consonant”. In such cases, according to the prosodic rules of Finnish, the components tend to retain some accentual independence. Even so, the “zero consonant” separating the two vowels can be pronounced as a (weak) glottal stop, which in the standard orthography is indicated by using a hyphen, as in *kuormaxauto* ‘lorry’ (literally: ‘load-car’), phonetically [kuormaʔauto], orthographically <kuorma-auto>. It would, of course, be possible to take this as indicating the presence of a juncture (syllable boundary, word boundary), but the fact remains that there is also a segmental feature present in the sequence, and in many cases it is phonetically the most important signal of the boundary, as in *kirjaxala* ‘book branch’ (compound word) vs. *kirjaaja* ‘registrar’ (non-compound derivative), while the prosodic differences are easily reduced and lost in regular speech.

More importantly, a phonemically significant “junctural” distinction is also possible within non-compound words. This happens when the “weak grade” of the velar stop *k*, which is normally represented as zero, is preserved at the boundary of two non-identical vowels, as in *reki* ‘sledge’ : CONN *reen* [re:n] : PL INESS *rexissä* [reʔissä], cf. *tie* ‘road’ : PL INESS *teissä* [teissä]. There are many minimal and subminimal pairs in which this distinction is relevant in regular standard Finnish, as, for instance, also in PL INESS *jo-i-ssa* = *joissa* ‘in which’ (from PRON REL *joka* ‘which’) vs. *jox-i-ssa* = *joxissa* ‘in rivers’ (from *joki* ‘river’); PRS SG1 *käy-n* = *käyn* ‘I visit’ (from *käy-* ‘to visit’) vs. *näxy-n* = *näxyn* ‘I am visible’ (from *näky-* ‘to be visible’). In other examples, the location of the “zero consonant” in the sequence can also have a distinctive role, as in PL INESS *haxuissa* ‘in searches’ (from *haku* ‘search’) vs. *hauxissa* ‘in pikes’ (from *hauki* ‘pike’).

Traditional grammars speak in these cases of a contrast between long vowels (including diphthongs), which are monosyllabic entities, and “vowel sequences”, which are, by definition, bisyllabic structures. The implication is that the distinctive factor is synchronically the syllable boundary (cf. e.g. Häkkinen 1978, 17–18; Karlsson 1982, 165–168). However, using syllable boundary (or any other juncture) as a unit in segmental phonology is always a questionable solution from the point of view of phonological theory (or, the “elegance” of the analysis). It is therefore better (more “elegant”) to analyse these examples as involving the segmental “zero consonant”, which, when present, separates the vowel segments from each other and prevents them from forming a monosyllabic entity. It may be noted that the standard orthography allows the use of the apostrophe as a sign of the medial “zero consonant”, as in <ha'uissa> vs. <hau'issa>, though this device is not particularly encouraged by normative grammars.

Critics of the segmental analysis of the “zero consonant” will, of course, maintain that the glottal stop representing the weak grade of *k* between vowels is pronounced very weakly, normally simply as a glottal constriction or as a brief interruption in the intensity flow of the vocalic sequence. This should not be

taken as an argument that the segment is not there, however, for in spite of the type of phonetic realization this is a feature that clearly has a slot in the string of segments. Morphophonologically, also, it is natural that the velar stop *k* alternates with an actual segment, a weaker consonant, which may or may not also be a velar in the phonological system. Thus, the medial “zero consonant” has a phonotactic position, a phonetic realization, and a segmental morphophonological counterpart – all characteristics of a true phoneme, rather than of a junctural feature.

It is another matter that the medial occurrences of the “zero consonant” are diachronically and dialectally liable to be easily lost. In earlier (19th century) orthographical practice, it was common to mark the “zero consonant” with an apostrophe even in cases in which it is no longer pronounced in the regular language. In many dialects, the “zero consonant” is absent also between non-identical vowels, which means that the minimal and subminimal pairs converge, as in SG CONN *pixen* > *pien* ‘pitch’ (from *piki*) vs. *tien* ‘road’ (from *tie*). This may lead to new types of morphophonological alternations and simplifications, as in *koko* ‘size’ : SG INESS *koxossa* > *koossa* : PL INESS (traditional:) *koxoissa* ‘in sizes’ > (modern colloquial:) *koissa*. On the other hand, there are indications that the presence of morphological boundaries may favour the preservation of the “zero consonant”, as in PL INESS *pix-i-ssä* = *pixissä* ‘in pitches’ vs. SG INESS *pii-ssä* = *piissä* ‘in flint’ (from *pii*). It goes without saying that the actual variation between speakers should be investigated experimentally in much more detail than has been done.

