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THE FORMATION AND THE EVOLUTION OF THE

FRENCH NASAL VOWELS:

A FUNCTIONAL-STRUCTURAL ACCOUNT

by

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The undersigned certify that they have read,
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ABSTRACT

The phonetic and phonemic processes of nasalization are described, the role of explanation in diachronic linguistics is examined from a general point of view, and an attempt is made accordingly to isolate factors instrumental in the emergence of distinctive vocalic nasality in French, through a comparison of the relevant developments in French, Portuguese, Catalan-Provençal and Gascon.

A critical review of previous studies concerning the evolution of the French nasal vowels leads to a reassessment of the linguistic evidence afforded by the data of early literary texts. The indications derived from the study of assonanced texts and of grammatical statements are analysed, and the evolution they reveal is interpreted in the framework of linguistic economy as defined by the functional-structural theory, in the light of the position taken earlier concerning explanation. It is suggested that a study of the linguistic system of a given language, together with that of the socio-cultural organization of the speech community, can help to clarify certain aspects of the phonological evolution of that language.

An appendix concerned primarily with Portuguese helps cast additional light on the problem of the reduction of nasal vowels by revealing a more general framework in which developments take place in a manner different from French, in accordance with specific pressures of the linguistic system considered.

ACKNOWLEDGEMENTS

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` PART ONE

THE FORMATION OF NASAL VOWELS

CHAPTER I

INTRODUCTORY: THE PROCESS OF NASALIZATION

1.1. *Purpose*

This dissertation is presented in two parts. The first three
chapters deal with the formation of the nasal vowels, i.e., the
changes that led to the utilization of vocalic nasality as a distinc-
tive feature. The second part treats the paradigmatic developments
that affected the nasalized vowels of the French language. This
division reflects no chronological distinction, the changes affecting
the subsystem of nasalized vowels having started long before their
phonemicization took place.

Each part consists of an historical and critical survey of
previous studies, and an attempt to provide an explanation within the
functional-structural framework. Occasional references are made to
other languages which also have nasal vowels, and data concerning the
Portuguese nasal vowels is presented in an Appendix.

In this chapter, the general aspects of the formation of nasal
vowel phonemes are examined, distinguishing between the synchronic
nasalization of vowels followed by nasal consonants, and the linguistic
evolution that leads to the utilization of vocalic nasality as a
distinctive feature.

1.2. *Nasalization as a Process of Assimilation*

There is quasi-unanimous agreement concerning the process of
nasalization itself. In Alfred Ewert's terms, "nasalization is the
assimilation of a vowel to the following nasal consonant (*m, n, n'*),
i.e. the uvula, which closes the nasal passage for all oral (non-nasal)
sounds, is allowed to open in anticipation of the following consonant,

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thus giving a nasal quality to the vowel."[1]

This view, however, has been challenged by Marguerite Durand who rejects the currently accepted opinion that nasal vowels are due to a process of assimilation of the vowel to the following nasal consonant.[2] In order to show that, in French, there is no correlation between the amount of air escaping through the nose and phonemic nasality, she studies the amount of nasal air flow in the following examples involving the vowels [ɛ] and [ɛ̃]:

a) between two non-nasal consonants:

des veaux　　　　　　　*vingt veaux*

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[1]*The French Language,* 2nd ed. (London, 1956), p. 39. See also Edouard Bouciez, *Eléments de linguistique romane,* 5th ed. rev. (Paris, 1967), p. 297; Ferdinand Brunot and Charles Bruneau, *Précis de grammaire historique de la langue française,* 3rd ed. (Paris, 1964), p. 62; Pierre Guiraud, *L'Ancien français,* 2nd ed. (Paris, 1965), pp. 43-44; Walther von Wartburg, *Evolution et structure de la langue française,* 8th ed. (Berne, 1967), p. 62.

Charles A. Ferguson, "Assumptions about Nasals: a Sample Study in Phonological Universals," *Universals of Language,* 2nd ed., ed. Joseph H. Greenberg (Cambridge, Mass., 1968), p. 55, presents a set of statements which "are generally explained in all-or-none terms, although most are probably only statistically valid; that is the probability of 'exceptions' is very low, and a language showing an exception may be regarded in some sense as abnormal or pathological." He considers that nasal vowels, "apart from borrowing and analogical formations, always result from the loss of a PNC [primary nasal consonant] . . . . One case where an NV [nasal vowel] may be of quite different origin is in Iroquoian, where one of the NV's posited for the proto-language seems, on consideration of internal reconstruction, to have derived from earlier /a/+/i/ or a sequence like /awa/" (p. 59).

There are cases of assimilation of the vowel to the preceding nasal consonant; e.g., in Portuguese, *mãe* 'mother'; see Georges Straka, "Remarques sur les voyelles nasales, leur origine et leur évolution en Français," *Revue de Linguistique Romane* 19 (1955), p. 269. Straka points out that most Portuguese and all French and Slavonic nasal vowels, however, are due to the influence of a following nasal consonant (to "anticipation" rather than "lag" assimilation) (pp. 269-270).

[2]"De la formation des voyelles nasales," *Studia Linguistica* 7 (1953), 33-53 (henceforth: "De la Formation").

b) preceded by a nasal and followed by a non-nasal consonant:

mes veaux *main gauche*

c) preceded by a non-nasal and followed by a nasal consonant:

des noms *vingt noms*

d) between two nasal consonants:

mais non *main morte*

She thus observes that only *des veaux* does not show any passage of air through the nasal cavity; in all the other cases, the same amount of air escapes through the nose. She also mentions that, in some of Chlumsky's radiographs, some oral vowels in non-nasal environments are seen to be articulated with a space of ten mm. separating the velum from the pharynx.[3] She concludes that passage of air through the nose is necessary but not sufficient for the production of nasal vowels.

In an attempt to define nasal vowels, she compares non-nasal and nasal vowels ([a] and [ã]) on an electric filter. She thus isolates for the former a wide formant[4] between 800 and 1,500 cycles/sec., and one around 3,000 cycles; and for the latter, two formants different from those of [a] and one around 7,500 cycles/sec., which she posits as a characteristic of vocalic nasality; this high formant does not exist on spectrograms of non-nasal vowels (as [a] in *le tas du coin*) nor on spectrograms of nasalized vowels (as [a] in *âne*), but does exist for

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[3]Chlumsky's observation shows only that, although articulatory phonetics describes the optimal movements of the vocal apparatus for the emission of speech sounds, the same acoustic effect can be the result of different articulations. For Chlumsky's radiographs, see J. Chlumsky, *Radiografie Francouzských samohlasek a poluaamohlasek* (Prague, 1938), in particular fig. 132 (reference given by Durand, *op. cit.*, p. 34).

[4]Corresponding to air columns in the vocal tract, formants—or

nasal vowels (as [ã] in *temps*). She further notices that nasal consonants do not show any such high formant on their spectrograms. This leads her to "contester la formation de la nasalité vocalique par assimilation dûe à une consonne nasale suivante" because "la consonne nasale . . . ne peut étendre dans le domaine de la voyelle précédente un caractère qu'elle n'a pas."[5]

Pierre Delattre contends that none of the spectrograms of nasal vowels he has examined showed such a high formant; furthermore, he has isolated a low formant (2,000 cycles/sec.) of very weak intensity, which all nasals have in common: "Les principaux attributs acoustiques de la nasalité se trouvent dans les *fréquences basses* du spectre!"[6] He adds that, were the formants characteristic of vocalic nasality superior to 3,500 cycles/sec., nasal vowels would not be perceived on the telephone; moreover, experiments he has conducted in synthetic speech have revealed that "on peut par la synthèse produire de bonnes voyelles (et consonnes) nasales sans avoir aucunement besoin d'un formant à 7.500 cycles" (p. 105). He attributes the existence of the high formant isolated by Durand to a deformation of the sound due to too high an intensity (p. 104). He also points out that it is very difficult to compare acoustically the nasality of a vowel and that of a consonant since the former has a much higher intensity and audibility than the latter (p. 105). Thus, when the spectrographic recording is set in such a way that the most intense vowels remain without deformation, the nasal formants of the consonants are so weak that only the

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resonance bands—can be isolated on spectrograms, and together, they determine the phonetic quality of the vowel.

[5]"De la formation," p. 41.

[6]"Les Attributs acoustiques de la nasalité vocalique et consonantique," *Studia Linguistica* 8 (1954), 106 (henceforth: "Les Attributs").

first one is visible. Delattre concludes that his studies do not show that nasal vowels have any acoustic characteristic which is absent from the nasal resonance of nasal consonants.

The presence of such a high formant—if it does exist—should not in itself be any indication that the nasal vowel is a "creation"[7] instead of the result of assimilation to the following nasal consonant. Nasal vowels and nasal consonants do not have the same articulation, e.g., the buccal occlusion of the nasal consonant does not exist for the nasal vowel, and as pointed out by Straka, the existence of a high formant for the nasal vowels and its absence for the nasal consonants may be due to such a difference in articulation.[8] Straka also challenges Durand's interpretation of the term "assimilation":

> L'assimilation n'est pas l'extension d'un caractère *acoustique* d'un phonème dans le domaine d'un autre, ainsi que l'auteur [Durand] semble le supposer, mais un rapprochement *articulatoire* ou l'extension d'un caractère *physiologique* d'un phonème dans la formation du phonème voisin. Peu importe que la consonne nasale possède ou ne possède pas la zone de formants aigus de 7.500 cycles. L'articulation issue d'une assimilation n'est pas identique (sauf en cas d'assimilation totale) à celle qui a produit cette assimilation, et par conséquent, il ne faut pas s'attendre à trouver nécessairement, parmi ses composants acoustiques, les mêmes formants que ceux qui caractérisent le phonème agissant.[9]

Straka then concludes:

> Bref, les faits fournis par les spectrogrammes, si intéressants qu'ils puissent être s'ils sont bien établis et interprétés, ne sont pas en mesure de contredire l'explication physiologique de la nasalisation des voyelles par l'action assimilatrice de la consonne nasale subséquente. (p. 267)

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[7]See Durand, "De la formation," p. 51.

[8]See Straka, "Remarques," p. 266; in this sense, Delattre is entirely justified when he deems most important the results obtained from synthetic speech experiments; see Delattre, "Les Attributs," p. 105.

[9]"Remarques," p. 266.

As for Durand's experiments concerning the articulatory movements associated with the production of nasal vowels, Straka argues that the method which consists of filming the movements of the lever of a Zund-Burguet dial, movements caused by the pressure of the air going through the nasal cavity, "nous permet d'affirmer dès maintenant que, pour une voyelle nasalisée dont la nasalité n'est pas perçue, la dépense d'air nasal n'atteint jamais celle qu'exige une voyelle réellement nasale."[10] He justifies his rejection of Durand's results on the grounds that she probably used an instrument not precise enough, and suggests that the amount of air measured was as much that of the nasal consonant as that of the nasal vowel *(loc. cit.)*.

1.3. *Automatic Character of the Assimilation*

In keeping with Straka, Ewert, Bourciez, etc., M.K. Pope attributes the nasalization of a vowel to its assimilation to a neighboring consonant, but goes on to underline the automatic character of that assimilation:

> It is difficult, if not impossible, in the emission of words to open and close the nose passage so rapidly that a clean cut is made between the nasal consonant and juxtaposed sounds, and *in all speech* [emphasis added] the vowel sounds preceding or following a nasal consonant tend to be incompletely nasalized, i.e. articulated with the nose passage open either at the end or at the beginning of their emission.[11]

The same view is implicit in R-M.S. Heffner's account of the loss of *n* in Latin *mensam*:

> The vowel of Latin *mensam* underwent a series of changes in its manner of articulation as this word developed into Spanish *mesa*. The order of the development of this change is probably something like this. First, the vowel of *mensam* was nasalized. Next, the nasal consonant was lost and the nasal vowel became longer, say

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[10]"Remarques," p. 271, n. 1.

[11]*From Latin to Modern French with Especial Consideration of Anglo-Norman*, 2nd ed. rev. (Manchester, 1966), p. 167.

[ɛ̃]. Then, the nasality of the vowel was diminished and ultimately lost, and finally the vowel was shortened to [ɛ] as it is in *mesa*.[12]

1.4. *The Loss of the Nasal Consonant*

This syntagmatic conditioning leading to non-distinctive nasalization of vowels in the neighborhood of nasal consonants is reflected in Sanford A. Schane's representation of the French nasal vowels: he does not grant them the status of (systematic) phonemes but sees in them only the phonetic output of an underlying (phonemic) sequence *vowel + nasal consonant*.[13] Thus *brun* is represented on the phonemic level as: |brUN|. The feminine of *brun*, *brune*, is represented as |brUNa|. The correct phonetic output for words like *brun* and *brune* is derived from their underlying representation through the application of two rules:

1) a "nasalization rule," according to which, before a nasal consonant, vowels become [+nasal] if the nasal consonant is final or followed by a consonantal segment,

2) a "nasal consonant deletion rule," which deletes nasal consonants occurring after nasalized vowels.[14]

This distinction between two synchronic rules chronologically ordered to account for nasal vowels in French corresponds to the distinction

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[12]*General Phonetics* (Madison, Wisc., 1964), p. 193. It seems that according to the phonetic rules of Modern Spanish the stressed vowel of *mesa* should be [e] and not [ɛ]. Thus Navarro Tomás, *Manual de pronunciación española*, 13th ed. (Madrid 1967), p. 239, states that [e] "aparece en sílaba libre, y en sílaba trabada por las consonantes *m*, *n*, *d*, *x*, *s*." He points out, however, that "sólo delante de las palatales *ch*, *ll*, *ñ*, *y*, la *e* española llega a alcanzar, sobre todo en sílaba fuerte, un timbre propiamente cerrado" (p. 51).

[13]See *French Phonology and Morphology* (Cambridge, Mass., 1968), pp. 45-50. In the following examples, parallel vertical lines indicate underlying (or systematic phonemic) representations.

[14]*Ibid.*, p. 48:

made by autonomous phonemic theories between two different processes:
the nasalization of vowels in front of nasal consonants—a synchronic
fact that can be described in syntagmatic terms; and the linguistic
conditions under which such nasalization becomes distinctive: the loss
of the nasal consonant—a diachronic process. Thus, Frederick H.
Jungemann considers the assimilation of a vowel to a neighboring nasal
consonant to be automatic, physiologically conditioned, and as such,
without phonological importance:

> En las lenguas donde la nasalidad vocálica no es fonológica,
> las vocales resultan a menudo nasalizadas . . . . En estos
> casos, la nasalización de vocales es un hecho, sin significación
> y por lo corriente inadvertido, de asimilación de las vocales a
> las consonantes nasales contiguas.[15]

But he adds in the same passage that the feature of nasality can become
distinctive through the loss of the nasal consonant that made the assimi-
lation possible: "La nasalidad no fonológica puede hacerse fonológica
cuando se pierden sistemáticamente las consonantes que nasalizaron a las
vocales."

M. Durand considers that vocalic nasality is due to the absence
of the nasal consonant and not to its presence.[16] What she means by
"voyelles nasales," however, needs to be clarified. She seems to be
thinking of nasal vowel *phonemes* when she draws examples from French and

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"*Rule for vowel nasalization*
Before nasal consonants:
  Vowels become [+nasal] whenever the nasal consonant is
  a. in word final position
  b. followed by a consonantal segment.
A nasal consonant is subsequently deleted if the preceding vowel has been
nasalized.

Rule for nasal consonant deletion
After nasalized vowels:
  Nasal consonants are deleted."

[15]*La Teoría del sustrato y los dialectos hispano-romances y
gascones* (Madrid, 1955), pp. 102-103.

[16]"De la formation," p. 42.

Portuguese. But she uses the term for the nasalized vowels that occurred
in Old and Middle French before inter-vocalic nasal consonants, whereas
in that case vocalic nasality did not have a phonemic status. The same
is true of her examples concerning American English, a Dutch dialect of
Belgium, Swedish, Spanish, Persian, etc.[17] This confusion is linked to
her definition of nasality: the presence of the high formant in the
spectrogram of the nasalized (or nasal) vowel. She points out that what
she calls "nasal vowels" show the high formant when the following nasal
consonant is very weak, on its way out, or when it has disappeared.
This fact seems to support rather than oppose the theory generally ac-
cepted that nasalization of a vowel is the result of its assimilation
to the following nasal consonant: the weaker the consonant, the more
marked the nasal character of the vowel. There comes a point where the
nasalized vowel before a disappearing (or at least very weak) nasal con-
sonant is different acoustically and articulatorily from the nasalized
vowel followed by a strongly articulated nasal consonant. Durand does
not consider the nasal vowels in terms of the phonetic and phonemic
dichotomy, but her description of their formation in phonetic (acoustic
and articulatory) terms parallels the description of the process given
by Jungemann since, in both cases, the instrumental factor is the weakening
and the loss of the nasal consonant.

Thus, most scholars view the formation of the phonemic nasal vowels
of French and Portuguese as the result of two processes: first, the
automatic assimilation of a vowel to a following nasal consonant; then,
the loss of the nasal consonant that made the assimilation possible.

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[17]"De la formation," p. 42.

This provides an answer to the "how" of the formation of nasal vowels; the "why" of the change—the transfer of one distinctive feature to a neighboring segment of the spoken chain—, however, may be answered only through the isolation of other factors, or characteristics of the evolving systems.

CHAPTER II

EXPLANATIONS AND DIACHRONIC LINGUISTICS

2.1. *Purpose*

It is generally acknowledged that ". . . the function of
science . . . is to establish general laws covering the behaviour of
the empirical events or objects with which the science in question
is concerned, and thereby to enable us to connect together our know-
ledge of the separate events, and to make reliable predictions of
events as yet unknown."[1] The scope of the predictions that can be
made at present concerning linguistic evolution is extremely limited.
These predictions can only be of a negative nature, e.g., it is fairly
safe to assume that some changes will not take place because they would
not operate within the constraints that have been shown to govern
language and language change.[2] If the ability to predict is the

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[1] Richard Bevan Braithwaite, *Scientific Explanation: a Study of
the Function of Theory, Probability and Law in Science* (Cambridge,
England, 1968), p. 1.

