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Term Paper

Schwa in French: a literature survey

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1. Introduction

One of the most fascinating and controversial aspects of French phonology is the behavior of the neutral vowel schwa [ə], which is often difficult to describe. Beyond the straightforward basics – that schwa cannot occur word-initially and cannot bear stress – its most perplexing characteristic is that schwa can phonetically appear in free variation with nothing in casual speech; the environments where this happens are quite diverse. The question then becomes whether this alternation is best characterized as an epenthesis or a deletion. Some examples are shown below in (1).

1. Schwa, transcribed as [ə], in free variation with nothing (examples are from Dell, 1980):
    a. [pluz] ~ [pəluz] “lawn”
    b. [plas] ~*[pəlace] “place”

Schwa also alternates with [ɛ] in some verb conjugations; examples are below in (2).

2. [ə]/[ɛ] alternations in some verbs (from Dell, 1980)
    a. [apəlje] “you (pl.) call”
    b. [apɛlʁa] “he will call”
    c. [apɛl] “call (noun)”

Most scholars consider schwa a distinct phonological entity. While all the analyses examined in this paper claim schwa is realized phonetically as one of the mid-front vowels [œ] or [ø], most posit a separate phoneme /œ/ which is not under consideration here. I have transcribed schwa as [ə] in this paper, even though theoretically speakers never actually utter it as such, to keep a clear distinction between phonemic /œ/ and schwa. (This issue is discussed further in section (4) below.)

In this paper I will examine four different approaches to the problem of schwa – as a phoneme, as a syllable-conditioned vowel, as a floating vowel, and as identical to /œ/. Two of the opinions investigated here are held by native speakers of French (Dell (1980) and Tranel (1987)); and the four investigators used similar, although not identical, data to reach their conclusions. Dell (1980) treats the schwa as a phoneme, but constrained by more rules than an ordinary phonological segment. Anderson (1982) argues for a syllabic treatment of the schwa, which offers a particularly elegant way of accounting for the vowel's behavior. Building off Anderson's syllable-based theory, Tranel (1987) works within a non-linear perspective to argue for a more radical view of schwa, characterizing it as a floating vowel. Finally, Walker (1993) claims that schwa is no longer a distinct phoneme; in his analysis, schwa has merged with the vowel /œ/ and, he argues, the two have become a single phonological entity. I will examine these approaches below in their explanations about some of the behaviors and features of schwa.

2. Underlying features of schwa

One of the first questions addressed in the literature is the exact nature of the schwa. In cases such as (1) above ("lawn" can be realized phonetically as either [pluz] or [pəluz] in casual speech) is the vowel [ə] the result of an epenthesis or a deletion? Given that the appearance of the schwa is not predictable word-internally (note the identical environments in "place" and "lawn", (1.a) and (1.b)), Dell (1980) argues convincingly that schwa is a phoneme specified in the underlying representation of a word; as such, it is subject to various complicated rules of deletion, some of which are optional (thus explaining the [pluz]~[pəluz] alternation). Dell treats schwa, however, as a normal vowel and gives it a set of underlying features [-high, -low, -round, + back], to make it a mid-front vowel. Phonetically, then, schwa appears exactly the same as the

phoneme /œ/, but Dell argues that the two behave in sufficiently different ways to consider them distinct phonologically.

Anderson (1982) agrees with Dell on many levels; in Anderson's analysis, rule-governed deletion, rather than epenthesis, explains many of the schwa/zero alternations in French. However, Anderson argues that schwa is best understood as an empty slot in the syllabic structure, rather than as a phoneme. By defining it as a syllabic nucleus without features – an empty slot – Anderson is able to differentiate schwa from the rest of the vowels in French; and it is consonant syllabification rules, rather than conventional, but complicated, rules such as Dell's, that predict the occurrence of a schwa. A late rule of "schwa spelling" eventually gives it the phonetic realization /œ/. Tranel (1987) goes even further than Anderson, claiming that schwa is a "floating vowel", a bundle of features without a representation on the "skeleton tier" where syllables are formed. Schwa is realized only on the "melody tier" and is specified merely as a non-consonantal segment. The difference between Tranel and Anderson is illustrated in (3) below.

