

A Diachronic Analysis of Schwa in French

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Abstract

Since the beginning of the formal study of language, linguists have struggled with the phonological problems posed by the mid-central vowel sound schwa. Schwa poses a series of challenges for linguists who study many languages, and this is particularly true for phonologists and phoneticians who specialize in French. Most of the challenges that come from analyzing the articulations of schwa in French arise from the overlap it has with mid- and open-mid-front-rounded vowels in French such as in the second vowel in the word “*atelier*” (workshop) and the second vowel in the word “*appeler*” (to call.) In this study a diachronic (historic) analysis of schwa in the French language is performed in order to more easily explain the problems that schwa poses for Franco-linguists today. First of all, the nature of schwa is described and how schwa’s behavior plays into its role in Modern French. Problems proposed by reduced schwa vowels and the phonological processes that cause these reductions in Modern French are described. Vowel reduction is a phonetic process that occurs when changes in the articulation of the vowel such as stress, sonority, and loudness cause the vowel to be “weaker.” Finally, a diachronic analysis of the historical environments of schwa from Old French to Modern French is conducted in order to attempt to explain the challenges posed by schwa in modern French. The methodology for this paper involves finding the phonetic environments in which schwa has traditionally appeared from Old French to Modern French. Changes in the environments between each time period of French are finally examined to see how those changes have influenced modern phonological processes that influence the articulation of schwa. This study has shown that the disappearance and appearance of sounds in the phonemic inventory of French has greatly impacted how schwa is articulated in Modern French. Other linguistic processes such as labialization that were realized on schwa in the past are no longer realized, but they have proven to be essential in shaping the current vowel inventory of French.

Keywords: French, Historic Linguistics, Phonology

1. Introduction

Since the beginning of formal phonetic and phonologic study, the mid-central vowel or schwa /ə/ has consistently caused problems for linguists. Although it is often characterized as a weak vowel, this is not always the case; the dynamic behavior of schwa shows much more than vowel reduction. Because of this unique, dynamic behavior, learners of many languages have problems in acquiring proper vowel systems. Using French schwa as an example, I assert that historic (diachronic) perspectives of linguistic phenomena can give us insight to the current (synchronic) phenomena that are seen in the actual world. In this paper, I will conduct a diachronic analysis of schwa in the French language in order to explain the problems that schwa poses in current French. First, I will describe what the schwa is and how it fits into phonologic theory. I will then describe the problems posed by schwa in contemporary French, and finally I will explain the diachronic changes schwa has undergone while attempting to explain the

problems in current language. A diachronic analysis of this sound is necessary in order to better understand the behavior of the schwa in Modern French.

2. Schwa In Synchronic Phonological Theory

The International Phonetic Alphabet (IPA) gives us descriptive features of all of the sounds in the known languages of the world. The descriptions of the vowel sounds are represented as seen in Figure 1:

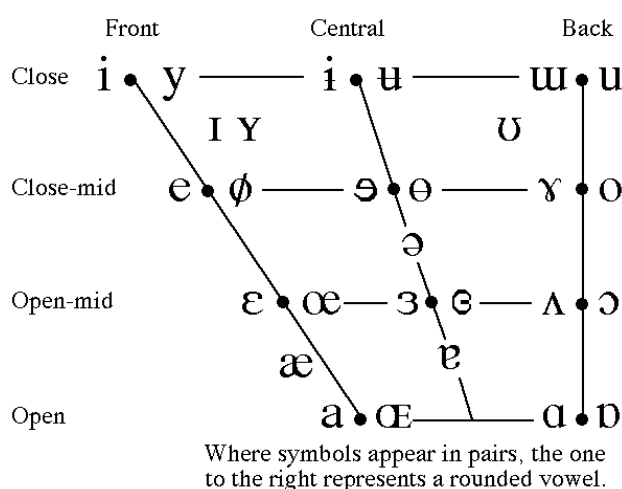


Figure 1 IPA Vowel Chart

Source: <http://www.phonetics.ucla.edu/course/chapter1/vowels.html>

The schwa is situated in the middle of this vowel space meaning its articulation is mid-central, which requires the mouth to rest in the most neutral position possible. This means that the schwa is pronounced by passing air through the oral cavity without any effort or change in the position of articulators. Because of this neutrality, the schwa has a unique behavior in many languages including English, Dutch, Hindi, and French among others. In French, this articulation is varied, however, in which schwa tends toward a more front, round articulation, differing greatly from the standard description of schwa by the IPA (Fougeron, et al. 2007). Phonologically, the schwa is able to serve three linguistic functions in the world's languages. (Van Oostendorp, 1999). The first phonological process that schwa can undergo is that of epenthesis. This means that the schwa can be inserted in an environment where it generally would not occur. In French epenthetic schwa can be seen in the environment [CC_C] between two words as in the following example from Van Oostendorp (1999):

un contact pénible → [ãkõtactəpeniblə] (A painful contact)

The first schwa is inserted to prevent [CCC], which is disallowed in French.

The second phonological process that schwa can undergo is reduction or, in more extreme cases, deletion. (Van Oostendorp, 1999) This process is the most common process that schwa can undergo in French. This can be seen in the sentence, *Je ne sais pas* (I don't know), in which two schwas could possibly be reduced or deleted. The final schwa deletion seen in this example includes a schwa that is deleted when the word *ne* (A marker of negation) is deleted.

Je ne sais pas → [ʒənəsɛpa] → [ʒənsepa] → [ʒsɛpa] (I don't know)

Deletion is commonly seen in word-final, unstressed open syllables in French:

Chèvre → /ʃɛvʁə/ → [ʃɛvʁ]

When a speaker speaks more quickly, the schwa is the first phoneme to be reduced or deleted, due to its simplistic articulation and the fact that it always occurs in unstressed syllables. The third possible articulation of schwa is the stable schwa. (Van Oostendorp, 1999). This is when the schwa is unaffected by neither epenthesis nor reduction. The stable schwa is the default pronunciation of schwa as the mid-central vowel. This can be noted in the first listed articulation in the proceeding example:

Je vois → /ʒəvwa/ (I see)

(Moisset, 1996), immediately after the majority of vowels had solidified their pronunciation; thus the word *dehors* (outside) will be pronounced as /dəʁ/. The schwa is able to precede the open mid-back rounded vowel due to a barrier created by the voiceless glottal fricative that no longer exists in French.

Schwa poses an abundance of problems to learners of French. The process of deletion seems to cause the most problems for learners. Scholars of French have noted this consistent deletion of schwa as the *e-caduc* (dropped-e). According to Fischer (1980), the *e-caduc* is the only vowel that is able to be systematically dropped in a rhythmic group (the group of words that falls into the same rhythmic pattern). Although it is known that schwa vowels have the tendency to be deleted, the constraints that lead to the reduction of schwa are very complicated and tend to be difficult for L2 learners of French to understand and observe (Walker, 1993). According to Walker (1993), schwa is disallowed in the following environments:

Table 2 Disallowed Environments of French Schwa

*##ə	Word Initial
*ə C ₀ \$	Closed Syllable
*ə V	Pre-vocalic
* V ə	Post-Vocalic
* ə [+stress]	Stressed Position

Schwa's behavior puts many constraints on it that do not affect other vowels in French. For example, the combination of /əV/ is disallowed in French except in one case: *h-aspiré*. (Van Oostendorp, 1999). The case is a unique case that arises from the historical changes in French. The voiceless glottal fricative [h] was brought into the French language by Germanic languages, but disappeared from the French language during the 16th century.

The most troublesome issue posed by schwa for learners of contemporary French is the merger that schwa is currently undergoing with |ɛ|, the archiphoneme of mid-front rounded vowels containing the phonemes /œ/ and /ø/, meaning that the three expressions, *Je ne vois* (I don't see), *Jeune voix* (Young voice), and *Genevois* (a former French province) could all have the same pronunciation of /ʒənəvwa/. (Walker, 1993). This merger arises from the articulation of the French schwa. It is traditionally more rounded and slightly more fronted than the IPA schwa (Fougeron, Gendrot & Bürki, 2007). Because of this merger, specialists of the sound system of French are currently asking if schwa can be identified as either the open-mid front rounded vowel [œ] or the close-mid front rounded vowel [ø] or if it is still, in fact, its own independent phoneme. The only difference found between schwa and |ɛ| is that schwa has a shorter duration than the vowels included in the archiphoneme (Fougeron, Gendrot & Bürki, 2007). Because of this merger, the initially understood phonologic constraints on schwa are now being changed to conform with those of |ɛ| leading to phonologic patterns that are difficult for linguists to understand and observe, meaning that the aforementioned environments from Walker (1993) are no longer valid. Despite the acoustic data discussed