[2] Thus, in terms of William Austin's unidirectional character
of allophonic variation, we could consider the change [p] > [ž] un-
likely—at least without positing intermediate stages like [v] or [č];
see his article "Criteria for Phonetic Similarity," *Language* 33 (1957),
538-544. For examples of "laws of implication" governing the acqui-
sition and the repartition of speech sounds in the class of natural
languages, see Roman Jakobson and Morris Halle, *Fundamentals of
Language* (The Hague, 1956), pp. 41 ff.; see also Jakobson, *Child
Language, Aphasia and Phonological Universals* (The Hague, 1968),
original title: "Kindersprache, Aphasie und allgemeine Lautgesetze";
idem, "Typological Studies and their Contributions to Historical
Comparative Linguistics," *Proceedings of the Eighth International
Congress of Linguists* (Oslo, 1958), pp. 17-35. About the role of such
implicational laws in diachronic linguistics, see also Harald Weinrich,
"Lois phonétiques et lois phonologiques," *Linguistique et philologie
romanes* 3 (1965), 877-886.

Joshua Whatmough argues that it is possible to predict which
changes will affect a given language; see his article "Natural Selec-
tion in Language," *Scientific American* 186 (April 1952), 82-87; too
little is known, however, about the factors relevant to linguistic

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ultimate goal of science, it must be borne in mind that some sciences—
and in particular, the social sciences—are still in an early stage of
development; under these circumstances, their methods more than their
achievements must be the basis of their being accepted as sciences or
not. Peter Caws states that there are "three aspects of scientific
activity . . . leading to three objectives: classification which leads
to description, explanation which leads to understanding, and prediction
which leads to control" and he adds in the same passage that "there is
a sense in which all these three may be reduced to one, namely explana-
tion."[3] In this chapter, after a brief examination of the importance
various diachronic linguists grant to explanation, the main modern
approaches to linguistic evolution will be compared as to their explana-
tory power.

2.2. *Description versus Explanation in Diachronic Linguistics*

Linguists are divided as to the role explanations should play in
their discipline. In the wake of Bloomfield's pessimistic assessment:
". . . no student has succeeded in establishing a correlation between
sound-change and any antecedent phenomenon: the causes of sound-change
are unknown,"[4] many scholars consider that it would be useless to attempt
any explanation of the data, and they rest content with collecting and
classifying facts. Thus, for Winfred P. Lehmann, ". . . accounting for
changes in meaning is not the historical linguist's first concern."[5]

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evolution, and any prediction—no matter how limited in scope—is likely
to be falsified by the action of as yet unknown parameters.

[3]*The Philosophy of Science: a Systematic Account* (Princeton,
1965), pp. 91-92.

[4]*Language* (New York, 1966), p. 385.

[5]*Historical Linguistics: an Introduction* (New York *et al.*, 1966),
p. 200.

This view is not restricted to semantic change; in the same passage, the author draws a parallel with phonological change: ". . . in historical phonology, our procedure is not to explain why we say *father* rather than *pater*, but rather to relate the two . . . ." Martin Joos is even more explicit in his rejection of explanatory studies:

> . . . . we try to describe precisely; we do not try to explain. Anything in our description that sounds like explanation is simply loose talk—deliberately loose, perhaps, for the sake of persuasion by analogy—and is not to be considered part of current linguistic theory.[6]

On the other hand, André Martinet has summarized the views of those who believe that diachronic linguistics must attempt to provide explanations for the facts that constitute its input:

> Progress in evolutionary linguistics demands that we abandon the descriptivist and anti-explanatory ideal which was, in fact, that of the Neogrammarians, just as it is that of today's substance-shunning formalists, the ideal of those who prefer rigorous formulations to the patient and fragmentary elucidation of linguistic reality in all its aspects.[7]

At this point, it is necessary to state explicitly what is meant by scientific explanation: it is generally defined as "accounting for particular events by reference to general laws, together with the actual conditions under which those laws act, or accounting for laws by reference to principles still more general."[8] According to this

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[6]"Description of Language Design," *Journal of the Acoustical Society of America* 22 (1950), 701-708; quoted from the reprinted version in *Readings in Linguistics* I, ed. M. Joos, 4th ed. (Chicago, 1966), p. 349; for a contrary view, see James Maxwell Anderson, *A Structural Account of the Evolution of Intervocalic Consonant Clusters in Spanish*, unpublished Ph.D. dissertation (University of Washington, 1963); *idem*, "A Study of Syncope in Vulgar Latin," *Word* 21 (1965), 72-73. See also Alphonse Juilland, "Perspectives du structuralisme évolutif," *Word* 23 (1967), 357-358.

[7]"Phonetics and Linguistic Evolution," in *Manual of Phonetics*, ed. Bertil Malmberg (Amsterdam, 1968), p. 485.

[8]Caws, *The Philosophy of Science*, p. 91.

definition, explanations invoking external factors in a fanciful way and without any serious evidence must be rejected.[9]

Taking position against such pseudo-explanations Martinet developed his functional-structural model of phonological change, emphasizing the role of internal factors.[10] The year 1957—marked by the publication of Noam Chomsky's *Syntactic Structures* (The Hague) —saw the beginning of a revolution in linguistics; although nearly ten years went by before the new view of language presented by generative grammarians was applied to linguistic evolution, serious attempts have been made recently in that framework.[11] Even more recently, another method of studying language change has been proposed, namely Labov's socio-linguistic approach.[12] Although these three

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[9]Two examples of such studies that have been proposed for the emergence of nasal vowels in French and Portuguese will be examined in the next chapter.

[10]Martinet's main views on linguistic evolution are presented in his *Economie des changements phonétiques* (Berne, 1955). For a complete bibliography of his works, see "The Publications of André Martinet," *Word* 23 (1967), 1-11.

[11]See in particular Paul Kiparsky, "Linguistic Universals and Linguistic Change," in *Universals in Linguistic Theory*, eds. Emmon Bach and Robert T. Harms (New York et al., 1968), pp. 171-202. See also Morris Halle, "Phonology in Generative Grammar," *Word* 18 (1962), 54-72; Noam Chomsky and Morris Halle, *The Sound Pattern of English* (New York, 1968). For an introductory presentation, consult Robert D. King, *Historical Linguistics and Generative Grammar* (Englewood Cliffs, New Jersey, 1969).

[12]For a detailed exposition of these views, see Uriel Weinreich, William Labov, and Marvin I. Herzog, "Empirical Foundations for a Theory of Language Change" in *Directions for Historical Linguistics*, eds. Winfred P. Lehmann and Yakov Malkiel (Austin and London, 1968). See also Labov, "The Aims of Sociolinguistic Research," mimeographed (Columbia University, 1964); "The Study of Language in its Social Context," to appear in *Studium Generale*; "The Social Motivation of a Sound Change," *Word* 19 (1963) 273-309; "On the Mechanism of Linguistic Change," *Georgetown University Monographs on Languages and Linguistics* 18 (1965), 91-114; *The Social Stratification of English in New York City* (Washington, D.C., 1966); "Hypercorrection by the Lower Middle Class as a Factor in Linguistic Change," in *Sociolinguistics*, ed. W. Bright (The Hague, 1966), pp. 84-101.

approaches to diachronic linguistics—Martinet's, Chomsky's and Labov's
—do not encompass all the studies presented in that discipline, aimed
at explaining as well as describing, during the past four decades, it
seems that they are the main—or even the only ones—that attempt to
formulate views of language change as coherent theories or models.[13]
In the next section they will be compared as to their respective ex-
planatory power.

2.3. *Explanatory Power*

The three approaches attempt to provide scientific explanations
of the data according to the definition given above. Martinet's
"dynamic"[14] model formulates general laws in terms of the abstract para-
digmatic arrangement of the phonemes of the language; generative grammar
describes language change in terms of the system of rules constituting
the grammar of a language and distinguishes between rule-loss and rule-
addition, rule-reordering and rule-simplification.[15] In Labov's socio-
linguistic approach, general laws are formulated not only for the
pressures at work within the linguistic structure but also for those
affecting the social structure and for the relationship between linguistic
and social matrices.[16] Since Labov's innovation does not concern the

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[13]Malkiel has presented many detailed studies, but without inte-
grating the conclusions he reached for each separate case in a broad
theoretical framework. A collection of some of his articles has been
published as *Essays on Linguistic Themes* (Berkeley and Los Angeles, 1969).

[14]The term "dynamic model" is used by I. Revzin, *Models of
Language*, trans. N.F.C. Owen and A.S.C. Ross (London, 1966), p. 31.

[15]See for example King, "Push Chains and Drag Chains," *Glossa* 3
(1969), p. 6.

[16]See Weinreich *et al.*, "Empirical Foundations," pp. 185-186.

linguistic structure, his approach will be examined more thoroughly

after the functional-structural and the generative models have been

compared.

2.3.1. *The notions of symmetry and simplification.* Unlike

the early stages of generative grammar, in which—quite in keeping

with the statements of scholars like Paul M. Postal[17]—no explanations

of the data were presented, later developments show on the part of

those transformational linguists particularly interested in diachrony,

a desire to discover universal laws governing linguistic evolution.

Thus, Kiparsky has shown that there seems to be a tendency for

"feeding order" to be maximized and for "bleeding order" to be minimized

or more generally that "rules tend to shift into the order which allows

their fullest utilization in the grammar."[18] The functional-structural

theory involves the idea that paradigmatic arrangements of phonemes tend

towards symmetry, thus leading to maximal utilization of distinctive

features and minimal redundancy.[19] Were the above a complete description

of these two models, they should be rejected as making claims not

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[17]"It seems evident within the framework of sound change as grammar change that the 'causes' of sound change without language contact lie in the general tendency of human cultural products to undergo 'nonfunctional' stylistic change," *Aspects of Phonological Theory* (New York et al., 1968), p. 283.

[18]See "Linguistic Universals and Linguistic Change," pp. 196-200. "Feeding order" can be briefly defined as the one obtaining between two rules A and B, when the output of A serves as the input of B. On the other hand "bleeding order" indicates a situation in which "A removes representations to which B would otherwise apply" (p. 198).

[19]See Martinet, *Economie,* pp. 99-106. See also Eugene Dorfman, "Correlation and Core-Relation in Diachronic Romance Phonology," forthcoming in *Word.*

supported by empirical evidence.[20] There are numerous examples of non-symmetrical systems[21] and simplification in generative grammar generally follows a complication introduced by the addition of a rule.[22] Martinet's major contribution has been to explain why so many systems were not symmetrical, why the "ideal" system never seemed to be reached, by postulating a contrary pressure: the asymmetrical character of the speech apparatus. Thus, while the ideal system would be a square,[23]

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[20]What is at stake here is not the "functional" characteristic of the models, but their empirical adequacy. Thus, in his comparison of causal and teleological explanations, Braithwaite, *Scientific Explanation*, p. 334, states that ". . . irreducible teleological explanations are no less worthy of credence than ordinary causal explanations," and he adds: "It seems ridiculous to deny the title of explanation to a statement which performs both of the functions characteristic of scientific explanations—of enabling us to appreciate connexions and to predict the future" (pp. 334-335).

[21]In consideration of symmetry—particularly for consonantal subsystems—attention is restricted to the "core," which includes the phonemes participating in the main correlations (voice, occlusion, aspiration, etc.). The concept of "core" was introduced by Eugene Dorfman; see his paper: "Correlation and Core-Relation," forthcoming in *Word*; see also Martinet, *A Functional View of Language* (Oxford, 1962), p. 78, n. 1.

Thus, the core consonantal subsystem of Modern English can be represented as follows:

p	t		č	k
b	d		ǧ	g
f	θ	s	š	
v	δ	z	ž	

The core system of Classical Latin consonants was:

p	t	k	kʷ
b	d	g	gʷ
f	s		

It remained as such for a long time and did not evolve into a more symmetrical system, in Vulgar Latin; see Emilio Alarcos Llorach, *Fonología española*, 4th ed. (Madrid, 1965), p. 240 and Dorfman, "History of the French Language" (Edmonton, 1967), mimeographed, p. 77.

[22]See Halle, "Phonology in Generative Grammar," pp. 64-65; Chomsky and Halle, *The Sound Pattern of English*, p. 251.

[23]See Martinet, *Économie*, p. 104; see also Dorfman, "The Function of the Square in Linguistic Evolution," paper read at Eugene, Oregon (April, 1958).

the integration of phonemes in correlations is limited by the fact that not all articulatory combinations are favorable to the ultimate goal of language: communication. Martinet has abundantly illustrated the play of counteracting forces making it impossible for phonemic systems to reach complete stability.[24] Generative grammar on the other hand, does not explain why, before simplifying, the underlying system of rules becomes more complex, i.e., why rules are added.[25]

2.3.2. *Phonological space and simplification.* Linked to the asymmetry of the speech organs is the functional-structural concept of phonological space: thus, the margin of variation separating back vowels is smaller than that between front vowels. Dialectal studies such as those of William Moulton, or studies of changes in progress, have provided strong empirical support for the notion of phonological space.[26] The increasing evidence in favor of that notion has made it one of generative grammar's main concerns; King's recent attempt[27] to prove that generative grammar can handle the description of push-chains and drag-chains in terms of simplification must be rejected on several grounds: his analysis of a case of drag-chain involving four changes—in São Miguel

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[24]For a theoretical exposition, see *Economie*, pp. 94-152. For concrete illustrations, see the second part of the book.

[25]In a recent unpublished paper, "Natural Rules in Phonology," Schane remarks that the question of why rules get added to a grammar remains open (p. 7), and he goes on to suggest that "external" factors —physiological or psychological—can provide an explanation for the changes described by generative rules (p. 27). In any case, explanations are not to be found within linguistic theory.

[26]See Moulton, "Dialect Geography and the Concept of Phonological Space," *Word* 18 (1962), 23-33; and Labov's studies listed above, p. 15, n. 12.

[27]"Push-Chains and Drag-Chains," 3-21; see also his book *Historical Linguistics*, pp. 191-200.

Portuguese—is objectionable because it leads to the formulation of a
rule that potentially applies to impossible specifications, or produces
in certain cases an impossible output. Thus, rule (5''') is the result
of four successive changes, each introducing a new simplification in
the form of an alpha-generalization rule:[28]

$$(5''') \quad \begin{bmatrix} + \text{ back} \\ \alpha \text{ high} \\ \beta \text{ low} \\ \gamma \text{ round} \end{bmatrix} \rightarrow \begin{bmatrix} - \alpha \text{ back} \\ - \beta \text{ high} \\ - \gamma \text{ low} \\ + \quad \text{round} \end{bmatrix}$$

When α and β are both plus, the structural analysis of rule (5''') (or
its input) contains an impossible specification: [+ high, + low]. When
β and γ are both minus, the same impossible specification obtains in the
structural change of (5''') (or its output).[29] In order not to posit
rule (5'''), King assumes that each simplification leads to a restruc-
turing of the underlying system, e.g., u is not derived from an underly-
ing |u| through the application of a synchronic rule, but becomes phonemic,
and so on. This is only an assumption, however, and King adds: "This
is all speculation since I do not know of any published work on São Miguel
Portuguese which gives the kind of data needed to determine its phono-
logical rules relevant to the back vowels."[30] The point at issue, which
entails no less than the rejection of one concept, that of phonological
space, and its replacement by a new one, that of simplification within
a system of rules, is too important to be dismissed on unsupported
assumptions.

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[28]For this term and its use, see King, *Historical Linguistics*, pp.
196 ff., and "Push-Chains and Drag-Chains," pp. 10 ff.; for rule (5'''),
see *Ibid.*, p. 18.

[29]*Ibid.*, pp. 19-20.

[30]*Ibid.*, p. 20.

It must also be noted that such restructuring would include the phonemicization of $|ü|$, thus making the new phonemic system more marked than the preceding.[31]   If it is maintained that drag-chains are a special case of simplification, it would be necessary to show that the overall resulting grammar is simpler once restructuring and alpha-generalization rules are in effect.   Another argument against King's analysis is that no causal relationship can be shown to exist between the different components of the change he presents: within the functional-structural approach, the arrangement of vowel phonemes in a quadrangle, coupled with the fundamental notions of phonological space provides an explanation of the data in terms of general theoretical principles.   Assuming that the same phenomenon can be described in terms of simplification by generative grammar, there is nothing in the theory that *explains* the simplification of a rule describing the "movement" of a phoneme within the articulatory dimensions of the vocalic quadrangle.

This problem can be stated in more general terms: it may very well be possible to attribute to simplification in the underlying system of rules, the changes that Martinet attributes to a tendency toward symmetry.   But, since simplification does not occur inexorably, it is necessary to explain *why* it occurs when it does, just as Martinet—by postulating and illustrating the action of contrary factors such as the asymmetry of speech apparatus—has shown why the tendency toward symmetry is not always actualized.

The same problem faces the theory of markedness, which purports to account for "a mass of very clear universal properties of language

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[31]For a detailed exposition of the theory of markedness, see Chomsky and Halle, *The Sound Pattern of English*, chapter 9; see also Postal, *Aspects*, chapter 8.

which reveals a striking asymmetry of feature values in particular contexts,"[32] by considering the intrinsic content of features. It attempts to distinguish between "natural" elements (unmarked) and unnatural ones (marked). Among the factors that help determine which elements are more "natural" is their relative frequency among known languages. In the diachronic perspective it is expected that the evolution will be from marked to unmarked types. The fact that numerous examples of linguistic change point to the passage from a less marked to a more marked phonological system[33] does not by itself invalidate the theory: but it makes it necessary to explain why in some particular cases, at a particular time, such changes contrary to what the theory leads us to expect, do actually take place. King rightly points out that the notion of markedness, to be useful, must be applied to the whole grammar.[34] Although

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[32]Postal, *Aspects*, p. 166.

[33]Thus, King, *Historical Linguistics*, p. 190, gives as an example "the Old High German Consonant Shift [which] removed the phonetic segments *p t k* from the language, replacing them by homo-organic affricates of fricatives according to phonetic environment . . . . In markedness terms *p t k* are among the least marked consonants, fricatives like *f ʒ x* are intermediate in complexity, and the affricates *pf tʒ kx* are highly marked . . . " See also James W. Harris' presentation of the Spanish sibilants and their evolution (*Spanish Phonology*, MIT doctoral dissertation, 1967, p. 212). Harris has devoted some more space to this problem in two recent publications: "Sound Change in Spanish and the Theory of Markedness," *Language* 45 (1969), 538-552; *Spanish Phonology*, (Cambridge, Mass., 1969). The author shows how the theory of markedness and linking helps account for the difference in point of articulation between Mexican [x] and Spanish [X]. But he still does not explain what in terms of markedness remains puzzling—the velarization of [š] and the change *š* > θ presented as rules (12) and (14) respectively in *Language* 45, 548-549; and as rules (18) and (21) in *Spanish Phonology*, pp. 202-203. This problem, however, has been explained in terms of phonological space and structural economy; see Martinet, "The Unvoicing of Old Spanish Sibilants," *Romance Philology* 5 (1951-1952), 133-156; Emilio Alarcos Llorach, *Fonología española*, 4th ed. rev. (Madrid, 1965), pp. 270-278. James Maxwell Anderson, "Remarks on the Development of Spanish /θ/," *Filología Moderna* 21-22 (1965-1966), 125-129, critically reviews Alarcos' presentation of the change, within the constraints suggested by Austin (see above, p. 15, n. 2).