3. Skeleton and melody tiers, from Tranel (1987)

	a. Empty Vowel (Anderson)	b. Floating Vowel (Tranel)
Skeleton:	V	
Melody:	[ ]	[-cons] (or simply ə)

Tranel argues that calling schwa an empty vowel, as Anderson does, essentially represents it just like any other vowel of French; but considering schwa a floating vowel truly distinguishes it, as it is thus the only vowel without its own position on the skeleton tier. And in Tranel's approach, there is still no need to define schwa in terms of features, since schwa is simply a non-consonantal segment, with the rest of its features filled in by context.

Walker (1993) has perhaps the most radical position of all the articles. He argues that schwa has actually merged with the vowel /œ/, and thus that it is no longer a special vowel. What used to be called the schwa is, in his mind, best treated as a segment that is in free variation with the mid-front vowels [œ] and [ø]; these three sounds, once all separate phonemes, have been restructured into a single underlying phoneme by speakers, and the behavior of this new 'mega-vowel' can be described best by grammatical rules of the sort found in Dell (1980)'s analysis.

3. Behavior of Schwa in different contexts

3.1. Schwa/zero alternations word-internally

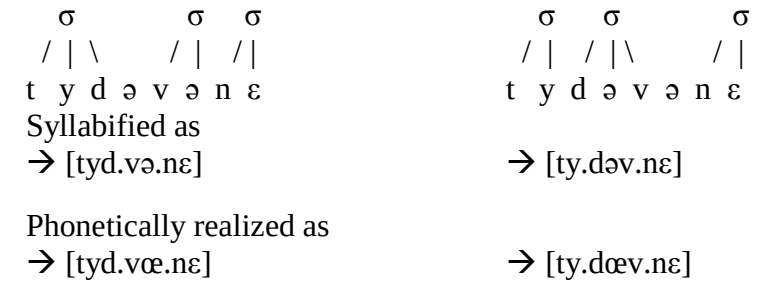
How do these different theories account for data like that shown below in (4), where, in casual speech, any of several schwas may be deleted?

4. Possible pronunciations of /tydəvənɛ/ "you (sg.) became" (from Anderson 1982)
    a. Underlying representation: /tydəvənɛ/
    b. [tydəvnɛ]
    c. [tydvənɛ]
    d. *[tydvnɛ]

Here, either of the two schwas in the verb /dəvənɛ/ may be deleted, but not both. Dell (1980) solves this problem by formulating some rather complicated, environmentally conditioned rules which rely on counting consonants and vowels to determine if the schwa may be deleted. While Dell's rules do derive the correct answer, Anderson is able to describe the same data more simply by a syllabic restatement of the more standard rules. Essentially, consonants surrounding an underlying schwa may re-syllabify with other syllables. Depending on how this is done, one of the two schwas will be left without anything around it due to resyllabification of its surrounding consonants, leaving the schwa as an "empty nucleus" of a syllable which is then deleted by rule. (And, as Anderson suggests, it is entirely reasonable to

assume a rule that deletes syllables with no specified content.) Of course, since the resyllabification would move consonants out of one schwa's syllable into the other, the non-deleted schwa would have consonants around it and be realized phonetically as [œ]. A sample derivation is below in (5.)

5. Anderson's derivations of /tydvənɛ/ and /tydəvnɛ/



Tranel's (1987) approach preserves all the benefits of Anderson's, by letting syllable structure dictate which schwas are preserved. However, for Tranel the actual realization of schwa takes place a bit later. Since, in his framework, the schwa appears on the melody tier (which is realized after all the syllabification has finished on the skeleton tier), all schwas will be realized after the syllabification has finished. They appear in the melody tier to break up consonant clusters and to preserve consonants without a syllable that would otherwise be deleted. However, Walker (1993) says that the fact that schwa and /œ/ have merged does not have any bearing on the now /œ/ ~ zero alternations. He describes when and how /œ/ can be deleted much as Dell (1980) does; but he states that the problem is complicated by morphological structure and a sort of rhythmic conditioning (which he does not describe in detail), both of which affect deletability.

3.2. Schwa word-finally

There are two main environments where we find schwas at the end of words; one is fairly concrete while the other is more abstract. Some forms representative of both environments are below in (6).