by Fougeron et al., the debate on the identity of French schwa is still ongoing in which some scholars tend towards the idea proposed by Valdman (1976) in which he states that schwa “is a feature of French morphemes which determines the potential presence in the phonological output of a vowel ranging in quality between [ø] and [œ]” (Valdman, 1976: 117), a theory formalized by Jetchev (2003) in which he posits the archiphonemic representation of schwa discussed earlier. In conducting a diachronic analysis of schwa, one could better understand why the schwa is undergoing this merger in the French language.

3. Diachronic Analysis

During the evolution of Latin towards the language that would eventually develop into French, research shows that schwa has appeared and disappeared more than any other vowel (Fouché, 1969). During these different time periods, schwa served many functions that were not only phonologic but also morphologic. In Old French, for example, the schwa was used as the feminine marker for indefinite articles, [unə] representing the feminine, while [un] represented the standard masculine article (Walker, 1993). When Latin developed into old French, speakers began to use different markers for verb conjugations (Klausenburger, 1992); therefore, verbs in the first conjugation group of Latin began to include the schwa in their Old French pronunciations in certain modes and tenses. This can be seen in the present infinitive of the Latin verb *cantare* (to sing) /kantare/ that will transform into French *chanter* /ʃāte/. The first-singular present indicative of *cantare* is pronounced as /kanto/ until approximately 1100; however, this [o] will become Ø, and eventually in Middle French it will be pronounced as the schwa that will again be deleted in modern French. This change in first conjugation verbs will distinguish the new French language from Latin (Klausenburger, 1992).

Syllable position of the original Latin word has always played an important factor in the deletion and maintenance of schwa throughout the development of French, and many vowels from Latin eventually had developed into schwa in at least one point during the development of French, but this was always based on syllable position. Pretonic syllables (Syllables that occur directly before the stressed syllable of a word) containing [a] or [a:] eventually developed into schwa, as can be seen in the change *ornamēntu* → *ornement* (ornament). Unstressed word initial syllables seemed to show the most development of schwa. Both [e] and [i] in Latin in word-initial syllables developed into schwa, as can be seen in the two examples *fenestra* → *fenêtre* (window) and *dīvin* → *devin* (soothsayer) (Bourciez & Bourciez, 1967). Deletion in both of these settings might have occurred due to the fact that the schwa was probably reduced and the orthography changed to match the more widely accepted pronunciation.

In Old French, consonants also affected the realizations of schwa, more so than those of any other vowel. For example in the case of the velar fricatives /k/ and /g/ the schwa was maintained until the velar disappeared (Morin, 1979). This can be seen in the Old French *facēre* (to do) pronounced as [ˈfa-ke-re] which becomes the French *faire*, pronounced as [fɛʁ]. According to Morin (1979) the velar in these words will correspond to the following linguistic model due to the palatalization of the velar consonant:

$$/V+\text{velar}Vre/ \rightarrow /VjVre/ \rightarrow /V\text{ʁ}\text{ə}/$$

The intervocalic palatal approximant will eventually be deleted, but the word-final *e* will be realized as schwa in modern French (Morin, 1979).