[34]*Historical Linguistics*, p. 193.

this suggestion seems intuitively sound, the problems it raises might make its application too impractical to be useful: it presupposes a reexamination of the data that served as a basis for the dichotomy "marked versus unmarked" since these notions have been defined only in phonetic terms.[35] Underlying these difficulties encountered by generative grammar, and its weak explanatory power in diachronic studies, is the restricted data that it arbitrarily selects as its input. A language does not exist and does not evolve in a vacuum; since it is used within a certain community, it is reasonable to expect that its evolution will not take place independently of the characteristics, or needs of that community. Labov has demonstrated that what is usually discarded as random variation, and as such attributed to performance, shows a very regular pattern of relationships when considered in the frame of the social matrix. Those social factors should not be ignored but incorporated in a theory of competence.

2.3.3. *The transition problem;*[36] *"non-linguistic" or "perform-ance" factors.* Generative grammar's formulation of change in terms of rule-addition, loss, reordering or simplification is not itself to be discarded if it is understood as what it really is: a schematized

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[35]It is clear that the points presented by Postal as relevant to the formulation of asymmetrical generalizations underlying the theory of markedness concern the *sounds* of natural languages and not units of a higher linguistic level (see *Aspects*, pp. 165 ff.). The facts of language learning and pathology for example reveal which sounds—independently of any linguistic system—are acquired first or lost later. The same is true of physiological and perceptual investigations. Although nothing is said by Postal to that effect, it seems that the relative generality of speech sounds among natural languages and their "differential predictability within particular languages" (p. 169) is also determined on the basis of broad phonetic transcriptions or of autonomous phonemic analyses.

[36]This term is used by Weinreich *et al.*, "Empirical Foundations," pp. 101-102, 153, 170-171, 184-185, to indicate "the route by which a linguistic change is proceeding to completion. . . ." (p. 153).

of the change. The suggested explanations may seem valid and correct because they satisfy the formal requirements of the theory, but they are deprived of a sound empirical basis.[38]

The same neglect of the external factors of language change seems to mark the theoretical writings of Martinet. It is true that on several occasions he has stressed the necessity of concentrating on internal factors, possibly as a reaction against unrestrained speculations concerning linguistic evolution. Thus, in a paper presented during the Ninth International Congress of Linguistics, he declares: "The linguist . . . may be excused if, in his capacity as a linguist, he declines the invitation to investigate sociological conditioning."[39] Not all his theoretical writings are so categorical however. In his Preface to the *Essai pour une histoire structurale du phonétisme français*, he points out that external factors of change are not to be rejected:

> Qu'un système phonologique ne porte pas en lui-même toutes les causes qui assureront son évolution, la chose est évidente, et jamais personne n'a prétendu le contraire . . . . D'autres causes interviennent, c'est certain. L'influence d'autres systèmes linguistiques est indéniable, et les théories classiques du substrat sont loin de lui rendre pleine justice. Personne ne niera que des changements de structure sociale puissent se refléter, plus ou moins directement, dans la phonie.[40]

This attitude is more in line with his analyses of particular changes in which he displays an acute awareness of the whole situation in its

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[38]Weinreich *et al.*, "Empirical Foundations," pp. 147-148, point out that Halle's argument purporting to negate the principle that mergers at the autonomous phonemic level are irreversible ("Phonology in Generative Grammar," 71-72) is based on his neglect of the data concerning the process of the change.

[39]"Structural Variation in Language," in *Proceedings of the IXth International Congress of Linguists*, ed. H.G. Lunt (The Hague, 1964), p. 522.

[40]Martinet, "Preface" to A. Haudricourt and A. Juilland, *Essai pour une histoire structurale du phonétisme français*, (Paris, 1949), pp. x-xi.

complexity, e.g., his study on the Spanish sibilants.[41]

Another weakness of the dynamic model concerns the fact that it does not consider the influence of higher linguistic levels on phonological change. Actually this claim is justified only to the extent that such factors are not incorporated formally in the theory as they are in generative grammar, and consequently have not been studied as intensively as purely phonological factors. It is necessary to note, however, that such factors are not rejected *a priori*, but are readily usable in the method, and Martinet has said clearly that such inter-level influences as well as external factors must be considered:

> On ne peut sans doute jamais parvenir à des systèmes complète-
> ment harmonieux, et même s'il s'en trouvait un qui semblât
> approcher la perfection structurale, il serait au service d'une
> langue qui, comme toutes les langues, servirait à exprimer des
> besoins changeants. Ces besoins, agissant à travers la syntaxe,
> le lexique, la morphologie, le rythme, l'intonation, etc.,
> s'arrangeraient en fin de compte pour détruire le bel équilibre
> phonologique. Troisièmement, les langues n'évoluent pas dans
> des tours d'ivoire. Le patois d'Hauteville par exemple, est
> parlé depuis quelques siècles par un nombre croissant de
> bilingues dont le moyen d'expression dans les échanges inter-
> régionaux et les activités intellectuelles est le français.[42]

2.3.4. *The socio-linguistic approach.* As mentioned above, Labov has demonstrated very convincingly that language must be studied in its social context. His contribution has been to show that the social matrix could be studied as systematically as the linguistic structure and that it was the task of the linguist to discover the

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[41]"The Unvoicing of Old Spanish Sibilants"; a revised version in French appears in *Economie*, pp. 297-325.

[42]*Economie*, p. 89. See also the "Preface" to Haudricourt and Juilland, *Essai*, p. xiii, where he illustrates "les inter-actions d'un plan linguistique sur un autre" and points out that "les phonologues eux-mêmes ont attiré l'attention sur l'importance du rendement fonc-tionnel des oppositions et, par conséquent, sur le fait que l'évolution phonique dépend largement de la nature des systèmes morphologique et lexical" (p. xii).

universal laws governing their relationship. By closely investigating
the transition problem, the socio-linguistic model is well adapted to
the discovery of new constraints and to a better approach to the
"actuation riddle"—"why . . . changes in a structural feature take
place in a particular language at a given time, but not in other
languages with the same feature, or in the same language at other times
. . . ."[43] Because of the nature of the data it requires, this model
is especially useful in the case of changes in progress. It is closely
related to studies of changes in the past, however, since its findings
can support or negate those of other models more concerned with past
changes and, vice-versa, the constraints on change posited by those
models can help channel the research of linguists investigating present
changes. In the present study, because of the restricted amount of
socio-cultural information available, Labov's approach cannot be used.
In the light of the arguments presented above, Martinet's dynamic model,
at present, seems better adapted than the generative model to provide
explanations in diachronic linguistics and will serve as the theoretical
framework in which to investigate the formation and the evolution of
the French nasal vowels.

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[43]This term or its equivalent, "actuation problem" is used by
Weinreich *et al.*, "Empirical Foundations," e.g., pp. 102, 112, 137,
186-187. For the definition given above, see p. 102.

FORMATION OF THE FRENCH NASAL VOWELS: THE SEARCH FOR CAUSES

3.1 *Purpose*

Three attempts at determining the causes of the formation of nasal vowels in French and Portuguese will be presented in this chapter: a physiological and historical explanation suggested by Straka, substratum hypotheses, and a functional-structural account.[1] In the latter case the evolution of French and Portuguese will be compared to that of Catalan and some Gascon dialects.

3.2 *A Physiological and Historical Explanation*

Straka, after a thorough description of the evolution of the French nasal vowels, attempts to explain the cause of nasalization as follows:

> La vraie et la seule cause de la nasalisation est, à notre avis, celle que tout le monde connaît depuis longtemps . . . . La voici. Par assimilation à la consonne nasale voisine, le voile du palais s'abaisse pendant l'articulation de la voyelle pour laquelle il devrait être relevé et fermer l'entrée des cavités nasales. Il peut être en retard sur l'articulation buccale et rester abaissé pour une voyelle précédée d'une consonne nasale (assimilation progressive) . . . . Le plus souvent, cependant, le voile s'abaisse trop tôt, par anticipation, pendant l'articulation des voyelles suivies de consonnes nasales . . . .[2]

In this context, however, the term "cause" seems inadequate.[3] The

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[1]For an outline of the problems raised by the emergence of the French nasal vowel phonemes, see L. Geschiere, "La nasalisation des voyelles françaises: problème phonétique ou phonologique?" *Neophilologus* 46 (1963), 1-23.

[2]"Remarques," p. 269.

[3]This term would be perfectly justified if "nasalization" were used to mean only "automatic assimilation of the vowel to the conson-ant" excluding "nasal phonemicization"; it is doubtful, however, that Straka would endeavour to demonstrate such a trivial fact; the opening lines of his paragraph entitled "Causes de la nasalization," indicate that he is concerned with the whole process of nasalization as it took place in French (p. 265): "Pourquoi y a-t-il des voyelles nasales en

presence of a nasal consonant and its assimilatory influence on the
preceding vowel, although in most cases[4] a necessity for the emergence
of vocalic nasality, is not sufficient to explain it.

In fact, later in his article, Straka himself turns to history
and physiology for an answer to this problem. He considers that "la
disparition des consonnes nasales implosives et finales n'est pas la
cause de la nasalisation des voyelles précédentes, mais sa conséquence."[5]
The next step in his argument is to explain what makes the vowel reach
a degree of nasality such that it causes the loss of the nasal conson-
ant. He suggests that nasalization was due to some articulatory
imprecision which he attributes in turn to man's physiological weak-
ness, explainable in his opinion by the terrible conditions of exist-
ence created by the Crusades (pp. 272-274).

It appears far from demonstrated that the so-called "manque de
précision articulatoire" mentioned in this passage is a determining
factor in the process of nasalization and not just a label for the
change of articulation (the latter considered inferior as compared with
the former which is implicitly referred to as the "good" and "precise"
articulation). Furthermore, although physiological characteristics
of the vocal apparatus are probably instrumental in directing linguistic
evolution within certain constraints, the statement that the physiologi-
cal weakness of the speech organs can induce language change is purely
speculative and has in no way been substantiated. Even if this point

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français? Pourquoi et comment sont-elles nées? D'où proviennent-elles?
A quel phénomène physiologique ou autre devons-nous les attribuer?"

[4]See above, Chapter I, p. 1, n. 1.

[5]"Remarques," p. 268.

were empirically justified, it would be necessary to carry the investigation further to consider whether all layers of society were affected by that weakening and to what degree. It would then remain to be shown what factors in the social context and the linguistic structure caused one group to serve as the model for the direction of the change. More generally, attributing the cause of a language change to historical and social factors makes necessary as systematic a study of those aspects as of the linguistic structure. Otherwise, all that such so-called explanations amount to is unsupported claims.[6]

3.3. *Substratum Influence*

Another explanation, based on the influence of the linguistic speech habits of the conquered on that of the invaders—a situation known as substratum—has been presented. Wilhelm Meyer-Lübke points out that ". . . les voyelles nasales ne se rencontrent que sur des territoires qu'ont occupés des populations celtiques . . ." and he adds: "Il est par suite admissible que, du moins dans ses commencements, les nasalisations reposent sur des fondements celtiques."[7]

W.M. Lindsay briefly remarks that "the Latin nasals in the middle of a word have passed into nasal vowels in countries under Celtic influence, viz. France and North Italy and also in Portugal . . . ."[8]

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[6]In another article, "L'Evolution phonétique du latin au français sous l'effet de l'énergie et de la faiblesse articulatoire," in *Travaux de Linguistique et Littérature* 2 (1964), 17-98, Straka expands the historical and physiological hypothesis outlined above, to the evolution of the whole language, without, however, putting forth any more evidence in support of his claims, than in his article on the nasals.

[7]*Grammaire des langues romanes* (Paris, 1890), I, 575; see also *idem, Einführung in das Studium der romanischen Sprachwissenschaft*, 2nd ed. (Heidelberg, 1909), pp. 213-214.

[8]*The Latin Language* (Oxford, 1894), p. 67.

E. Bourciez also cautiously suggests that nasalization was due to Celtic influence: "Elle [nasalization] provient peut-être, dans ses lointaines origines, d'habitudes de prononciation propres aux Celtes . . . ."[9] Antonio Couceiro Freijomil seems very skeptical about the role of Celtic influence in the shaping of the Galician dialect: "Por reminiscencias celtas tiénense, en el gallego, algunas importantes particularidades fonéticas, verbigracia, la oscuridad y vacilación de las vocales, la existencia de las vocales nasales . . . ; pero todo ello es muy poco seguro."[10]

On the other hand, for Francisco da Silveira Bueno, there is no doubt that some characteristics of Portuguese must be attributed to a Celtic substratum:

> . . . as assimilações nasais . . . são fenômenos fonéticos
> de profunda importância, pelo característico próprio que dão
> ao idioma português, . . . e que, descontadas as infalíveis
> discrepâncias de certos autores, pertencem à influência do
> substrato celta na romanização da Lusitânia.[11]

G. Dottin considers that not enough is known, however, about Celtic occupation of territories, to warrant any Celtic influence on the tongue of the Roman invaders of the Iberian Peninsula:

> S'il n'est guère de territoires romans qui n'aient été, à
> quelque moment, habités par les Celtes, les conditions de
> l'occupation par les Celtes de la péninsule ibérique nous
> sont mal connues; les Celtes ne se sont pas solidement
> établis en Italie ailleurs qu'en Cisalpine, et ils ne
> semblent guère avoir pénétré en Gaule au sud de la Garonne.[12]

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[9]*Eléments*, p. 297.

[10]*El idioma gallego* (Barcelona, 1935), pp. 39-40.

[11]*A formação histórica da lingua portuguêsa*, 2nd ed. rev. (Rio de Janeiro, 1958), p. 24.

[12]*La Langue gauloise* (Paris, 1918), p. 72.

F. Jungemann takes up the problem of the geographical location of the Celts on the Spanish Peninsula, and also questions the period at which they occupied different parts of it:

> H. d'Arbois de Jubainville, "Les Celtes en Espagne," *Rev. Celt.*, XIV (1893), 356-395, expone detalladamente las áreas y ciudades pertenecientes a numerosos pueblos celtas en diferentes momentos, según los antiguos. Los celtas, dice, antes de la mitad del siglo V a.C., conquistaron, en la mitad occidental de la Península, Asturias, Galicia, Portugal, el occidente de Andalucía y la Extremadura española; pero más tarde los pueblos subyugados se rebelaron, limitando el dominio celta únicamente al extremo Noroeste de Galicia y a la región del Guadiana en el Suroeste, mientras los celtas de la meseta central mantuvieron su posición dominante hasta la ocupación romana.[13]

Thus, Celtic occupation was maintained mainly in the center of the Peninsula, and yet nasalization has taken place in Portugal where except for the extreme north, the Celts had been driven back, while Spanish does not exhibit nasalization as a phonemic feature of its vocalic system in spite of the presence of the Celts in the center of the Peninsula until the Roman occupation.

In French, nasal vowels did not phonemicize before the sixteenth century,[14] whereas Celtic had disappeared in Gaul—except for isolated rural areas—by the beginning of the fifth century.[15] It might be argued that this long interval between a possible substratum situation and phonemicization of the French nasal vowels is due to the fact that, although the nasal consonants in implosive position did not disappear until the sixteenth century, non-phonemic nasal vowels existed before that time. There is no evidence, however, that strong nasality was a characteristic of Gallo-Roman as early as the fifth century, or even

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[13]*La teoría*, p. 37, n. 2.

[14]See Pope, *From Latin to Modern French*, p. 170.

[15]See Wartburg, *Evolution et structure*, p. 22.

before, when a bilingual situation still existed in Gaul.

Furthermore, there is no evidence that Celtic—and particularly Gaulish—ever possessed nasal or nasalized vowels. Meyer-Lübke's argument is based on Old Irish words like *set* "road" that must have gone through an intermediate stage *sēt* from the proto-Celtic *sent.[16] Gaulish, however, does not represent an intermediate stage between proto-Celtic and Old Irish. Henry Lewis and Holger Pedersen indicate the presence of nasal vowels in Irish, Welsh and Breton:

> Lenited Celt. *m* remained in OW., OBr. and OIr. (wr. *m*); it was a loose *m* or nasalized *v*. It is still a nasalized *v* or *w* in Scotland; in Ireland (where *v* or *w* depends on palatalization) the nasalization is transferred to a neighboring vowel or lost. In certain circumstances lenited *m* has disappeared with transfer of nasalization to the preceding vowel . . . . Br. has *v* medially sometimes non-syll. *o*, medial len. *m* has transferred its nasalization to the preceding vowel . . . .[17]

Breton, however, is generally thought to have been imported by Brittonic speakers fleeing the Saxon invaders in the fifth century, after Gaulish had disappeared under the push of romanization. This view has been challenged and it appears that Gaulish may not have been completely extinct when the Brittonic speakers landed in what they called "Small Britain."[18] In such conditions, it might be difficult to distinguish in today's Breton the features typical of Gaulish and those of Brittonic. Dottin indicates that Indo-European *m* and *n* remained unchanged in

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[16]*Einführung*, p. 214.

[17]*A Concise Comparative Celtic Grammar*, 2nd ed. (Göttingen, 1961), pp. 53-54. See also K.H. Jackson, "The Phonology of the Breton dialect of Plougrescant," *Etudes Celtiques* 9 (1961), 339: "Non contingent nasality is found where there is now no nasal consonant in contact with the vowel, though usually there once was . . . . This nasality is phonemic . . . so *pa riñ* 'when I shall do' [paˡri], versus *pa ri* 'when thou wilt do' [pa'ri]."

[18]For both views, see respectively Leon Fleuriot, *Le Vieux breton: Eléments d'une grammaire* (Paris, 1964), pp. 9-10; and Francois Falc'hun, *Histoire de la langue bretonne d'après la géographie linguistique* (Paris 1963), I, 29-30.

Gaulish. He thinks that the group *ns* must have been simplified to *ss* but does not suggest that the preceding vowel was nasalized.[19]

Thus, there is no evidence that vocalic nasality existed as a phonemic feature in Gaulish. Nevertheless, arguments against are as inconclusive as arguments for the substratum hypothesis concerning the influence of Celtic tongues on Vulgar Latin in the formation of nasal vowels in French and Portuguese. Such a hypothesis is therefore of little value, at least within the present state of knowledge concerning the Celts and their language.