6. Schwas at the ends of words in phrases. Parentheses indicate optional pronunciation. Examples are from Dell (1980) and Walker (1993).

    a. [enɔʁm(ə)pãkart] “enormous signboard”

    b. [film(ə)ʁys] “Russian film”

    c. [uʁs(ə)bʁũ] “brown bear”

    d. [kɛl(ə)asɑʁ] “what a danger”

    e. [bavaʁ] “talkative” (masc.)

    f. [bavaʁd] “talkative” (fem.)

Up to this point, schwa’s behavior seems best explained by deletion. However, for phrases like those in (6.a-d), Tranel (1987) and Walker (1993) propose epenthesis as a valid option. Like Dell (1980), Tranel suggests that this fleeting, optional appearance of schwa is a way of breaking up consonant clusters – but unlike Dell’s approach, which considers all schwas to be underlying, both Tranel and Walker agree that quite possibly a schwa is present freely at the ends of words, and each speaker’s tolerance for consonant clusters will determine whether or not the schwa is inserted in the phonetic string.

However, Dell (1980) and Anderson (1982) suggest that for forms like (6.e,f), a more abstract representation involving schwa is in order. These two forms (masculine and feminine) of the same adjective “talkative” differ in their phonetic realizations by the pronunciation of a final [d]. While this particular case could be explained by suggesting an epenthetic [d] word-finally, nearly every French adjective undergoes a similar alternation, using different (and non-predictable) final consonants. To solve this problem, Dell (1980) suggests that French has a rule to delete word-final consonants, but that words which phonetically become realized with a word-

final obstruent have a schwa, rather than the obstruent, as the last underlying element; this schwa essentially protects word-final consonants from the deletion rule. And by adding a rule of final schwa deletion, the protective schwa is never realized phonetically. This rather abstract solution actually works quite well for explaining the final consonant alternations between masculine and feminine adjectives; simply posit a single underlying stem for each meaning (in the example above, "talkative", the UR would be simply /bavaʁd/), and then add a schwa to the stem to derive the feminine form. This rule of final schwa deletion does pose a problem for monosyllable clitics such as [ʒə] "1st p. subject pronoun" [tə] "2nd p. reflexive pronoun" [sə] "it" and a few others; these very important grammatical words obviously end in a schwa which is not deleted. Rather than suggesting that they end in two schwas, however, Dell amends his rule to exclude words with only one vowel.

Anderson (1982) agrees with Dell about the use of schwa as an underlying protective element, as well as about the treatment of monosyllables (that is, schwa is present in these monosyllables' underlying representations, but is not deleted.)

3.3. Schwa in alternation with [ɛ]

In some verb conjugations, schwa apparently alternates with the mid front unrounded vowel [ɛ].

7. Schwa alternating with [ɛ] (Walker 1993).

a.	crève	[kʁɛv]	"burst, puncture, 1& 3sg"
b.	crevons	[kʁəvɔ̃]	"burst, puncture, 1 pl"
c.	lève	[lɛv]	"raise, 1& 3 sg"
d.	levait	[ləvɛ]	"was raising, 3 sg"
e.	levions	[ləvjɔ̃]	"was raising, 1 pl"

Dell (1980) explains these sorts of alternations by using closed syllables as the conditioning environment. In this context, it is impossible to predict whether phonetic [ɛ] was underlying /ɛ/ or /ə/; but predicting when underlying /ə/ becomes phonetic [ɛ] is a much simpler task. Once again, Dell writes a rather large and somewhat complicated rule to govern this alternation. Anderson (1982) agrees with Dell on this subject: the [ə]/[ɛ] alternation is conditioned by closed syllables.

Tranel (1987), however, disagrees on two counts, preferring to treat this alternation as a lexical allomorphy. Syllable structure is, he argues, much more complex than it appears; and allomorphs provide a much simpler explanation. In addition, since schwa is a floating vowel, acknowledging this sort of alternation would fix it firmly in the "skeleton tier" of the phonology, rather than the true domain of floating vowels, the "melody tier". Walker (1993) has very little to say on this topic, beyond presenting the data listed above in (7), stating that he cannot offer a definitive analysis of the [ə]/[ɛ] alternation in his paper. This is probably due to length constraints; he would likely have something interesting to say about it if space was not an issue.