Moreover, there are other consonants that will change the behavior of schwa in Old French. These cases are generally more specific than the proceeding rule. In Old French schwa was always deleted when it appeared in the environment [n]_[r] (Fouché, 1969). The singular present tense conjugations of the Old French verb *donner* (to give):

$$\begin{array}{ll} [\text{don}\text{ə}\text{ra}] & \rightarrow [\text{don}\text{ra}] \\ [\text{don}\text{ə}\text{reit}] & \rightarrow [\text{don}\text{reit}] \\ [\text{don}\text{ə}\text{roit}] & \rightarrow [\text{don}\text{roit}] \end{array}$$

This deletion is still realized today in French often in the conditional and simple future of first conjugation verbs (*donner* [to give]):

[dɔnəʁe] → [dɔnʁe]
[dɔnəʁa] → [dɔnʁa]
[dɔnəʁa] → [dɔnʁa]

The Old French liquid consonants [l] and [r] also created constraints that developed the schwa. Anytime consonant clusters ended in a liquid changed any following vowel into the schwa (Zink, 2009):

[duplus] → /dublə/ (double)
[matrem] → /mɛʁə/ (mother)
[nostrumi] → /nɔʁə/ (Our)

Because these schwa vowels often appear in word-final positions, they are deleted.

Syllable stress also played a pivotal role in the development of the schwa in French. Certain vowels could only be found in accented or unaccented syllables. Those that appeared in unaccented syllables became schwa. The Latin word *caballu* (horse) becomes the French *cheval*. The /a/ that appears in the first syllable is unaccented, thus transforming into schwa /ʃəval/. In the 6th century, the unaccented /a/ will transform into /e/ until the 11th century, when it finally stabilizes into being pronounced as /ə/ (Laborderie, 2008). Yet in an accented syllable during the 11th century the articulation of schwa is going to force the tongue to lift higher in the oral cavity (Laborderie, 2008) thus changing the pronunciation of schwa closer to the open-mid front rounded vowel [œ] which had not yet existed, and will not exist as a phoneme until the 12th century. While [œ] solidified its pronunciation, the deletion of schwa also became more common (Fouché, 1969).

Schwa's behavior became significantly more dynamic during the 12th century. During this century, word-final [a] would also develop into schwa (Perret, 2012). Apart from that which developed from [a], word-final schwa disappeared (Pierret, 1982).

During the Middle French period, schwa would begin to show new properties. Schwa reduction continues to develop to be more common (Zink, 2009). A majority of the new reductions of schwa emerged because schwa was able to be put into hiatus during this time (Laborderie, 2008). An example of the disappearance of this schwa can be seen in the evolution of *Matūru* → *Mûr* (mature). The [t] first disappears while the [a] becomes [ə] resulting in the schwa being put in hiatus with [u] which will be fronted to [y], leading to the disappearance of schwa. This disappearance became more prevalent during the 15th century because all of the vowels in hiatus that existed during this century will eventually disappear as can be seen in

Armature /armature/ → *armeure* /armœure/ → *armure* /aʁmyʁ/ (armor)

During the 15th century all of the schwas in French were articulated more labially. This labialization led to the rounding of schwa, putting its articulation in [œ] between [ø] (which had not yet existed in French) and [œ] (Laborderie, 2008). This new rounded articulation of schwa could explain the merger that schwa is currently undergoing with [œ].

Schwa still continued to show radical changes during the 17th century. During this time, schwa began to show the characteristics of the *e-caduc*. (Fischer, 1980). It began to be deleted in word final position. The two mid-front rounded vowels also stabilized their pronunciations during this century, leading to a juxtaposition that continues to cause problems for learners of French.

4. Conclusion

In sum, schwa has never maintained a consistent behavior with what it shows today. The phonological processes that have affected this dynamic vowel over the centuries have never stayed consistent, such as the deletion of schwa in [n_ʁ] and the evolution of vowels sounds that led them to be pronounced as the labialized schwa seen in French

today. Schwa has held an integral role in shaping the current phonologic system of Modern French. In looking at this brief diachronic analysis, historic evidence leads us to believe that the labialization that occurred to schwa during the 15th century has led to the merger with [œ] in Modern French.

5. Acknowledgements

The author wishes to express his gratitude to his advisors on this project Dr. Jennifer Bloomquist, Associate Professor of Linguistics and Dr. Jack P. Murphy, Assistant Professor of French for their help with this project, their tireless effort reading drafts and helping to prepare the conference presentation could not go unnoted. The author would also like to thank Dr. Cristina Martínez, Assistant Professor Spanish, for providing another set of eyes when the project advisors were too busy. Finally, thanks are in order for Dr. Jack Ryan and Dr. Maureen Forrestal from the Provost's office at Gettysburg College for helping to fund the trip to attend the conference.

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