Ernst Gamillscheg attributes nasalization in Portuguese, Galician, Gascon and Basque to a Cantabrian superstratum.[20] He argues that a Visigothic king, Leovigildo, had defeated the Cantabrians and that to make it impossible for them to rebel, he deported some of them to Galicia around 581; he suggests that a lag (or progressive) nasalization typical of their linguistic habits is responsible for the nasal vowels in Portuguese and Gascon. In his critical review of Gamillscheg's hypothesis, Jungemann points out that nasalization in Portuguese and Gascon is far from being restricted to a phenomenon of lag assimilation, and that nothing is known about the idiom of the Cantabrians.[21]

All too often, the term "substratum" is used—as in the cases examined above—to indicate the cause of the changes affecting a particular language. It is clear, however, that this term only denotes a

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[19]*La Langue gauloise,* pp. 99-100. For a similar view, see R.A. Fowkes, "The Phonology of Gaulish," *Language* 16 (1940), 285-299, *passim.*

[20]*Romanen und Basken* (Wiesbaden, 1950), pp. 23-25.

[21]For a detailed criticism of Gamillscheg's views, see *La teoría,* pp. 121-123.

particular situation, a social and psychological context which channels the changes in specific directions. Thus, phonic interference in a sub-stratum situation can be explained through a contrastive analysis of the two phonemic systems in contact. But such an analysis only reveals the expected changes due to interference, as pointed out by Weinreich:

> . . . not every conjecture of favorable structural conditions results in permanent grammatical interference of the type one might predict. Clearly, fewer phenomena of interference are incorporated in the language as a code than occur in the speech of bilinguals. There is a selection of phenomena, and a complex resistance to interference. The conventional evidence does not enable us to analyze the components of such resistance—purely structural considerations (incompatibility of new forms with existing ones), psychological reasons (e.g. unwillingness to adopt for ordinary usage material transferred in affective speech), and socio-cultural factors (favorable or unfavorable prestige associations of the transferred or reproduced forms, etc.).[22]

Therefore, only a thorough study of the two linguistic structures in contact, and of the social context can support or weaken a substratum hypothesis in a given situation.

3.4. *A Functional-Structural Account: The Loss of Nasal Consonants as a Structural Change*

In his study of nasalization in Gallaeco-Portuguese and Gascon, Jungemann demonstrates that there is no evidence for any substratum influence; on the other hand, he shows that the loss of intervocalic *n* is explained in terms of a more general change operating at that time in those dialects, namely the reduction of geminates, that affected most Western Romance tongues. Thus, in the case of [-nn-], the latter

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[22]*Languages in Contact* (The Hague, 1967), p. 44; although the passage quoted concerns grammatical interference, the same applies to phonic interference; see *ibid.*, pp. 26-27.

simplified to [-n-] but only after Latin [-n-] had disappeared.[23] The

weakening and loss of [-m] and [-n] (-N) can also be described as a

particular case of a general process, the loss of implosive syllable

final consonants.[24]

In the case of French, intervocalic nasal consonants are

retained and Modern French nasal vowels result from the loss of syllable

and word final nasal consonants.[25] Thus Pope states that the efface-

ment of final consonants was complete in Middle French and Wartburg

summarizes the long series of reductions affecting syllable-final

consonants as follows:

> Le vieux français avait fait disparaître la plupart des
> consonnes qui fermaient les syllabes, comme p. ex. les
> labiales et les vélaires (septem > set). La dernière de
> ces consonnes avait été s. Son affaiblissement avait
> commencé au 11e s., surtout devant les consonnes sonores,
> comp. angl. dine contre feast. A la fin du 13e s. la chute
> est accomplie . . . .[26]

The effacement of syllable-final nasal consonants was complete in French

by the middle of the sixteenth century;[27] the loss of [-n-], and of [-m]

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[23]See Martinet, Economie, pp. 275-276.

[24]See Jungemann, La teoría, p. 125.

[25]Some recent studies have pointed out the analogous behavior of
consonants in syllable and morpheme final position, as exemplified here
by -N (N = any nasal consonant). For Modern Spanish, see Sol Saporta
and Donald Olsen, "Classification of Intervocalic Clusters," Language
34 (1958), 261-266; for the period between Vulgar Latin and Modern
Spanish, see Anderson, A Structural Account, passim; for Georgian, see
Hans Vogt, "Phoneme Classes and Phoneme Classifications," Word 10 (1954),
28-34.

[26]See From Latin to Modern French, p. 221; and Evolution et
structure, p. 123.

[27]See Pope, From Latin to Modern French. p. 170; see also Nyrop,
Grammaire historique de la langue française, I, 313 ff.

and [-n] in Portuguese dates back to the eleventh and twelfth centuries respectively.[28]

3.4.1. *Loss of nasal consonants without emergence of nasal vowel phonemes.* The effacement of a nasal consonant does not necessarily entail the formation of a phonemic nasal vowel. In Catalan and Provençal, -*N* has been lost in a certain number of words; those words, however, have no nasal vowels. The same is true of some Gascon dialects in which *n* has been lost in final or intervocalic position or in both, according to the dialects. Latin words like *mensa* and *pensare* in which the nasal consonant dropped early have survived as French *peser* and Spanish *pesar*, with no nasal vowel.[29] Charles Hall Grandgent believes that nasalization did result from the effacement of the nasal consonant, but that it later weakened and disappeared: "It is altogether likely that the *n* fell through nasalization of the vowel: *consul cõnsul cõsul cosul.* If so, all trace of the nasality disappeared and the close quality of the vowel remained."[30] This assumption is supported by Durand's observations concerning the loss (or weakening) of nasal consonants in several unrelated languages. She mentions the case of various idioms and in particular that of Modern Spanish, in which the effacement of a nasal consonant in final position is accompanied by a strong nasality of the preceding vowel (e.g., in words like *terminaron* [termi'narõ], as opposed

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[28]See Jungemann, *La teoría*, p. 115; Nobiling, "Die Nasalvokale im Portugiesischen," *Die Neueren Sprachen* 11 (1903-1904), 149 and 146 respectively; see also Edwin B. Williams, *From Latin to Portuguese*, 2nd ed. (Philadelphia, 1962), p. 70.

[29]The forms *pensare* and *penser* which also occur in Mod. F. and Mod. Sp. are learned forms, i.e., words which did not develop according to the phonetic laws of the language, but were directly borrowed from Latin.

[30]*An Introduction to Vulgar Latin*, p. 74; see also Väänänen, *Introduction au latin vulgaire*, 2nd ed. (Paris, 1967) p. 69; and Heffner, *General Phonetics*, p. 193, for an expression of the same view.

to words like *melón* [me'lon] where in stressed final syllables, the nasal consonant is strongly articulated while no nasality characterizes the preceding vowel).[31]

Thus, in keeping with Jungemann's and Pope's statement that vowels are automatically nasalized by a neighboring nasal consonant,[32] Durand's empirical observations show that when the nasal consonant weakens and disappears, the preceding vowel is nasalized. The loss of nasality or its retention, once the nasal consonant has completely disappeared, is therefore a phonemic and not a phonetic problem. A comparison between the linguistic structures of different dialects exhibiting different developments may reveal factors that help us understand the various evolutions.

3.4.2. *Nasalization and loss of intervocalic nasal consonants: Porguguese versus Gascon.* In Peninsular Portuguese, syllable final nasal consonants have dropped, giving rise to nasal vowels.[33] Moreover the simplification of geminates that affected the Western Romance languages has led [-n-] to drop before [-nn-] became [-n-];[34] some vowels preceding the lost [-n-] developed as nasal phonemes and some did not. Traditional studies of this problem present a syntagmatic

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[31]See Durand, "De la formation," p. 45. Navarro Tomás, *Manual de pronunciación española,* p. 39, remarks: "A veces la consonante nasal final de sílaba influye sobre la vocal precedente, nasalizándola en más o menos parte; pero dicha consonante, aunque en muchos casos resulte relajada, pocas veces llega a perder, como en francés, su propia articulación." In the examples given above, the apostrophe introduces the stressed syllable.

[32]See above, Chapter 1, pp. 7 and 9, nn. 11 and 15.

[33]Nasal consonants are still actualized phonetically in clusters in which they are followed by an occlusive, e.g., *infante* [ĩfãnti]. The symbol [ã] is used for nasal *a* and for non-nasal *a* in unstressed position; see the Appendix.

[34]See above, n. 23.

description in the form of a list of environments in which nasality was
retained or lost. Thus Williams, *From Latin to Portuguese*, distinguishes
the following cases:

> If both vowels were like vowels and the first was tonic, the
> second final, the nasal resonance remained and the vowels con-
> tracted; *bonum* > *bõo . . . > bom; lanam > lãa > lã; tĕnes
> > tẽes > tens.* (p.70)

> If the first vowel was tonic in any of the pairs *a-o, o-e,*
> and *a-e,* the nasal resonance remained and these combinations
> later became nasal diphthongs: *germănum > irmão; manum > mão;
> lectiōnes > licões; pōnes > pões; canes > cães.* (p. 71)

> If the first vowel was tonic *i* and the second vowel *a* or *o,* a
> palatalized nasal developed between them and the nasal resonance
> disappeared: *gallīnam > gallia > galinha; vicinam > vizia > vizinha;
> vinum > vio > vinho. (loc. cit.)*

> If the first vowel was pretonic and the second vowel was tonic
> *i* in hiatus with a following *a* or *o,* the nasal resonance spread to
> all three vowels. Later a palatalized nasal developed between
> the last two vowels in the regular way: *litaniam > lidaia >
> ladainha; venibam > venia > veia > viia > viinha > vinha.*

> A palatalized nasal developed with the accent reversed, that
> is, between *i* (or *e,* which in hiatus became *i*) and a following
> tonic *a* or *u: dīvīnāre > adivinhar. . . .* (p. 72)

> If the first vowel was pretonic and the second vowel was
> followed by a dental, a consonantal *n* sometimes developed be-
> tween the second vowel and the dental, the nasal resonance re-
> maining on the second vowel: **anēthŭlum > endro; *cinĭtia > cĕiza
> > cinza . . . . (p. 73)*

> If a final contracted nasal vowel, a nasal diphthong, or a
> consonantal nasal of some kind did not develop, the nasal reson-
> ance disappeared in the course of the fifteenth century; *arēnam
> > arĕa > area > areia; bonam > bõa > boa; corōnam > corõa >
> corõa . . . . (loc. cit.)*[35]

As a result of these syntagmatic constraints the loss of [-n-] in

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[35]See also José Joaquin Nunes, *Compêndio de grammática histórica
portuguesa,* 6th ed. (Lisboa, 1960), pp. 110-114. Joseph H.D. Allen, Jr.,
"Two Old Portuguese Versions of the Life of Saint Alexis," *Illinois
Studies in Language and Literature* 37 (1953-1954), 9, suggests that for
the cases in which nasal resonance disappeared after the loss of [-n-],
it had begun to do so by the last quarter of the fourteenth century.

Portuguese led to the formation of nasal vowels in final position. As pointed out above (see p. 37), it seems to have been followed within a short period by the loss of [-m] and [-n]. Jungemann suggests a relationship between those two changes:

> (2) Hubo entonces dos tipos de estructura silábica con nasalidad vocálica: sílabas libres con vocales nasalizadas y sílabas con vocales nasalizadas trabadas por *m, n* brevemente articuladas. (3) Por abandono completo de estas consonantes, el segundo tipo silábico fué asimilado al primero; así el segundo tipo de estructura silábica quedó eliminado y el primero fué reforzado y más totalmente integrado en el sistema.[36]

Jungemann may not be entirely justified in attributing the loss of [-m] and [-n] to the pressure exerted by nasal vowels in open syllables, since the evolution of Portuguese is characterized by the loss of Latin final consonants in general, as he himself points out;[37] furthermore it will be shown below that some Gascon dialects exhibit the loss of [-n-] without the loss of [-n] or [-m]. But with these reservations concerning the direction of causality in this particular change, Jungemann's proposal must be examined in detail; he points out two consequences of the loss of [-n]: the status of nasal vowels resulting from the loss of [-n-] became "reforzado" and "más totalmente integrado en el sistema." It seems that the term "reforzado" indicates the greater frequency of nasal vowels; Jungemann considers that the nasal vowels of Portuguese became more integrated in the system, once the type of syllables in which they were found was reduced to one; this raises the question of another type of syntagmatic structural integration which also needs to be considered.

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[36]*La teoría,* pp. 128-129.

[37]*Ibid.,* p. 125.

Nasal vowels resulting from the loss of [-n] are considerably reduced in number, according to the neighboring sounds and their position with respect to stress; such a reduction, once it has operated, leaves them fairly rare and poorly integrated in the pattern of distribution, i.e. they do not occur in the main positions within morphemes—initial, medial and final—but only in final position (see above). Nasal vowels resulting from the loss of -ℕ on the other hand, occur in those three positions as in the words *infante* [ĩfãnti], *avançar* [ạvãnsar] and *fim* [fĩ].

    Jungemann points out that in Gascon, "las palabras con pérdida de *n* final y nasalidad en la vocal precedente se encuentran aproxima- damente en las mismas áreas que las vocales nasalizadas por pérdida de *n* intervocálica; *m, n* finales de sílaba permanecen en otras partes" (p. 114). Taking this into consideration, he concludes:

> El desarollo de vocales nasalizadas por la pérdida de consonantes nasales en final de sílaba, puesto que parece ocurrir en la misma área aproximadamente que la conservación de la nasalidad vocálica producida por pérdida de *n* intervocálica, puede explicar la con- servación de la nasalidad de estas vocales últimas, como en portugués. Por el contrario, el mantenimiento de las consonantes nasales en final de sílaba puede explicar la denasalización de las vocales que estuvieron primero en contacto con la *n* intervocálica perdida, en el resto de Gascuña." (p. 130).

Most Gascon dialects seem to bear out this suggestion. Thus, the dia- lects spoken around Parentis-en-Born, Landes (represented on the *Atlas Linguistique de la France, the Atlas Linguistique de la Gascogne* and in Fritz Fleischer's *Studien sur Sprachgeographie der Gascogne* by point 672),[38] Sarbazan, Landes (point 665), and Hostens, Gironde

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[38]For the data concerning the following section, see Fleischer, *Studien zur Sprachgeographie der Gascogne* (Halle, 1913); Jules Gilliéron et Edmond Edmont, *Atlas linguistique de la France* (Paris, 1902); J. Séguy, *Atlas linguistique et ethnographique de la Gascogne* (Paris, 1954).

(point 653) show the following pronunciations:

1) After the loss of [-n-]:

    672:    [prü!wɛj] (Fr. *prunier*);   ['lüwə] (*lune*)

    665:    ['prüəs] (*prunes*)   [lü]   (*lune*)

    653:    ['lüwə] (*lune*)

2) In final position, the same points show:

    672:    [krĩn] (*crin*); [bĩn] (*vin*); [plõen] (*plein*).

    665:    [du'mãn] (*demain*); [pu'rĩn] (*poulain*).

    653:    [ku'zĩn] (*cousin*); [mu'lĩn] (*moulin*).[39]

For the word corresponding to Fr. *pinson* 'finch', those three points share the canonical form:[40] pṼNsṼN. Then, for the dialects spoken around points 653, 665, 672, neither the word final nor the syllable final nasal consonants have been lost. The nasality of the vowels previously in contact with [-n-] has disappeared.

Jean Séguy thus describes the nasal vowels that are heard in some parts of Béarn:

> Il ne s'agit pas des voyelles suivies d'une nasale implosive
> (*kãnta, brãnko, grãn*) communes à tout le gascon, et où la
> nasalité n'est qu'un trait neutralisé, mais bien des véritables
> phonèmes en position finale ou en hiatus: *pã* 'pain', *bĩ* 'vin',
> *arẽa* 'dos', *lüo* 'lune', etc. . . . . Il s'agit d'une nasalité
> d'une intensité extraordinaire: c'est un véritable nasillement
> . . . qui rappelle le *twang* américain. Historiquement, ces
> voyelles nasillées résultent de la désocclusion d'une consonne
> nasale subséquente: dans le reste de la Gascogne, cette consonne
> persiste en finale (dentale en Lomagne, vélaire ailleurs), ou
> bien la nasalité que sa désocclusion avait produite a complète-
> ment disparu (*pã, arẽo*, etc.).[41]

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[39]See Fleischer, *Studien*, pp. 65, 70, 71; Séguy, *ALEG*, I, map 169; Gilliéron, ALF, map 788. The symbol [Ṽ] as used in the *ALF* indicates weak nasalization.

[40]Since the evolution of the vowels is different for the various dialects, only the canonical form, that is, the consonantal shape is transcribed in full.

[41]"Essai de cartographie phonologique appliquée à l'*Atlas*

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In that region there are some examples of nasal vowels resulting from the loss of [-n-], in pretonic syllables as in:

[gră'ɛ]   (Fr. *grenier* 'hay-loft'; point 691 N).

[gri'ăuḷoe]   (Fr. *grenouille* 'frog'; 685).

These are rare examples, however, and they seem to be restricted to a very small area; most other points pronounce instead: [gra!jɛ] and ['grauḷoe]; besides, the same points 691 N and 685 show the pronunciations:

[mu'ljɛ];[muli'nɛj] in Gironde, [muli'nɛ] in the Eastern part of Gascogne (Fr. *meunier* 'miller'),

['pɛjro] (Fr. *panier* 'basket').

In these words the nasal vowels in pretonic position, resulting from the loss of [-n-], have lost their nasality. As a rule, these nasal vowels occur in stressed syllables:

['lüoe]   (Fr. *lune* 'moon'),

[lă]   (Fr. *laine* 'wool').

Here, as in Portuguese, nasal vowels resulting from the loss of [-n-] have been reduced in number, the retention of their nasality being conditioned by syntagmatic factors. Other nasal vowels result from the loss of -N, as in:

[hŭ]   (Fr. *fontaine* 'fountain'),

[pĩ'să]   (Fr. *pinson* 'finch').

linguistique de la Gascogne," Linguistique et philologie romanes, III (Paris, 1965), p. 1035. The area concerned includes the following villages in the Basses-Pyrénées: Artix (685), Calvidos (685 NE), Billère (685 SE), Navarrenx (685 SO), Arthez (685 NO), Sauveterre-de-Béarn (691), Labastide-Clairence (691 O), Salies-de-Béarn (691 N), Sainte Suzanne (691 NE). This list is not meant to be exhaustive nor does it exclude minor variations among the various villages. The examples presented below are taken from Séguy, *Atlas linguistique de la Gascogne.* The symbol [ꭓ] indicates very strong nasalization ("nasillement").