3.4. Stress and Schwa

Stress is French is usually placed on the ultimate syllable of a word. Schwa cannot carry stress; fortunately, this is only a problem if the schwa has managed to surface phonetically and appears at the end of the word. Dell (1980) allows for this when he writes his rule of stress placement; he simply adds a condition that "bumps up" the stress to the penultimate syllable if schwa would otherwise be the last vowel of a word. Of course, in monosyllabic words where the only vowel is a schwa, the schwa must receive the stress; but within the phrase, the monosyllable will receive less stress than a normal word, so ultimately the schwa surfaces with very weak stress. Anderson

(1982) does not deal with stress explicitly, but since so much of his work is based on Dell's, it seems reasonable to assume that he would agree with Dell in this area.

Tranel (1987) has a delightfully simple explanation for this problem. Since schwa is a floating vowel, it is ignored by the stress rule (which presumably only applies to content in the skeleton tier), and thus cannot be stressed. On the other hand, Walker (1993) essentially dismisses the problem of schwa and stress; since schwa is now the same thing as the vowel /œ/, and /œ/ is present in many stressed syllables, the stress restriction on schwa no longer exists (and, as schwa has been changing dramatically, the restrictions on it will probably continue to morph in the future).

4. Possible changes in the nature of schwa

Is the schwa indeed changing? Neither Anderson (1982) nor Dell (1980) discussed any possible changes in the behavior of schwa. Tranel (1987) did provide an explanation for restructuring within his framework, however, and Walker (1993) deals with this topic extensively.

For Tranel (1987), restructuring is a way to explain why some schwas shift from an optionally deletable state (as we saw in (1.a) above, with the alternations [pluz] and [pəluz]) to either an anchored state (historically, [bəlɛt] ~ [blɛt], but today [bəlɛt] ~ *[blɛt] "weasel") or a permanently deleted state (historically [plɔte] ~ [pəlɔte], but today [plɔte] ~ *[pəlɔte], "kiss" –both examples from Tranel) . He suggests that as speakers learn and restructure French, the schwas in some words become anchored in the skeleton tier and thus act as normal, permanent vowels (realized identically to phonetic [œ]), while others are lost entirely.

However, as mentioned previously, the main argument in Walker (1993) is that schwa has merged with the vowel /œ/. By drawing evidence from studies of French speakers' ability to

distinguish between an underlying [ə]/[œ] contrast in phrases, such as /ʒœnœvorjɛ̃/ "young scoundrel" and /ʒənəvorjɛ̃/ "I'm worthless", both of which are pronounced identically as [ʒœnvorjɛ̃], Walker argues that they must also be perceived identically. Whereas Tranel (1987), Anderson (1982) and Dell (1980) would posit two different underlying representations for these words, Walker argues only one actually exists for both: /ʒœnœvorjɛ̃/. Walker also points to the fact that several major dictionaries and other important analytical sources transcribe both schwa and /œ/ with a single symbol; while these sources acknowledge that there are several pronunciations possible, they explicitly claim there is no systematic difference in the use of these sounds. Thus, according to Walker, schwa and /œ/ are in free variation for speakers, and it is impossible to determine whether a lexical contrast still exists between these sounds. This lack of distinction between schwa and /œ/ in both spoken and perceived French is, according to Walker, evidence that speakers are tending towards a new, idealized vowel system in which the two vowels are phonologically identical.

5. Conclusion

The behavior of schwa in French is clearly a large and complex problem. Each analysis of schwa surveyed here has its advantages and drawbacks – and whether schwa is truly best understood as a distinct phonological entity or as an allophone of a larger phoneme is a question that time and further research will definitely clarify.

Works Cited

Anderson, Stephen (1982). The analysis of French schwa. *Language* 58, 534-573.

Dell, François (1980). Generative phonology and French phonology. Cambridge: Cambridge University Press.

Tranel, Bernard (1987). French schwa and non-linear phonology. *Linguistics* 25, 845-866.

Walker, Douglas C. (1993). Schwa and /œ / in French. *Canadian Journal of Linguistics/Revue canadienne de linguistique* 38, 43-64.