## Final position

Of all occurrences of the “zero consonant” those observed in the word-final position have always drawn the most attention from scholars, since their diachronic connection with original final consonants is of taxonomic significance for Finnish and Finnic dialectology (Itkonen 1965). The traditional terms for the “zero consonant” in final position are “final aspiration” (“loppuhenkonen”) or “final residue” (“jäännöslopuke”). These terms are based on the fact that it is, indeed, possible in these cases to pronounce a laryngeal sound, which, especially in the eastern dialects of Finnish, can be realized as a glottal stop, as in IMP SG2 *tulex* [tuleʔ] ‘come!’. Diachronically, this glottal stop represents a “real” consonant segment (often even a separate morpheme), which in many form categories was *\*k*, but which could also be *\*h*, more rarely some other consonant.

The representation of the traces of *\*k* and *\*h* varies in the dialects (cf. e.g. Rapola 1966, 298–312, 321–324; Kettunen 1940 Map 28), and depending on the situation, it might be possible to treat the final glottal stop also as an allophone of either *k* or *h*. This is impossible in the standard language, since *k* and *h* can also, even if only marginally, appear in final position. On the other hand, it is often maintained that the final glottal stop is not pronounced at all, which is why “it is not an independent segmental phoneme” (Karlsson & Lehtonen 1977, 45). Although this is certainly true for many speakers, especially those with

a western dialectal (or Swedish bilingual) background, others do have a contrast in pairs such as *xanna* [name] vs. IMP SG2 *xannax* ‘give!’. The “zero consonant” in such examples is probably best described as an unreleased glottal stop. Even when it is not segmentable in the phonetic string of sounds, it is manifested in transitional features, such as the intensity flow and duration of the preceding vowel, a situation that has in fact been correctly noted by some grammarians in the past (Penttilä 1963, 13).

The principal reason why the final “zero consonant” has occupied scholars is, however, not connected with its phonetic realization, but with its morphophonological behaviour at word juncture (cf. e.g. Itkonen 1964). In sandhi, the “zero consonant” assumes regressively the quality of the initial consonant of the following word, as in *xannax+mennäx* ‘let (it) go!’ → *xannam\_mennäx*. This behaviour is traditionally called “final duplication” (“loppukahdennus”, Ikola 1969; Itkonen 1969), but since it involves also the initial segment of the following word and takes place at the juncture of two words, the terms “initial duplication” (“alkukahdennus”, Penttilä 1969) and “boundary gemination” (“rajageminaatio”, Hakulinen & al. 2004 §34) have also been used. The phenomenon is phonemic and can lead to neutralizations, as in IMP SG2 *tulex+tännex* ‘come here!’ vs. PRS SG2 *tulet+tännex* ‘you come here’ → (both:) *tulet\_tännex*.

In standard Finnish, the assimilation rule of the final “zero consonant” applies to all consonant qualities, including the glides, as in *tulex+vain* ‘do come!’ → *tulev\_vain*, *tulex+jo* ‘come now!’ → *tulej\_jo*. A facultative exception can, however, be made for the laryngeal spirant *h*, as in *tulex+heti* ‘come immediately!’ → *tuleh\_heti* ~ *tule\_heti*. This might suggest that *x* and *h* have a special phonetic relationship, both being “laryngeals”, and that the sequence *xh* is automatically simplified to monosegmental *h*. On the other hand, since a geminate *hh* is attested in the language only after a stressed vowel, as in *hihhuli* ‘religious fanatic’ (perhaps the only example), we might also be dealing with a positional degemination rule that applies dialectally to *hh* after unstressed vowels. (We are here not discussing the dialects, especially those of southeastern Finland and the Karelian Isthmus, which lack the phenomenon of boundary gemination altogether, cf. Kettunen 1940 Map 28.)

In the standard orthography of modern Finnish, the final occurrences of the “zero consonant” and the resulting geminates are never indicated – not even in cases in which the geminate comes to stand in word-medial position due to the attachment of a clitic, as in IMP SG2 PCLE *mene-x=kin* ‘be sure to go!’ → *menekkin* [menekkin] vs. CONN *meneki-n* [menekin] ‘sales demand’, both orthographically <menekin>. This is, without a doubt, the most serious flaw in the otherwise extremely “phonetic” orthographical system of Finnish. During the formation of the current literary norm (in the 19th century) there were serious attempts to indicate this segment in writing, either by the apostrophe (’) or even by a regular letter (notably <c>). Unfortunately, these attempts were ignored by the majority of language developers, perhaps under the influence of their (western) dialect basis (and the earlier norm of “Bible Finnish”), and the orthography remained incomplete.