The fact that these nasal vowels are now tending to lose their nasal
character does not negate the description presented above; they have
remained nasal long after the loss of the nasal consonants and their
present weakening must reflect new factors—among which socio-cultural
factors seem to be prominent.[42]

Point 696 (and neighboring points) of the *ALF* seems, however,
to provide a counterexample. Intervocalic *n* has, as a rule, disappeared,
e.g.,

['mia]   (Fr. *il mène* 'he leads'); [béo]   (Fr. *veine* 'vain, luck')

[la]   (Fr. *laine* 'wool'),

and there are many examples of loss of -*N*, e.g.,

[bu]   (Fr. *bon* 'good'); [la'pi]   (Fr. *lapin* 'rabbit')

[he]   (Fr. *foin* 'hay').[43]

Neither the vowels previously in contact with [-n-] nor those pre-
viously in contact with -*N* are any longer nasalized. -*N*, however, is
only lost in word final position but not in syllable final position
for medial syllables:

[pĩn'sa]   (Fr. *pinson* 'finch').[44]

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[42]Thus in the same passage, Séguy points out that, in 1947,
another investigator—Lalanne—noted for Salies-de-Béarn (point 691 N
of the *ALEG*): ". . . les jeunes atténuent ou suppriment le nasille-
ment orthézien senti comme ridicule." J. Bouzet, "L'enquête en Béarn,"
Le Français Moderne, 16 (1948), 43, attributes certain changes, and
among them the phenomenon of denasalization in certain parts of Béarn,
to the prestige of the "béarnais" spoken by the bourgeoisie of Pau.
He also mentions another factor: "la crainte du ridicule" which leads
people of Pontac to abandon their *o*'s (<*a+N*) as in *mo* (Fr. *main* 'hand')
po (Fr. *pain* 'bread'), *koma* (Fr. *jambe* 'leg')—a pronunciation quali-
fied as "vilaine et grossière" and for which their neighbors laugh at
them—and replace it with the more widely accepted *a* in the same
words (pp. 44-45).

[43]See Fleischer, *Studien*, pp. 62, 69; Séguy, *ALEG*, maps 895, 330.
[44]*Ibid.*, map 30.

Furthermore, there are many cases of retention of -*N* in word final position—the preceding vowel being more or less nasalized, e.g.,

[sãŋ] (Fr. *sang* 'blood')

[are'õũn] (Fr. *rond* 'round')

[hũŋ] (Fr. *fontaine* 'fountain').[45]

The sporadic character of the resulting nasal vowels may have militated against the retention of their nasality.

Another factor may have contributed to the loss of vocalic nasality: whereas in Portuguese [-n-] and -*N* were both lost within a short period of time[46] and therefore gave rise at the same period to a large number of nasal vowels in different positions, the same does not seem to be true of Gascon (or at least of most areas of Gascon). The fact that [-n-] has disappeared on most of the Gascon territory,[47] while [-n] is retained on most of the same territory—except for some parts of Hautes-Pyrénées (as point 696) and Basses-Pyrénées[48] (see above, p. 43, the Bearnais dialects)—taken together with the sporadic loss of -*N*, seems to indicate that the loss of [-n-] occurred much earlier than that of -*n*. This is the opinion of Ronjat: "L'amuissement aq. [aquitain] de

[45]See Fleischer, *Studien*, Séguy, *ALEG*, maps 865, 1087, 929.

[46]See above, p. 37.

[47]See Jules Ronjat, *Grammaire istorique des parlers provençaux modernes* (Montpellier, 1930-1941), II, p. 140. Ronjat explains the particularities of his spelling as follows (I, p. 175): "Pour le *français*, je pratique deux simplifications recommandées par M. Grammont (RLR 1906, p. 537-545): *i* au lieu de *y* ne valant pas deux *i* (*noyer* mais *sistème*); suppression de *h* en tête de syllabe (*omme*, *caoter*, *aüri*) et après *r* et *t* (*Rône*, *arres*, *téâtre*), *f* au lieu de *ph* (*fonème*), *ch* conservé uniquement pour [š] (*arche*, mais *arkéologie*)."

[48]*Ibid.*, II, 287.

n intervocalique, ex. *graè√-èi* < grānāriu . . . remonte au aut moyen âge

. . . . L'amuïssement de rom. [roman] -*n* en b. [béarnais] . . . ne s'est

accompli que plus tard."[49]

Gerhard Rohlfs points out that the loss of [-n-] "se manifeste

déjà dans les chartes les plus anciennes, p. e. dans le Cartulaire de

Bigorre du XIe et XIIe siècles . . . ."[50] There is some indication that

-*N* was lost in some words as early as 1257: *capera* (Fr. *chapelain*

'chaplain') occurs in a chart of Maubourget (Hautes-Pyrénées) at that

date.[51] But forms in -*n* are still numerous in texts of the thirteenth,

fourteenth and fifteenth centuries.[52] In 1580, in a letter to his sub-

jects, Henri IV refers to himself as "lo Rey, Seignor souviran" (Fr.

le Roi, Seigneur souverain).[53] On the other hand, if [-n-] is often

reintroduced, Achille Luchaire points out that ". . . la syncope [of

[-n-]] apparait beaucoup plus souvent dans les textes anterieurs au XVIe

siècle."[54]

These phenomena may be summarized briefly:

1) vocalic nasality is retained in those dialects which—along

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[49]See Ronjat, *Grammaire istorique*, II, 140.

[50]*Le Gascon: études de philologie pyrénéenne* (Halle-Saale, 1935),
p. 104.

[51]*Grammaire istorique*, II, 288.

[52]The following examples are taken from V. Lespy, *Grammaire
bearnaise*, 2nd ed. (Paris, 1880): *ung an* 'a year'; *un cavaler* 'a horse-
man' ("Preambule des Fors de Bearn," thirteenth century, p. 108);
Arnauton, Mondran, Gassion (proper names), etc. ("Engagement de ne plus
jouer," 1337, p. 111); *desarman lo* 'they disarmed him', *en un riu* 'in a
river' ("Recits d'histoire sainte," fourteenth century, p. 112); *en* 'in',
emformation 'information', *Menauton, Ban* (proper names) besides *baroos*
'barons', *bees* (Fr. *biens* 'belongings'), pp. 114-115.

[53]*Ibid.*, p. 124.

[54]*Etude sur les idiomes pyrénéennes* (Paris, 1879), p. 210.

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with the loss of [-n-]—exhibit the loss of *n* in word and syllable final position, e.g., Portuguese and the Gascon dialect of Labastide-Clairence.

2) in the dialects of the Landes (illustrated here with points 653, 665 and 672 of the *ALF*), -*N* remains and the nasality of the vowels previously in contact with [-n-] has been lost.

3) point 696 shows the loss of [-n-] and irregular loss of -*N*; but vocalic nasality has disappeared. -*N* is maintained in implosive syllable final position; a certain amount of time elapsing between the loss of [-n-] and that of -*N* may have contributed to the elimination of vocalic nasality resulting from the first and former change, before such nasality could be reinforced by new nasal vowels emerging through the loss of -*N*.

3.4.3. *Nasalization and the loss of final nasal consonants: French versus Catalan-Provençal.* Provençal and Catalan, which are closely related and which—at least at their beginnings—evolved along similar paths,[55] both exhibit the loss of *n* in absolute final position without nasalization of the preceding vowel. Whereas all syllable and word final nasal consonants in French disappeared in the sixteenth century, Catalan shows numerous retentions:

- in some plural forms coming from Latin paroxytones: *mans, bins,* etc.

- in some indefinites used proclitically: *un, egun.*

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[55]W. D. Elcock, *The Romance Languages* (London, 1960), p. 438.

- in some monosyllabics also used procliticalIy:

ben as in *ben alt*; but *bé* as in *esta bé*.

- in some verbal forms:

pon < ponit.[56]

In the same position, [-m] is retained; moreover, in syllable
final position, *m* and *n* are both maintained. A tendency of the implo-
sive *-n* to drop in the clusters *nf* and *ns* was opposed by a learned
pressure and *f* is rare as a reflex of *nf.*[57] That such an external
pressure could win out is understandable since it worked along the
lines of the general evolution of the language: apart from *ns* and *nf*,
clusters whose first members were nasals were maintained (and more
generally, other consonant clusters were maintained as well).[58] Thus,
whereas in French, a change affecting the whole structure of the
language took place, in Catalan, only a small part of the linguistic
system was affected, and that with quite a few exceptions: the loss
of *n* (but not *m*) was limited to word final position and even there was
not general. If structural integration in a linguistic pattern can be

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[56]Antonio Badía Margarit, *Gramática histórica catalana*
(Barcelona, 1951), p. 225.

[57]*Ibid.*, pp. 193-194. A learned pressure can have different
forms: it can be due to a group appointed to codify the language or
to the influence of a social class. In some cases, such a pressure
only checks evolution in progress, but it may also reintroduce sounds
lost through normal evolution, taking as a model either the conserva-
tive speech of a given group or the texts of the "ancestor" language
—as is often the case with Latin for the Romance languages (the latter
phenomenon is usually designated by the term "regression"). For
a short presentation of learned influences on the evolution of the
French language, see Pierre Fouché, "L'Evolution phonétique du français
du XVIe siècle à nos jours," *Le Français Moderne* 2 (1934), 218, 221-
225, 227-228.

[58]Thus *saltat > salta, capra > cabra, musca > mosca*, etc., see
Badía Margarit, *Gramática histórica*, pp. 89 ff.

defined as occurrence in the main positions within morphemes—initial,
medial, final—it appears that vocalic nasality found itself poorly
integrated (only in morpheme final position) in Catalan after the loss
of [-n]. In French, on the contrary, the loss of nasal consonants in
morpheme and syllable final position resulted in nasalized vowels in
initial, medial and final position, e.g., *enfantement* [ãfãtəmã].

3.4.4. *Summary and conclusion.* The fact that in the Landes
[-n-] is lost while -*N* remains, and there are no nasal vowels resulting
from the loss of [-n-], must be contrasted with the situation in
Béarnais and that in Portuguese. In the latter two, at the point in
the evolution when nasality has been eliminated in particular syntagmatic
environments, the remaining nasal vowels that result from the loss of
[-n-] are not the only ones in the language; there are also nasal vowels
resulting from the loss of -*N*; and in Portuguese and Béarnais, vocalic
nasality is retained. This suggests that two factors may have been
instrumental in the retention (or the loss) of vocalic nasality after the
loss of [-n-]: the frequency and the structural integration of nasal
vowels in the pattern of distribution—conditions which were realized in
Portuguese and Béarnais through the loss of -*N*, but which never existed
in the Landes or around point 696.

The case of French and Catalan-Provençal gives additional support
to this hypothesis: in Catalan, nasalized vowels are formed only in
word final position and lose their nasality, whereas in French they occur
in initial, medial and final position and are at the same time much more
numerous than in Catalan. The case of French further suggests that the
requirements of structural integration and frequency posited above for
the retention of vocalic nasality are satisfied by the loss of -*N* alone.

The preceding observations—that the retention of vocalic nasality among those languages affected by the loss of nasal consonants goes along with the regularity of the change, and consequently the frequency of the lexical items it includes—must be exploited with caution in any attempt at explaining the change considered. Because of the scarcity of data concerning the period of the change, and in particular the total lack of information on the socio-cultural make-up of the populations, establishing a causal relationship between the facts presented above, is a step that can be taken only as long as certain empirical and theoretical requirements are satisfied.

From an empirical point of view, in spite of the scarcity of information available, it seems reasonable to assume that in view of the six cases examined (French, Catalan-Provençal, Portuguese and three Gascon dialects), it is unlikely that the correspondence between retention of vocalic nasality (or its non-retention) and regularity of the loss of -N (or its non-regularity) is merely accidental. This, of course, does not make these structural considerations the sole factor of the differences between the various developments; in particular socio-cultural conditions may have been important in making the loss of -N a regular or an irregular change, but this does not affect the conclusions reached as to the pressures at work within the linguistic system.

From a methodological point of view, it is important that the hypothesis formulated in a specific case be consistent with the theory as a whole. There is a striking similarity between the observations that have been presented and some general principles outlined by Martinet:

> Outre l'influence stabilisante exercée par le rendement fonc-
> tionnal élevé d'oppositions corrélatives, nous devons sans
> doute tenir compte d'un autre facteur de stabilité resultant

de la simple fréquence des articulations caractéristiques de
séries et d'ordres. Il est vraisemblable qu'on apprendra plus
tôt et qu'on retiendra mieux les traits linguistiques qui
reviennent fréquemment dans la chaîne que ceux qui apparaissent
moins souvent.[59]

Viewed as a change affecting the whole linguistic system, the
retention of vocalic nasality after the loss of *N* constitutes only a
replacement, when the change is regular and complete. If, on the other
hand, it affects only part of the lexicon in a random fashion, it amounts
to the addition of a new feature with diminution of its frequency as
compared with the old feature being replaced. Thus, if -*N* disappears
in *X* words but is retained in *Y* words, the new system has:

$$X \text{ words in } /\tilde{V}/$$

$$Y \text{ words in } /VN/$$

whereas the frequency of -*N* was previously ($X+Y$). At this point, this
uneconomical situation may be resolved in two ways: either the devel-
opment is completely interrupted, -*N* remains in the lexical items that
have not been affected by the change, and vocalic nasality is lost in
the others; or the change may continue and result in the situation which
prevailed in French and Portuguese, with *N* completely lost and vocalic
nasality retained.

These structural considerations, as pointed out above, do not by
themselves solve the problem of why the change should be interrupted in
the first place. One given change may be hindered by another development
as the result of concomitant pressures; the completion of change *B* in-
stead of the interrupted change *A* may be due to structural pressures that
developed while *A* was in progress; or one change may be favored over the

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[59]*Economie*, pp. 78-79.

other by socio-cultural conditions. For the sake of argument the

preceding example will be re-examined, taking into account some of these

factors. Let us suppose that the development involving the loss of -N

is interrupted, through a learned reaction, or because of some other

factor (structural or not). The resulting situation is the new system:

$$/\tilde{V}/$$

$$/VN/.$$

If no further development takes place, that is, if the impeding

factor prevails, the final outcome will probably be the loss of vocalic

nasality and possibly the restoration of -N's in lexical items in which

they had been recently lost.[60] If on the other hand, in spite of the

interruption, the new feature is adopted by, and associated with, a

group which enjoys social prestige or acquires it during that period,

it may become the norm and the interrupted development may resume.[61]

These changes may introduce developments leading to the evolution of

new systems.

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[60]This, particularly if the impeding factor is socio-cultural,
e.g., a learned movement of codification of the language, either
systematically by a given body whose function it is to do so, or more
spontaneously as a collective reaction by a conservative social class.

[61]These alternatives are purely hypothetical and are not
presented as a description of the events that led to the different
outcomes illustrated by French, Portuguese and some Gascon dialects
on the one hand, and Catalan and some areas of Gascon on the other.
They are not devoid of all relation to fact, however: socio-cultural
factors are at present at work to eliminate vocalic nasality in
Béarnais and there is no reason to believe that similar pressures
could not have operated in the past in other areas.

PART TWO

THE EVOLUTION OF THE FRENCH NASAL VOWELS

CHAPTER IV

THE EVOLUTION OF THE FRENCH NASAL VOWELS: PREVIOUS STUDIES

4.1. *Purpose*

The aim of this chapter is to present the problem of the evolution of the nasal vowels within the general history of the French language, from Vulgar Latin to Modern French. Previous studies will be reviewed and the assumptions underlying the types of explanations put forth in those studies will be tested against the synchronic descriptions of the nasal vowel subsystems of several languages, including Portuguese. Finally, the approach to be used in this study will be presented as a hypothesis formulated on the basis of documentary evidence and of the process of nasalization described in Chapter I.

4.2. *The Problem*

In Modern French, there are four nasal vowels /ɛ̃/, /œ̃/, /õ/ and /ã/ as in *main* /mɛ̃/, *Meun* /mœ̃/, *mon* /mõ/ and *(il) ment* /mã/. The following chart shows the stressed[1] vowels of VL and their evolution into Mod.F. when they were followed by a nasal consonant. This chart reveals an important reduction of the number of vowels as they became nasalized. The mergers that led to that reduction were achieved through lowering ([ɛ,e] + N > [ã], [i] + N > [ɛ̃]; [ü] + N > [œ̃])[2] or raising ([a] + N > [ɛ̃]; [au] + N > [õ]). The various types of changes that led to the

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[1]Diphthongization does not occur in unstressed syllables and in that position, nasalized vowels develop as in checked stressed syllables.

[2]The palatalization of *u*:[u] > [ü] is not restricted to its position before a nasal consonant and for that reason is not included here.

present nasal vocalic subsystem will constitute the material to be explained in following chapters. Meanwhile, it is necessary to review the main studies that have attempted to provide explanations for the evolution outlined below.