## Geminate position

It has been demonstrated above that the “zero consonant” is involved in two kinds of assimilation: on the one hand, the regressive transferring of the value of the initial consonant of a word to the final “zero consonant” of the preceding word, and, on the other, the progressive transferring of the value of the final consonant of a word to the initial “zero consonant” of the following word. In normal speech, both types of assimilation yield the same result, which means that word-boundary sequences of two identical consonants are opaque at the surface, as in: IMP SG2 *xannax+nolla* ‘give a zero!’ → *xannan\_nolla* vs. PRS SG2 *xannan+xollax* ‘I let (it) be’ → *xannan\_nollax* vs. *xannan+nollan* ‘I give a zero’ → *xannan\_nollan* (with *nolla* ‘zero’: CONN *nollan* vs. *xollax* ‘to be’).

A natural consequence of the assimilations affecting the “zero consonant” is that in a sequence consisting of both a word-final and a word-initial “zero consonant”, the two “zero consonants” produce a geminate. This geminate is in careful standard speech pronounced as a geminate glottal stop, as in *xannax+xollax* ‘let (it) be!’ → *xannax\_xollax*, phonetically [ʔannaʔ\_ʔollaʔ]. Even grammarians who do not otherwise operate with the concept of a glottal stop phoneme in Finnish have been ready to accept the reality of the geminate glottal stop in such examples. For these grammarians, the glottal stop in Finnish is a marginal phoneme, present only as a geminate in medial position, in which respect it resembles the velar nasal phoneme *ng*. More often, however, the glottal stop is explained as a “junctural” phenomenon, separate from the phonological paradigm.

Again, it has to be admitted that not all speakers of the language pronounce a clearcut geminate glottal stop in these examples. The geminate can be replaced by a single glottal stop, a process reminiscent of the simplification of the geminate *hh*. It can also be replaced by a glottal constriction of varying strength and duration, or with other phonation features. It could be maintained that it can also be completely absent for some speakers, but this is questionable and should be investigated in the light of phonetic data.

## Conclusions

It is still too early to say whether there is any reason to assume that a “zero consonant” should be postulated for all those languages that have “initial” vowels. The decision obviously will have to depend on the overall phonological system of each given language, and especially on whether the “zero consonant” is also attested in other positions. The Hungarian liaison rules, for instance, suggest that initial vowels are preceded by “nothing”, since a final consonant can be transferred to the beginning of the following word both in compound words, as in *vas+út* ‘railway’ → *va.sút*, and in phrases, as in *éljen+a+szabadság* ‘long live liberty!’ → *élje\_na\_sزابadság* (Papp 1966, 147–156). This can also lead to neutralizations of the type *az+ár* ‘the price’ vs. *a+zár* ‘the lock’ → (both:) *a\_zár*.



For standard Finnish, however, it is reasonable to postulate a separate “zero consonant” phoneme, which occurs in several phonotactic positions: initially, finally, medially, and as a medial geminate, as in *xannax\_xollax* ‘let (it) be!’ (initial, final and geminate), *joxissa* ‘in rivers’ (medial). In all these positions, the “zero consonant” participates in morphophonological alternations with other segments. It is only in heterorganic consonant clusters that this element is not attested, and the reason is obvious: it is automatically assimilated to either a preceding or a following consonant.

In the consonant paradigm, the “zero consonant” – here written *x* – has to be identified as some kind of “laryngeal”, which has a natural niche in the subsystem of glides in the same column as the velars and the “laryngeal” *h* (Table 3). In fact, the “zero consonant” could also be seen as another hiatus-filling element, which, like the glides *v* and *j*, occur at the junction of vowels belonging to separate syllables. There is a persistent myth that Finnish can have even very long sequences of vowels, but in reality these sequences are cut into sections separated from each other by glides, including the “zero consonant”. Orthographical examples like <hääyöaie> and <riiuuyöaieaatos> (Jussila 2012) are therefore misleading, since their actual phonemic segmentation is *hää.xyö.xai.jex* and *rii.juu.xyö.xai.jex.xaa.tos*. The orthographical illusion of vowel sequences is, of course, mainly due to the lack of a special symbol for the “zero consonant”.