	Vulgar Latin		*Modern French*

Checked syll.	Free

				grand	'tall'
[a] *grande*	[a] *manu*	/ã/	vent	'wind'
			fendre	'to split'
[ɛ] *ventu*	[ɛ] *bene*		main	'hand'
			bien	'well'
		/ẽ/	plein	'full'
			vin	'wine'
[e] *fendere*	[e] *plenu*		cinq	'five'
[i] *cinque*	[i] *vinu*			

[ɔ] *ponte*	[ɔ] *bonu*		pont	'bridge'
			bon	'good'
		/õ/	onde	'water'
[o] *onda*	[o] *donu*		don	'gift'
			oncle	'uncle'
			Châlons	
[au] *aunk(u)lu*	[au] *Catalaunis*			

[u] *hum(e)le*	[u] *unu*	/œ̃/	humble	'humble'
			un	'one, a'
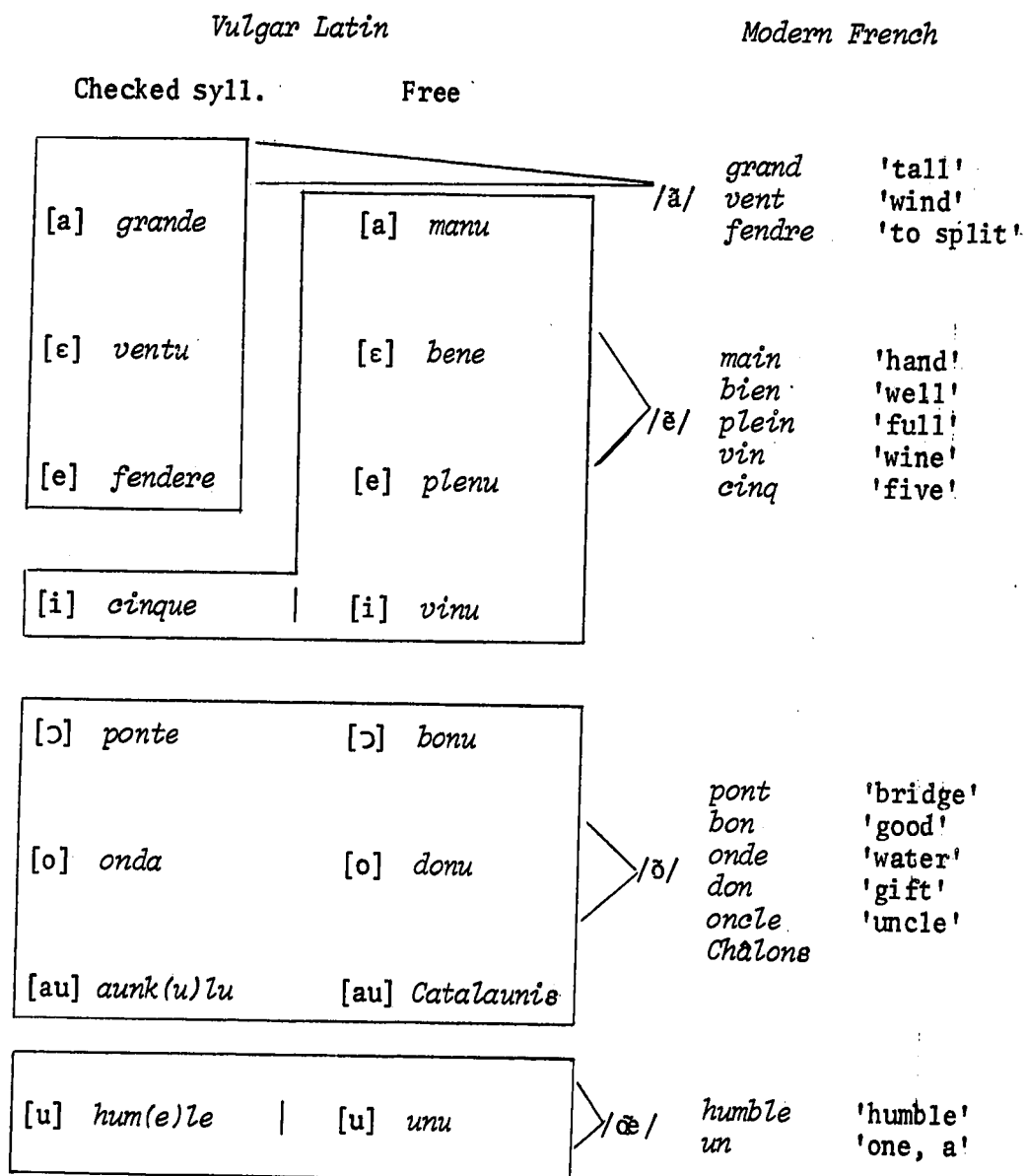
4.3. *Previous Studies*

Jaques [sic] Peletier du Mans, a sixteenth century grammarian, seems to have been the first one to suggest an explanation for some of the changes that affected the French nasal vowels. In his attempt to

codify spelling, he rejected the transcription of [ã] as *e* in words like
temps, enfant, and himself wrote them as *tans, anfans.* He felt it

necessary to give an historical account of the change lat. *en* > Fr. [ã].

According to him, the priests and schoolmasters who enjoyed the esteem

and respect of their fellow citizens said "omnam hominan veniantam in

hunc mundum" (instead of "omnem hominem venientem in hunc mundum") and

because of their prestige, that pronunciation was adopted by the rest

of the people:

> E tandis qu¢ j¢ suis ici, j¢ dire la reson pourquoe nous
> prononcons autr¢mant, *scianc¢* an Franco¢s, qu¢ *scientia*
> n¢ s¢ prononc¢ an Latin. Les Métr¢s d'Ecol¢ du tans passe,
> diso¢t *omnam hominam veniantam in hunc mundum:* Duquel vic¢,
> notr¢ Franc¢ a pein¢ s¢ pourra j'am̧es guer¢s bien purger:
> vù m̧ém̧es qu¢ ceus qui ont eté erudiz, c¢ sambl¢, an bons
> lieus, sont imbùz d¢ cet¢ odeur. E par c¢ qu¢ les pr¢tr¢s
> auo¢t tout l¢ credit l¢ tans passe (qu'on ap¢lo¢t l¢ bon
> tans) e qu'il n'i auo¢t guer¢s qu'eus qui sut qu¢ c'eto¢t
> qu¢ d¢ Latin (comme la barbari¢ e puis la literatur¢ r¢n¢t.
> par vicissitud¢ an tous pais du monde) e qu¢ tous les jeun¢s
> anfans tant de vil¢ qu¢ d¢ vilag¢, passo¢t par leurs meins:
> Dieu sèt commant iz eto¢t instruiz. E c¢ pandant, ces
> sauans montreurs, qui eto¢t estim̧èz comme dieus, an matier¢
> de scianc¢ (car d¢ la vi¢, ¢l¢ eto¢t, c¢ croej¢, bien bonn¢)
> donno¢t form¢ a notr¢ Langu¢: d¢ sort¢ qu'aupr¢s du
> vulguer¢, e m̧ém̧es aupr¢s des homm¢s d¢ moyen esprit, comm¢
> il ¢t a croere, iz parlo¢t plus souuant leur Latin, qu'autr¢
> langage: pour s¢ f¢r¢ tousjours estimer comm¢ borgn¢s an
> t¢rr¢ d'aueugl¢s . . . . E an oyant prononcer aus plus
> habil¢s *sciantia* par *a:* iz n'uss¢t pù panser, e quand bien
> iz l'uss¢t pansè, ancor¢s n'uss¢t iz ose dir¢ qu¢ tel¢s g'ans
> si homm¢s d¢ bien uss¢t pù falhir. Parquoe le vulguere aprint
> a dir¢ *scianc¢, conscianc¢, dilig'anc¢,* par *a.*[3]

Peletier did not give any evidence for such an origin, however, nor did

he attempt to explain why the priests and school masters started pro-

nouncing *en* as *an.*

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[3]*Dialogue de l'Ortografe e Prononciacion Françoese,* ed. Lambert
C. Porter (Genève, 1966), pp. 120-121; originally published in 1555.
Peletier uses an approximate phonetic spelling exemplified in the pas-
sage quoted, e.g., *e* has the value [e] while mute *e* is represented by
the symbol "¢".

More recent studies have been presented, that describe the different changes under the general term of lowering, and explain that lowering in terms of the phonetic characteristics of the nasal vowels and the physical properties of the speech apparatus.

4.3.1. *A physiological explanation.* In her analysis of the conditions of nasalization in French, Pope considers it of great importance that "*low* vowels nasalise more readily than high ones because it is not quite easy to combine the lowering of the soft palate that is required to open the nose passage with the raising of the back or front of the tongue."[4] Straka shares Pope's view and stresses the universality of the phenomenon:

> La différence d'aperture entre les voyelles nasales et
> orales reflète une loi phonétique générale, importante
> pour l'appréciation des modifications des voyelles nasales
> dans l'histoire du français. Une voyelle nasale est
> toujours plus ouverte que la voyelle orale correspondante,
> et dès qu'une voyelle se nasalise, elle tend aussitôt à
> s'ouvrir.[5]

It is also in terms of "ease of articulation" that Edouard and Jean Bourciez explain the evolution of the French nasal vowels, [ã], [ɛ̃], [œ̃], [õ], "voyelles qui se nasalisent plus facilement que les autres étant donné le rôle essentiel que jouent dans la nasalité les muscles abaisseurs."[6] Within the important literature produced by structural linguists, only short studies have touched on the problem of the French nasal vowels and they too accept the idea of the physiological requirement formulated in the preceding quotations. Thus Haudricourt remarks

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[4]*From Latin to Modern French*, p. 168.

[5]"Remarques," p. 248.

[6]*Phonétique française: étude historique* (Paris, 1967), p. 11.

that ". . . les voyelles nasales de grande aperture sont plus faciles à distinguer que les fermées . . . ."[7] Martinet also notes that ". . . plus l'ouverture de la bouche est grande, plus il y passe d'air, de sorte que, selon toute vraisemblance, les voyelles nasales ouvertes seront plus faciles à distinguer que les nasales fermées."[8]

Thus, among the scholars who have dealt with the evolution of the French nasal vowels, those who have attempted to provide an explanation apparently accept as basic to their argument a physiological principle according to which nasal vowels tend to open. This needs to be reexamined in the light of physical and perceptual studies concerning the nasalization of vowels, and of the evidence provided by languages other than French.

4.3.2. *Synthetic speech studies.* The views presented above are in contradiction with the results yielded by recent studies on nasalized vowels. Assuming that ". . . nasality in speech sounds is produced most characteristically by coupling the nose and the naso-pharynx to the vocal tract," Arthur S. House and Kenneth N. Stevens have conducted experiments in which they combined an electrical analog of the nasal structures with an electrical analog of the vocal tract.[9] They also used the acoustic outputs of various analog configurations as stimuli in absolute-judgement and paired-comparison listening tests. The results of these objective perceptual studies are consistent with the results of the physical experiments. The latter yield information concerning

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[7]"En/an en français," *Word* 3 (1947), 43.

[8]*Economie*, p. 86. See also "Les Voyelles nasales du français," *La Linguistique* 1, fasc. 2 (1965), 122.

[9]"Analog studies of the Nasalization of Vowels," *Journal of Speech and Hearing Disorders* 21 (1956), 218.

the degree of nasal coupling necessary to nasalize various vocalic articulations:

> Small amounts of nasal coupling produce marked changes in the spectra of the vowels /i u/ that in turn serve as cues for the identification of nasality; a much greater degree of coupling is needed to produce comparable changes in the spectrum of /ɑ/ and thereby to achieve a comparable level of nasality. (p. 228)

In the absolute-judgement test, ". . . the responses indicate that a small degree of coupling changes a vowel like /u/ into a nasal sound, while almost three times as much coupling is needed to nasalize /ɑ/ (loc. cit.). The paired-comparison tests yield the same results:

> . . . as the average area of coupling increases, the 'more nasal' responses to /i/ and /u/ start sooner and increase faster than do such responses to /ɛ/ and /ɔ/, and the nasal responses to /ɑ/ are the last to be manifested. (pp. 229-230)

Thus, the objective perceptual studies and the physical experiments conducted by House and Stevens point to an "inverse relation" between: a) the degree of modification of the acoustic spectrum by nasal resonance, b) the degree of audibility—and therefore identification—of nasality, "and the height of the vowel in a traditional vowel triangle . . ." (p. 223).

4.3.3. *Counterevidence in other languages.* The Portuguese nasal vowel subsystem does not reflect the universal tendency to opening usually postulated to explain the evolution of the French nasal vowels. The Portuguese nasal vowel subsystem can be represented as follows:[10]

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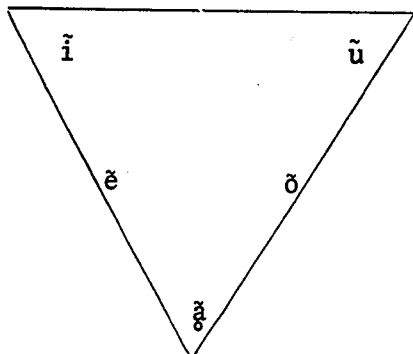
[10]See Jungemann, *La teoría,* p. 105.

as in *fim* [fĩ], *um* [ũ], *pensa* [pẽsḁ], *honra* [õrḁ], and *lã* [lḁ]. /ẽ/ and /õ/ are always closed and /ḁ/, the reflex of Vulgar Latin /a/ followed by a nasal consonant, is more closed than the Portuguese oral vowel—the reflex of Vulgar Latin /a/—and of a degree of aperture approximately similar to that of the oral vowels /ɛ/ and /ɔ/.[11] Thus, the evolution of the nasal vowels in Portuguese shows no lowering but a raising process which applies to all the vowels, except to those that were already high, /i/ and /u/.

In his study of vocalic nasality, N.S. Trubetzkoy gives several examples of nasal vocalic subsystems. Out of the six he represents through the use of diagrams, (Burmese, the Scottish dialect of Barra Island, Northern Albanian, French, the Central Chinese dialect of Siang-Tang, and the dialect of Marchfeld), only the French nasal vocalic triangle does not include high nasal vowels.[12] This is of course no indication of the evolution followed by those nasal vowel subsystems, but if there actually existed a tendency for nasals to open, we would expect a majority of languages to exhibit nasal vocalic subsystems without high nasal sounds. On the contrary, the reverse seems to be true. To the examples cited, we can add the Assiniboine language which has five oral and three nasal vowels.[13]

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[11]For a more detailed description of the Portuguese nasal vowels, see the Appendix.

[12]*Principles of Phonology*, transl. Christiane A.M. Baltaxe (Berkeley and Los Angeles, 1968), pp. 118-121. See also M.A. Isatchenko, "A propos de Voyelles nasales," *B.S.L.P.* 38 (1937), 267-279.

[13]See N.B. Levin, *The Assiniboine Language, International Journal of American Linguistics*, publ. 32, Indiana University Research Center in Anthropology, Folklore and Linguistics (Bloomington and The Hague, 1964), pp. 3 and 5-6. Levin's nasal symbols are subscripts (ꬿ).

```
i ————————— u        ĩ ————————— ũ
 \    .    /           \         /
  \ e   ŏ /             \       /
   \     /               \     /
    \   /                 \   /
     \ /                   \ /
      a                     ã
```
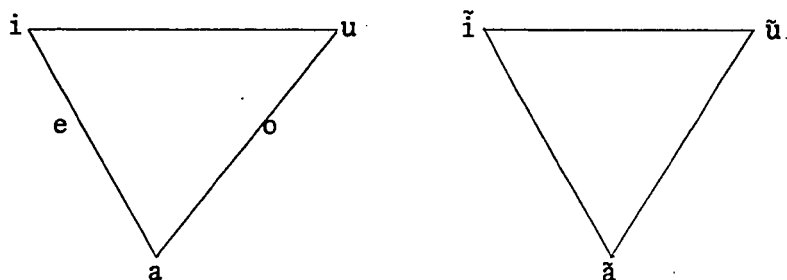
In a paper read at the forty-fourth annual meeting of the
Linguistic Society of America (December 29-31, 1969) in San Francisco,
California, Larry M. Hyman represented the vowel system of Nupe as
follows:[14]

```
        i ——— ĩ   ũ ——— u
         \             /
          \ e       o /
           \         /
            \   ~   /
             \  ə  /
              \   /
               a
```
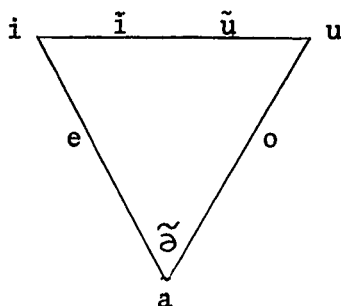
George Lote points out that high nasal vowels occur in some
patois:

> Quant aux patois, il en est qui, indiscutablement, possèdent
> de pareils sons: l'abbé Rousselot a recueilli l'*ü* nasal dans
> le Quercy et en Franche-Comté, l'*u* nasal en Provence, dans
> le Var, l'*i* nasal enfin dans la Charente, en Ille-et-Vilaine
> et en Franche-Comté . . . .[15]

All Gascon dialects also have high nasalized vowels; it was pointed out
in Chapter III that in some parts of Béarn, they are real nasal vowels,
i.e. not followed by a nasal consonant, as in [bĩ] 'wine', [bũ] 'good',
[ũ] 'one'. Similarly, most nasal vowels of Canadian French—in
particular /ẽ/ and /õ/—are much more closed than their Standard French
counterparts.[16]

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[14]This is the representation given by Hyman in his handout; it
concerns the "surface" vowel system.

[15]"La Nasalisation des voyelles françaises," *Annales de la
Faculté des Lettres d'Aix* 23 (1940-1943), 145-170.

[16]See Jean-Denis Gendron, *Tendances phonétiques du français
parlé au Canada* (Paris and Québec, 1966), pp. 98-101.

4.3.4. *The Modern French nasal vowel subsystem.* It seems that

the inventory of the Modern French nasal vowels is partly responsible

for the formulation of the physiological principle of opening (hence-

forth referred to as "opening hypothesis"). Thus, in Straka's article,

this formulation follows his statement that "la différence la plus

importante entre les deux séries vocaliques réside cependant dans

l'aperture: les voyelles nasales sont sensiblement plus ouvertes que

les voyelles de la série orale" (247). This synchronic description,

however, is itself an oversimplification of the facts. Delattre has

described the French nasal vowels by comparing them to the oral vowels

in the following diagram:[17]
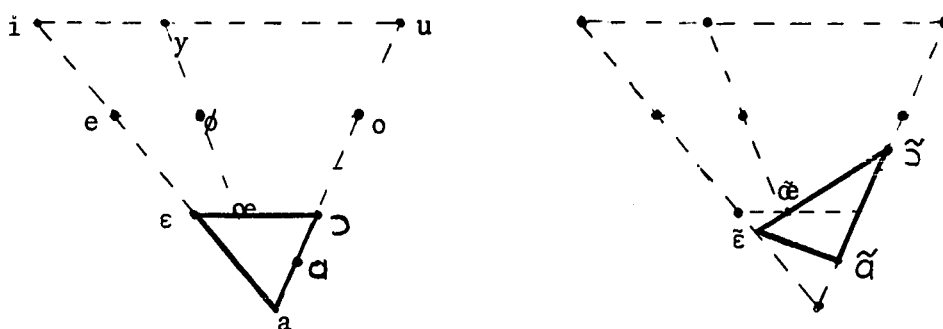
and he adds: "L'articulation buccale de |ɔ̃| est entre celles de |ɔ|

et de |o|, un peu plus près de |o|. Le symbole |õ| correspondrait

mieux à la réalité physiologique, mais l'Association Phonétique Inter-

nationale a choisi le symbole |ɔ̃| parce que la dénasalisation se fait en

o ouvert et non en *o* fermé: *mon bon ami* |mɔ̃bɔ̃nami|."[18] The chart of

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[17]*Principes de phonétique française,* 2nd ed. (Middlebury, Vermont, 1951), p. 23.