It is obvious that the elusiveness of the “zero consonant” reflects its phonological properties, that is, its position in the consonant paradigm. The most suitable description of this segment might actually be “glottal glide”, rather than “glottal stop”, although it can have both continuant and non-continuant manifestations. There is reason to assume that glottal sounds, in general, belong to the least marked segments of consonant paradigms, and at least in some languages they may be assumed to have no positive (+) or marked (m) properties, except that they are segments (Janhunen 1986, 43–44).<sup>3</sup> There are clear indications that the “glottal glide” is losing its status also in standard Finnish, and due to the low markedness of this segment its deletion involves a minimal reduction of the syntagmatic and/or paradigmatic complexity of the language. Even so, it would be premature to claim that the segment has already been lost in the standard language – it has not.

The idea that Finnish has an additional “zero consonant” or “laryngeal” phoneme is not new. However, there seems to have been some reluctance to view the different positional occurrences of this phoneme as manifestations of a single paradigmatic unit. The attention in the past has often been focused on those forms of Finnish that have a phonetically prominent glottal stop (Rytkönen 1936; cf. also Itkonen 1965, 245–249), while the question has been regarded as

3. We will not go here into the issue concerning the full phonological implications of neutralization and markedness. It would, of course, be possible to analyse, for instance, geminates as sequences of a minimally marked, or archiphonemic, “glottal” consonant, that is, *x*, as the first component and a fully marked “regular” consonant as the second component, e.g. *kk = xk*. In Finnish, this interpretation would be supported by the word-boundary assimilation rules (“boundary gemination”). The issue depends on what stand is taken, in general, to archiphonemes and markedness in phonology.

<i>m</i>	<i>n</i>		<i>ng</i>
<i>p</i>	<i>t</i>		<i>k</i>
<i>f</i>	<i>s</i>	<i>sh</i>	<i>h</i>
<i>b</i>	<i>d</i>		<i>g</i>
	<i>r</i>		
	<i>l</i>		
<i>v</i>		<i>j</i>	<i>x</i>

Table 3. The complete consonant paradigm of standard Finnish.

irrelevant for the standard language. Even more often, only the morphophonological manifestations of this phoneme have been investigated, while its status in the synchronic paradigm of consonants has not been discussed at all.

In this situation, it should be stressed once more that the “zero consonant” is a phoneme irrespective of whether it is pronounced as a glottal stop (as in some forms of eastern Finnish) or only as a weak transitional glide-like phase in the flow of phonation (as in many forms of mainstream Finnish). Even if some of its behavioural patterns, especially the phenomenon of “boundary gemination”, could theoretically be described in terms of non-segmental junctural phenomena, the possibility of including the “zero consonant” as a regular member of the consonant paradigm should be considered as a serious alternative. Of course, in those forms of Finnish in which the final glottal stop has no phonetic manifestation, the “zero consonant” has been positionally lost at the surface, though it still survives as a deep phoneme. Even for these forms of the language, however, the “zero consonant” can normally be postulated at the surface in the initial and medial positions.

It may be added that, in the consonant paradigm, the “zero consonant” is not a marginal phoneme in the sense of the other “new” phonemes (*b g f sh*), for it occurs in native words and alternates with other native phonemes. However, the rules of “boundary gemination” connected with it, apply also to the actual marginal phonemes, which can be geminated at word boundaries, as in *xottaax fyrkkaa* → *xottaaf\_fyrkkaa* ‘to take (out) money’, *pelatax shakkixa* → *pelatash\_shakkixa* ‘to play chess’.

## A final note

It may be emphasized once more that the interpretations suggested in this paper should be subjected to a more elaborate dialectological and phonetic analysis. While the facts quoted in the paper are certainly valid for many individual varieties of Standard Finnish (including the personal idiolect of the author), there is a lot of variation in the details depending on factors connected with regional and social dialects as well as the influence of the written language and, increasingly, other languages. The acoustic and articulatory description of the transitional features connected with the “zero consonant” represent an interesting challenge to experimental phonetics. Also, it has to be recognized that the synchronic

systems of many dialects with regard to vowel sequences and diphthongs are rather different from the standard language, which means that the conclusions made from the standard language are not necessarily universally valid for the entire dialectal spectrum of Finnish.

## Grammatical abbreviations

1	first person	PCLE	particle
2	second person	PL	plural
CONN	connective (“genitive-accusative”)	PRON	pronoun
IMP	imperative	PRS	present tense
INESS	inessive	REL	relative
		SG	singular

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