[18]*Loc. cit.* The same view is expressed by Arthur Lloyd James, *Historical Introduction to French Phonetics* (London, 1968), p. 118: "There exist in the French language of to-day four nasalized vowel phonemes, i.e. ɛ̃, ɑ̃, ɔ̃, œ̃. ɛ̃ and ɔ̃ do not, however, correspond in tongue position with the oral vowels ɛ, ɔ . ɛ̃ is usually more open than ɛ, and ɔ̃ is usually more closed than ɔ . . . ."

p. 55 shows that it is also an oversimplification to describe the evolu-
tion of the French nasal vowels as a general process of lowering. It
will also be shown in Chapters V and VI that in OF and MF, [õ] was
characterized by a very close articulation.

Straka explains this phenomenon as due to the influence of the
nasal consonant:

> Si, contrairement à ce que nous venons de dire, les voyelles
> nasales sont moyennes ou fermées dans la prononciation
> française (ainsi que dialectale) du Centre et du Midi . . . ,
> il faut attribuer cette articulation à l'influence fermante
> du segment consonantique nasal qui continue à se prononcer. . . .[19]

and he adds:

> L'influence que les voyelles subissent le plus souvent de la
> part des consonnes nasales subséquentes, est à coup sûr la
> nasalisation; une fois nasalisées, elles tendent à s'ouvrir
> . . . .
>
> Celles-ci [the vowels preceding nasal consonants] lorsqu'
> elles ne sont pas nasalisées, ou avant de se nasaliser, se
> ferment assez fréquemment devant une consonne nasale, surtout
> implosive, mais aussi parfois intervocalique.[20]

Thus Straka distinguishes between non-nasalized and nasalized vowels
followed by nasal consonants: $V+N$ and $\tilde{V}+N$. It is not clear, however, what he
means by nasalized and non-nasalized; in the first paragraph cited above,
nasalized vowels are closed because followed by a pronounced nasal con-
sonant. This is in contradiction with the third paragraph which states
that vowels can be closed by a following nasal consonant *when they are
not nasalized or before they became nasalized.*

Possibly it would be more accurate to use õ for ɔ̃. ɔ̃ is used
because when the vowel loses its nasality it becomes ɔ. e.g. bɔ̃, bɔ̃n."
See also Holger Sten, *Manuel de phonétique française* (Copenhague, 1956),
p. 26.

[19]"Remarques," p. 248, n. 1.

[20]*Ibid.*, p. 249.

According to the second paragraph cited above, the opening of

[ẽ] to [ã] in OF indicates that the vowel is "nasalized." This lowering

takes place in the eleventh century; it is known, however, that the

nasal consonant persists until the sixteenth century and yet it does not

cause [ẽ] or [ã] to become more closed. Fouché explains the closure of

the back vowels as due to assimilation to the tongue position of the

following nasal consonant:

> Tous les phénomènes de fermeture dont on vient de parler
> s'expliquent par une assimilation de la part de la consonne
> nasale suivante.
>
> Cette dernière comporte une double articulation: d'une
> part, le voile du palais s'abaisse; de l'autre, la langue
> prend une position bien déterminée. Pour *m*, la pointe
> s'élève au niveau du point de séparation entre les incisives
> inférieures et les incisives supérieures. Pour *n*, elle entre
> plus ou moins au contact des alvéoles. Quant à la racine de
> la langue, elle se soulève légèrement.[21]

The diphthong *ai* found in *maint* (Mod.F. /mẽ/) is explained by

Fouché in the same way, as evolving from *maent* through raising of the

second element of the diphthong *ae*. The presence of a following nasal

consonant after oral vowels is not sufficient, however, to explain the

closure of a preceding vowel; if it were, all vowels in all languages

should show a tendency to become raised before nasal consonants.[22] The

difference between this closure and the opening that affected [ẽ] and

[ĩ] when they were followed by a nasal consonant has been explained in

terms of a division between the influence of the tongue position of the

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[21]*Phonétique historique du français*, II (Paris, 1968), p. 355.

[22]Maurice Grammont, *Traité de phonétique*, 6th ed. (Paris, 1960),
pp. 217-222, attempts to explain the changes in timbre of nasalized
vowels in different dialects, in terms of the position of the tongue;
but he only describes what that position must have been in the differ-
ent cases, according to the outcome.

nasal consonant—which led to the closure of some preceding vowels—and the influence of the lowering of the velum which led to the nasalization of the vowels, and consequently to their lowering.[23] Even if such a clear-cut distinction were justified, it would remain a description of the facts and not an explanation. But it is difficult to understand why, at the time of the lowering of [ẽ] to [ã] as in *ventus*, the *e* of *maent* would be influenced by the tongue position of the following nasal consonant—without being nasalized—and consequently raised.

A purely physiological explanation of the phenomena is not possible because it cannot account for different developments affecting the same items at the same time, as shown by the words *ventus* and *maent*. It is also negated by the absence of such developments in French at other times, e.g., *o* in *bonne* does not show any sign of closure. Yet those descriptions of the evolution of the French nasal vowels have so far remained unchallenged. The reason for this seems to be the apparent correspondence between the opening hypothesis and the evidence provided by the early texts.

4.3.5. *The role of assonance in the study of the nasal vowels in Early Old French.* In the earliest literary texts—hagiographic poems and later, *chansons de geste*—the poet used assonance, a simple type of rhyme

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[23]See Fouché, *Phonétique historique du français*, II, 355-356. Gaston Paris, "Phonétique française: *o fermé*," *Romania* 10 (1881), 54, n. 1, suggests another explanation: "Il semble qu'il y ait dans ce fait [the closure affecting the back series] une contradiction flagrante avec ce qui a été dit ci-dessus au sujet des voyelles nasales, qui se composent nécessairement d'une voyelle *ouverte* et d'un élément nasal: on voit ici, tout au contraire, ǫ devenir ó devant les nasales. Mais il l'est devenu, si je ne me trompe, par des modifications successives. Il a d'abord donné, comme tout *o* bref accentué, ǫǫ, puis óǫ, l'accent portant sur ó. Ce groupe qui dans les conditions ordinaires est devenu *uo*, puis *ue*, etc., a perdu devant les nasales sa seconde voyelle, ǫ, et il est resté ó: bǫón, bóǫn, bón." This interpretation does not explain why such a development took place, however, and the contradiction pointed out by Paris remains.

in which only the final stressed vowels had to be similar to those of the other lines.[24] The sounds preceding or following the stressed vowel did not play any role in assonance and their nature was irrelevant. Thus, graphs that are in assonance represent the same vowel[25] and such observations make possible a tentative and partial reconstruction of the phonology of the time.[26] In the first three hagiographic poems— *La Séquence de Sainte Eulalie* (end of the ninth century), *La Vie de Saint Léger* (end of the tenth century) and *La Vie de Saint Alexis* (middle of the eleventh century)[27]—*e*+nasal consonant and *a*+nasal consonant are only found in assonance with themselves and not with *e*+non-nasal consonant or *a*+non-nasal consonant, respectively; *e+N* and *a+N*[28] do not assonance with each other and for all the other vowels, the

[24]Georges Lote, *Histoire du vers français*, II (Paris, 1951), p.95, describes assonance as follows: "L'assonance consiste dans l'identité de la voyelle tonique qui termine le mot par lequel s'achève le vers, tandis que les consonnes dont est suivie cette tonique sont différentes; ainsi *guerpir* et *esbaïs*, *ciel* et *almosniers* sont des assonances." See also Maurice Grammont, *Petit traité de versification française* (Paris, 1967), p. 33; *idem*, "Le Vers français: son évolution," *Le Français Moderne* 4 (1936), 8.

[25]It is not clear whether vowels in assonance had to be exactly identical; this problem will be examined in Chapter V.

[26]See for example B.H.J. Weerenbeck's study, "Le Système vocalique français du XIᵉ siècle d'après les assonances de la *Vie de Saint Alexis*," *Archives Néerlandaises de Phonétique Expérimentale*, 8-9 (1933), 252-262.

[27]The editions consulted are the following: *The Sequence of Saint Eulalia*, in *Historical French Reader*, eds. Paul Studer and E.G.R. Waters (Oxford, 1967), pp. 26-27; *La Vie de Saint Léger*, in Eduard Koschwitz, *Les plus Anciens monuments de la langue française*, 5th ed. (Leipzig, 1930), pp. 38-51; *La Vie de Saint Alexis*, ed. Christopher Storey (Genève and Paris, 1968).

[28]The following symbols will be used: *N* for any nasal consonant, *C* for any non-nasal consonant, *V* for any vowel.

sequence *V+N* is in free assonance with the sequence *V+C*. These facts have been interpreted as showing that *a* and *e* became nasalized before any other vowel, and have thus provided evidence for the opening hypothesis: nasal vowels tend to open, and the first vowels to be nasalized—because the easiest—were open vowels. Thus, Gaston Paris considers that ". . . la nasalisation de *a*, *e* devant une nasale dans certaines conditions est antérieure aux plus anciens monuments de la langue . . . ."[29] The same view is expressed by Guiraud:

> Du point de vue physiologique une voyelle est d'autant plus rebelle à la nasalisation qu'elle est plus fermée, car le soulèvement de la langue s'oppose à l'abaissement du voile; d'où des étapes dans l'évolution, les voyelles ouvertes ayant été nasalisées les premières et dénasalisées les dernières. D'autre part, l'abaissement du voile entraîne celui de la langue et les nasales tendent à s'ouvrir: $\tilde{i}$ > $\tilde{e}$ *(vĩn > vẽn)*, $\tilde{e}$ > $\tilde{a}$ *(vẽnt > vãnt)*.[30]

Straka who shares the same view justifies it in articulatory and acoustic terms:

> Selon les vieilles expériences de Czermak, confirmées par les radiographies, l'élévation du voile du palais et la fermeture de la voie nasale (occlusion vélo-pharyngale) ne sont pas les mêmes pour toutes les voyelles orales; elles augmentent avec le rétrécissement du canal buccal et avec la tension musculaire générale, et suivent, par conséquent, dans toutes les langues, une progression croissante depuis *a* pour lequel l'occlusion est la moins ferme (parfois, il y a même un passage très étoit entre le voile et la paroi pharyngale), par *e* et *o*, jusqu'à *i*, *u* et *ʉ*. Aussi le voile du palais s'abaisse-t-il, par anticipation, devant une consonne nasale, plus facilement lors de l'articulation d'une voyelle ouverte et plus difficilement lors de celle d'une voyelle fermée, et les voyelles se nasalisent d'autant plus aisément et rapidement qu'elles sont ouvertes. Voilà pourquoi la nasalisation commence par *a*, voyelle la plus ouverte, et si elle continue à se développer, finit par *i* (et *u*, voire *ʉ*) . . . . .

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[29]"Phonétique française: *o* fermé," p. 54.

[30]*L'Ancien français*, p. 44.

On peut encore évoquer une deuxième cause du fait que toutes
les voyelles ne se nasalisent pas à la fois. La nasalité
ne frappe pas notre oreille si la durée de la voyelle qui
en est affectée, n'est pas suffisante. Or, plus la voyelle
est fermée, et plus elle est brève . . . . Il s'ensuit par
conséquent que notre oreille est surtout sensible à la
nasale *a*, puis à *e* et ensuite seulement, à *o*, tandis qu'elle
perçoit difficilement au début l'infection nasale des *ĩ*, *ũ̈*
et *ũ* . . .[31]

Guiraud's explanation and Straka's first point, stated in articulatory

terms, seem adequate to account for the developments of the French

nasal vowels. But they do not apply to and cannot explain the evolu-

tion of the Portuguese nasals or the shape of nasal vocalic subsystems

cited previously. As for Straka's second point, it is probably based

on an incorrect generalization—that closed vowels are shorter than

open vowels. Even in French, examples such as *môle* ('mole') [moːl]: molle

('soft') [mɔl] show that this is far from being a universal principle.

Moreover, Straka does not explain why, if the degree of aperture—and

consequently the length—of the vowels is the determining factor, the

nasalized character of *o* is not as readily perceived as that of *e*.

At this point it seems necessary to turn to the early texts and

to ask whether they definitely show that the low vowels ([e] and [a])

were *nasalized* first. The fact that *e+N* and *a+N* do not assonance with

e+N and *e+C* in the *Eulalie*, the *Léger*, and the *Alexis* only shows that

e+N and *e+C* (as well as *a+N* and *a+C*) were felt to be different by the

poet and the audience, but it does not show what the feature differen-

tiating them was. The usual assumption—the one associated with the

opening hypothesis—is that lack of assonance between *V+N* and *V+C*

indicated that the vowel considered had already been nasalized. There

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[31]"Remarques," pp. 256-257.

is another possibility, however: the **separation** of *V+C* and *V+N* in assonance may indicate that, quite **independently** of the nasal character of *V* in *V+N*, the "basic timbre"—i.e. **the simultaneous** bundle of articulatory features other than "nasal," **characterizing** the vowel—[32] is different in *V+N* and in *V+C.* If this **interpretation** is correct, nothing makes it necessary to assume that **nasalization affected** the French vowels in several successive waves, **depending on** the degree of aperture of those vowels. The synchronic process **of nasalization** affects all vowels at the same time.[33] Fouché **agrees with** this view: "La *tendance* a l'anticipation a débuté pour **toutes** les voyelles à la fois quel que soit leur timbre,"[34] but he **adds in the** same passage:

> Mais cela ne veut pas dire qu'elle ait abouti dans tous les
> cas avec la même rapidité. Certaines conditions ont pu, en
> effet, la favoriser ou la retarder. Ainsi, il est naturel
> d'admettre qu'à égale qualité de timbre vocalique, l'antici-
> pation a été plus précoce lorsque la consonne nasale était
> implosive. De même, à égalité de conditions syllabiques,
> certaines voyelles ont dû s'en accomoder plus facilement que
> d'autres. Cette différence de comportement tient au degré
> d'élévation du voile du palais et au degré de contraction
> des muscles élévateurs de cet organe, qui caractérisent chacune
> des voyelles orales. A ce point de vue, ces voyelles se
> laissent classer de la façon suivante: *i* et *ü*, *u*, *œ*, *e*, et *a*
> (*i* = élévation et contraction maxima; *a* = élévation et contrac-
> tion minima). Les choses étant physiologiquement ainsi,
> l'anticipation glosso-staphyline a dû aboutir plus tôt pour
> *a* et *e* que pour les autres voyelles, et, comme l'abaissement du

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[32]Lote, "La Nasalisation des voyelles françaises," p. 165, uses the term "timbre de base" which he defines as ". . . le timbre oral de la voyelle nasalisée . . . ."

[33]None of the studies examined in Chapter I made any distinction between the vowels affected by nasal assimilation. The examples given by Navarro Tomás, *Pronunciación española,* concerning the phenomenon of nasalization in Modern Spanish, include all vowels (p. 39): "Una vocal entre dos consonantes nasales resulta, en general completamente nasalizada:
nunca- ñúŋku, *monte*- montə , *manco*- máŋkɔ, *mano*-máno, *mína*-mínɐ, *niño*- nñiɲo, *eminencia* eminénθjɐ."

[34]*Phonétique historique,* II, 356.

> voile du palais se traduit acoustiquement par la nasalisation,
> cette dernière a été plus rapidement complète pour *a* et *e* que
> pour *i* et *ü*.

It is not clear what Fouché means when he distinguishes between "la
tendance à l'anticipation" and its completion ("cela ne veut pas dire
qu'elle ait abouti dans tous les cas avec la même rapidité"). The
lines following those quoted above seem to indicate that he considers
nasal anticipation to be complete when the resulting nasal character
of the vowel serves a distinctive function:

> C'est ce dernier fait qui importe surtout; la nasalisation
> n'a été en effet *linguistiquement utilisable* [emphasis
> added] qu'à partir d'un certain degré et lorsqu'elle est
> vraiment devenue sensible à l'oreille. La tendance à la
> nasalisation peut avoir commencé en même temps pour toutes
> les voyelles: seul le résultat, la nasalisation plus ou
> moins complète, compte pour la langue.

Although he does not use the word "phoneme," Fouché seems to imply that
vocalic nasality has become phonemic for *a* and for *e* in a first step,
and only later for the other vowels. Ernest F. Haden and Edward A. Bell,
Jr. reach the same conclusion and assume that by the twelfth century—
when *a+N* and *e+N* are found in free assonance—". . . a nasal phoneme
having the phonetic value [æ̃], that is [æ] plus nasality, contrasts
with both oral /a/ and oral /e/."[35]

As pointed out in Chapter I (pp. 8-10), this implies that the
nasal consonant has disappeared since vocalic nasality assumes by
itself the function of distinguishing between words like *patte* [patə]
and *pente* [pã(n)tə]. It also implies that the nasal consonant has dis-
appeared only when the preceding vowel is the reflex of Vulgar Latin
/a/ or /ɛ/ and /e/. No such distinct behavior of the nasal consonant

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[35]"Nasal Vowel Phonemes in French," *Lingua* 13 (1964), 63.

according to its vocalic environment has been recorded. Thus Pope states that "in the pronunciation of *n final* . . . and of *n, prae-consonantal* in the word, the tongue was gradually lowered and in the course of Middle French the consonant gradually merged in the preceding nasal vowel."[36] The examples she gives in the same passage do not differentiate between *n* preceded by *a* and *e* and *n* following other vowels, but only between *n* in morpheme final and *n* in syllable final position, the absorption of the former being slower. In spite of the implications of the opening hypothesis that appear untenable in the light of what is known about the process of nasalization, and of the testimony of the early documents and of the grammarians, few voices have been raised to suggest alternative hypotheses.

4.3.6. *A different interpretation of assonance in the early texts.* The view suggested above—that lack of assonance between the same vowel in the environments *-+C* and *-+N* indicates a modification of the basic timbre of *V* in one of those two environments—has been presented by several scholars. Thus Hermann Suchier, taking position against Paris, writes:

> 1° l'assonance a pour condition suffisante l'identité de valeur phonétique des voyelles toniques; 2° la nasalisation a atteint simultanément toutes les voyelles. Il est à croire qu'elle s'est introduite vers le IXe siècle.[37]

Before Suchier, H. d'Arbois de Jubainville challenged Paris' view on the basis of some Merovingian documents:

> Suivant M.G. Paris, le *Saint Alexis* n'offre pas de trace de nasalisation dans *on* et *un*: faudrait-il en conclure

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[36]*From Latin to Modern French*, p. 70.

[37]*Les Voyelles toniques du vieux français,* transl. Charles Guerlin de Guer (Paris, 1906), p. 118.

qu'en France la nasalisation d'*on* et d'*un* soit postérieure
au XIe siècle? Il me paraît difficile d'expliquer sans
nasalisation l'introduction de l'*m* dans *volumtate* . . . ,
volomtario . . . , *nomcopante* . . . , et la substitution de
l'*n* à l'*m* dans *Conpendio* . . . , *conpensacione* . . . , *conmu-
tit* . . . , *conpendia* . . . . Les formes *ad inplire* . . . ,
inpedimento . . . , me semblent indiquer un commencement de
nasalisation de la syllabe *im*, phénomène bien postérieur à
l'*Alexis* suivant M.G. Paris.[38]

Taking part in the controversy against Paris were also Hermann Georg

Engelmann (one of Suchier's students), Ivan Uschakoff, and more

recently Georges Lote.[39] The latter shares Suchier's view concerning

the simultaneous nasalization of all the vowels, and considers that

nasalized vowels ceased to assonance with their non-nasal counterparts

only after their basic timbre was affected; but he pushes back its

beginnings to the Classical Latin period.[40] Suchier's arguments in

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[38]"La phonétique latine de l'époque mérovingienne et la
phonétique française du XIe siècle dans le *SAINT ALEXIS*," *Romania* 1
(1872), 325. The type of argument presented by d'Arbois will be
reviewed below.

[39]See respectively *Ueber die Entstehung der Nasalvocale in
Altfranzösischen* (diss., Halle, 1882); "Zur Frage von den nasalierten
Vokalen im Altfranzösischen," *Mémoires de la Société Néo-philologique
à Helsingfors* 2 (1897), 19-50; "La Nasalisation des voyelles françaises."
Uschakoff's article which was a review of the view expressed by
Suchier in his *Altfranzösische Grammatik* (Halle, 1893), and of the
one presented by Paris in "Phonétique française: o fermé," was in
turn reviewed by Paris in *Romania* 27 (1898), 300-304, and by Eugen
Herzog in *Zeitschrift für romanische Philologie* 22 (1898), 536-542.
For a detailed presentation of the controversy, see Lote, "La
Nasalisation des voyelles françaises," pp. 145-150. More recently,
Straka has explicitly endorsed Paris' views; see "Remarques," pp.
252-256 and *passim*.

[40]The hypothesis according to which nasalization started in
Latin fails to account for the fact that nasal vowels are found only
in French and Portuguese, but not in the other Romance languages.
Also it must be noted that the words in which an implosive nasal
consonant was lost in Latin have survived in French without a nasal
vowel, e.g. *sponsu* > **esponsu* > **espõsu* > *espos* > *époux*; for this
example and a detailed criticism of Lote's view, see Straka "Remarques,"
pp. 253-254. Nasalization may have affected all the vowels at the
same time without starting during Classical Latin; thus the rejection
of his hypothesis (as for example by Straka) does not invalidate his

favor of his hypothesis are based on spellings showing assimilation of the nasal consonant to the following oral consonant, e.g., *cuncte* < *comitem*, or velarization of final *n*, e.g., *ung* < *unum*. Similarly, his example of the rhyme *prince* : *rice* in Old French, and his conclusion that it shows the reduction of *n* caused by the nasality of the vowel[41] rest on the assumption that the presence of nasal vowels in French is explainable as follows: the presence of a nasal consonant results in the nasalization of the preceding vowel; the nasality of the vowel then causes the weakening and loss of the nasal consonant. As pointed out in Chapter III, the presence of the nasal consonant cannot be considered a cause.

Another argument against this view is provided by the phenomenon of denasalization: if the nasality of the vowel is sufficient to cause the loss of the nasal consonant, why did intervocalic nasals not disappear in French since, until the seventeenth century, the vowels preceding them were nasalized? On the other hand, the loss of nasal consonants can be considered a special case of the general process of elimination of consonants in syllable and morpheme final position. This criticism applies as well to the opening hypothesis and does not constitute a counterargument to the view that lack of assonance may be due to a difference in timbre for the vowels concerned. It only shows that the answer to the problem may not be found directly in the data; instead it

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assumption that assonance was based on the buccal timbre of the vowels and that consequently nasalized vowels only stopped assonancing with their oral counterparts when their timbre changed. Since this assumption and Suchier's are the same, they will be examined together.

[41]For these and other examples, see *Les Voyelles toniques du vieux français*, pp. 117-118.

may be provided by the formulation of a hypothesis which makes it possible to account adequately for the data. Thus, just as the development of the French nasal vowels can be described—at least in its main lines—by the opening hypothesis, the facts revealed by the early assonanced texts can also be explained by the idea that open vowels nasalize first. But it has been demonstrated that such hypotheses cannot account for all the facts concerning the French nasal vowels and are negated by Portuguese and other languages, as well as by the results yielded by synthetic speech experiments.

Suchier's hypothesis can also account for what is revealed by the early texts; it does not go against what is known about the general process of nasalization. It must be further tested by checking its implications and the general principles within which it can be formulated, against the rest of the data—the development of the French nasal vowels and what is known about language and language change. The general process of nasalization as defined in Chapter I, and a survey of nasal vowel subsystems among various languages, give us no reason to suppose, along with Straka, Paris and the supporters of the opening hypothesis, that nasalization took place in different waves at different times according to the apertures of the vowels affected. The assonances of the early texts do not necessarily imply such a conclusion and Lote and Suchier have presented another interpretation for the facts outlined above: assonance depended on the basic timbre of the vowels and $V+C$ and $V+N$ ceased assonancing when their oral quality started diverging. This point can be briefly illustrated by the case of [ẽ]. In the *Eulalie*, the *Léger* and the *Alexis*, $e+N$ does not assonance with $e+C$, nor with $a+N$. In the *Roland*, $e+N$ assonances with $a+N$; this shows that in the eleventh

century the timbre of *e(+N)* is very close to that of *a(+N)*. It is reason-
able to assume that if two centuries before, *e+N* did not assonance with
e+C, it is because the timbre of the nasalized vowel *e* was beginning to
diverge from that of the vowel *e* followed by a non-nasal consonant. This
hypothesis does not require the postulation of different periods of
nasalization, which implies—and seems to have been motivated by—the
assumption that nasal vowels tend to become always more open and are best
pronounced and perceived when more open. The latter assumption has been
shown to receive no support from many of the known languages, including
Portuguese, nor from experimental studies.

This study will follow the Suchier-Lote view concerning the signi-
ficance of what is revealed by the early assonanced texts—that lack of
assonance between the same vowel in the environments -*+C* and -*+N* indicates
a modification of the basic timbre of *V* in one of these two environments.[42]
This view is accepted as not making any claim contrary to what is known
about the process of nasalization and the next chapter will attempt to
show that the evolution of the French nasal vowels can be accounted for
within such a hypothesis in terms of general principles of linguistic
evolution.

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[42]Actually, it will be shown in Chapter V that the acoustic
difference due to the presence or the absence of nasality also plays a
role in assonance; although a difference in basic timbre will be postu-
lated for vowels clearly separated in assonance when occurring in the
environments *C* and *N*, the presence or absence of nasality seems to be
responsible for a *tendency* to separate *VN* and *VC* when these two
sequences can also occur in mixed laisses.

CHAPTER V

THE EVOLUTION OF NASALIZED VOWELS IN THE

OLD FRENCH PERIOD

5.1. *Purpose*

The period examined in this chapter will be that corresponding to
the divisions labelled Early Old French (EOF) and Later Old French (LOF)
by Pope and extending roughly from the middle of the ninth century to
the end of the eleventh, and from the end of the eleventh to the begin-
ning of the fourteenth respectively.[1] Most of the texts analyzed here
are in assonanced form—hagiographic poems for the period of the ninth
to the eleventh century, and *chansons de geste* for the twelfth and
thirteenth centuries. Before presenting a functional-structural account
of the phonetic information derived from an examination of those texts,
it will be necessary to describe briefly the method of analysis employed
and some of the problems it raises, together with the symbols used in
this study, and the sources of the Old French nasalized vowels.

5.2. *The Method of Analysis for the Early Texts.*

In assonance, the phonetic quality of the vowel only is taken
into account, independently of the preceding or following consonants;[2]
therefore, for two or more words occurring in assonance (in couplets,
strophes or laisses)[3] the stressed vocalic nucleus can be assumed to have

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[1]See *From Latin to Modern French*, p. 9.

[2]See above, Chapter IV, p. 66, n. 24.

[3]Whereas strophes consist of a fixed number of lines throughout
a poem, the length of laisses varies, sometimes considerably; laisses
are characteristic of the *chansons de geste;* see Lote *Histoire du vers
français*, II, 68.

the same or a similar phonetic quality. In the particular case investigated here—nasalized vowels—assonanced poems are of great value: when vowels followed by a nasal consonant and those followed by a non-nasal consonant do not occur together in assonance, this separation can be attributed to a phonetic difference existing between the vowels themselves, since consonants are not taken into account in assonance. It has been suggested in Chapter IV that the main factor of differentiation between the two types of vowels considered above was the alteration of the "basic timbre" of the vowel occurring before either type of consonant.

5.2.1. *Problems inherent to this method.* Since in the thirteenth century assonance was gradually replaced by rhyme,[4] in which both vowels and consonants are taken into account, the type of analysis outlined above will have to be restricted to the earlier texts. Rhymed poems, however, will be useful in another way: they will reveal whether two or more vowels in the same consonantal environment are the same or different, e.g., whether the sequences -*ent* and -*ant* have merged or are still separate.

The results of such analyses must be formulated with caution since little is known about the rules of versification followed by the poets at that time. Brunot and Bruneau point out that ". . . Hugo, excellent versificateur, fait rimer deux 'variétés' d'*a*: 'châsse' (á) et 'chasse' (à) . . ."[5] and they add:

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[4]Lote, *Histoire*, II, 97; see also Grammont, *Petit traité de versification française*, p. 34.

[5]*Précis de grammaire historique*, p. 62.

> Ils [the early poets] ont pu aussi utiliser des assonances
> traditionnelles: Hugo rime *cher* et *marcher*. Quand nous
> trouvons dans la même laisse de la *Chanson de Roland* (LXXXVII)
> "Espaigne" et "regarde" (v. 1103-1104), nous ne pouvons en
> conclure que l'*a* de *Espaigne* était un *a* pur. (pp. 62-63)

Scholars have taken opposite stands on this problem; T. Atkinson Jenkins maintains that assonance was exact and rejects as mistakes of the scribes readings that contradict this view, but Joseph Bédier and J. J. Salverda de Grave consider that Old French poets did not adhere to the strict rules formulated by modern grammarians.[6] The latter view will be followed here, because it does not impose any *a priori* conception on the study of the early literary texts.

Another problem concerns the inconsistencies marking the phonetic nature of certain vowels as indicated by their occurrence in rhyme or assonance with different sounds. In some cases, the association of two particular sounds can be rejected as accidental because:

a) it is an isolated example, and

b) the two sounds share no features which would make even a loose assonance possible, e.g., *i* and *a*.[7] On the other hand, certain so-called irregularities are frequent throughout a particular poem or a particular period. This has led to the formulation of hypotheses according to which different parts of the same poem would have been written at different times by different authors.[8] This conclusion is only made necessary, however, if languages are viewed as homogeneous structures at any point of their evolution; the idea that competing variants of the same

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[6]See below, pp. 94-96.

[7]See below, pp. 96-97 for examples.

[8]See for examples Robert A. Hall, Jr., "Linguistic Strata in the *Chanson de Roland*," *Romance Philology* 13 (1959), 173-278.

form or sound coexist even in the language of individuals, is widely accepted and has been abundantly illustrated in recent studies.[9] It is believed here that most cases of apparent irregularities can be explained in terms of competing variants at a given time.

5.2.2. *The dialects in Old French*. The literary texts which will be examined in this chapter do not all come from Ile-de-France, which is considered the cradle of the French language. This raises the problem of whether there is any continuity between the earlier and the later texts, and consequently whether any conclusions can be reached concerning the evolution of the French language. Suchier, in his "Preface" to Karl Warnke, *Die Lais der Marie de France*, postulates for the first part of the twelfth century a tongue that admits few dialectal features and in which he sees a literary language that he calls "normannisch." His conviction that "normannisch" never was the dialect of Normandie—which he calls "normandisch"—is based on two phonetic changes: "normannisch" has *chambre* and *lit* while "normandisch" has *cambre* and *let* or *liet;* he points out that of the whole territory of Old Neustria, only in Ile-de-France could the "normannische" developments *chambre* and *lit* coincide with the dialectal development.

This question is pursued further by Gertrud Wacker who clearly summarizes the relationship between dialects and literary language:

> Seit Beginn des XII. Jahrhundert [sic] gibt es in
> Nordfrankreich eine Schriftsprache. Wir pflegen sie
> "normannisch" zu nennen. Sie herrscht auf dem Kontinent

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[9]See in particular Weinreich *et al.*, "Empirical Foundations," and I. Fónagy, "Über den Verlauf des Lautwandels," *Acta Linguistica Academiae Scientiarum Hungaricae*, 6 (1957), 173-278.

bis zum letzten Drittel des XII. Jahrhunderts. Sie ist mit dem Dialekt der Ile-de-France identisch und wird deshalb besser "altfranzisch" genannt . . . .

Seit dem Anfang des XIII. Jahrhunderts tritt das Pikardische in grossem Umfang neben dem französischen in der Literatur auf. Sein Anteil an der französischen Dichtung wächst durch das ganze XIII. Jahrhundert. Der Einfluss des Franzischen auf die Schriftsprache bleibt trotzdem überragend.[10]

Thus, from the twelfth century on, the existence of this literary *koiné* makes it possible to accept the idea of continuity between the earlier and the later texts.

Before the twelfth century, *La Vie de Saint Alexis* can also be considered as written in the "normannische" *koiné*. Gaston Paris and Léon Pannier agree with Suchier and Wacker in attributing to Normandie and Ile-de-France the same literary dialect:

. . . la Neustrie, composée . . . spécialement de l'Ille-de-France et de la Normandie . . . a eu originairement un seul et même dialecte: ce n'est qu'à une époque qui n'est pas antérieure au XIIe siècle que se sont manifestées entre le langage des Français et celui des Normands certaines différences . . . .[11]

They point out that ". . . on ne trouve trace dans le texte d'*Alexis* ₀ ₀ ₀ d'aucune de ces particularités dialectales, soit normandes, soit françaises, et par conséquent il est antérieur à la séparation des dialectes normand et français" (p. 43), and they add: "Si ce fait est vrai . . . , il devient assez indifférent de savoir si notre poème a été composé en France proprement dite ou en Normandie" *(loc. cit.)*.

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[10]"Über das Verhältnis von Dialekt und Schriftsprache im Altfranzösischen," *Beiträge zur Geschichte der romanischen Sprachen und Literaturen* 11 (1916), 87.

[11]*La Vie de Saint Alexis, poème du XIe siècle et renouvellements des XIIe, XIIIe et XIVe siècles* (Paris, 1872), p. 42.

La Vie de Saint Léger has not been localized with any certainty,
and the only widely accepted conclusion is that it is written in a
dialect *d'oïl*; only isolated features allow Paris to postulate for this
poem a Northeastern origin (possibly Bourgogne).[12] The oldest assonanced
text available—the *Cantilène de Sainte Eulalie*—was written in the
Picard-Wallon dialect. The term dialect, however, must not evoke the
idea of homogeneous structures opposed to other totally different homo-
geneous structures; it is used to designate the speech characteristic
of a particular area, which may share some of its features with a
neighboring dialect, and some others with another neighboring dialect.
The situation of the nasalized vowels *(VN)* in the *Eulalie* does not seem
to be different from that of the *VN*'s in the *Léger* and in the *Alexis*
and this common situation seems to be continued without any interruption
by that of the twelfth and thirteenth centuries. This suggests that the
VN subsystem had not yet evolved into different dialectal directions at
the time of the *Eulalie*, the *Léger* and the *Alexis*—or at least that if
any differentiation had occurred, it had not affected the particular
dialects in which they were written.

There is good evidence that differentiation did occur at a later
date, but the literary *koiné* that was then used does not generally re-
veal the various regional idiosyncrasies which are known to us thanks
only to the statements of grammarians and the regional tongues spoken
today. Thus, the sixteenth century grammarians blame the Picards for
pronouncing *-ent* [ẽ] and not [ã];[13] the Hebraïc transcriptions of the

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[12]See Paris, "*La Vie de Saint Léger*, texte revu sur le ms. de
Clermont-Ferrand," *Romania* 1 (1872), 282 and 286.

[13]See below, Chapter VI.

thirteenth century presented by Mayer Lambert and Louis Brandin show

that VL [e] or [ɛ] and [a] before a nasal consonant were pronounced

[õn] by the transcriber, a pronunciation which is attributed to

Bourgogne.[14] It is significant that at about the same time, in 1188,

a poet from Lyon, then writing in Châtillon sur Azergue "abandonne son

parler lyonnais, qui 'est sauvage aux français', pour essayer 'de dire

en lor langage al mieus qu'il a séu dire'."[15] The existence of this

increasingly important literary *koiné* makes it possible to follow

continuously the evolution of the central dialect on which it was

based, until the first direct descriptions of the standard language

into which it developed, in the sixteenth century.

5.3. *Symbols Used in this Study*

C represents any non-nasal consonant or $\emptyset$, *N* any nasal consonant.

Nasalized vowels are represented by the sequence *VN* as opposed to *VC* for

non-nasalized vowels. The sequences *VN* and *VC* are not meant to represent

the sequences of sounds actually found in particular words, but only to

symbolize nasalized and non-nasalized vowels; therefore, no distinction

is made in this schematized representation between masculine and feminine

assonances which could be represented in detail as *VN(C)* or *VC(C)*; in

some cases, nasalized vowels occurring in feminine rhymes (or assonances)

are in the same environment as when occurring in masculine rhymes; thus

in Old French, final [ə] and final consonants being pronounced, in *pont*

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[14]See Mayer Lambert and Louis Brandin, *Glossaire Hébreu-français du XIIIe siècle* (Paris, 1905), p. xii.

[15]Ferdinand Brunot, *Histoire de la langue française*, 3rd ed. rev. (Paris, 1924), I, 329.

[põnt] and *pondre* [põndrə], õ occurs in both cases before a cluster -*NC*.

In feminine rhymes, nasalized vowels may occur either before a cluster

NC as in *plante* [plãntə] or before an intervocalic nasal consonant as in

lame [lãmə]; since vowels were nasalized before all nasal consonants

independently of their position—preconsonantal, final or intervocalic[16]

—and developed in the same way in all those positions until the end of

the sixteenth century, distinguishing between those different cases

would be cumbersome and would mask an important generalization.

5.4. *Sources of Old French Nasalized Vowels*

At the time of the earliest texts, in EOF—which will be the

starting point for this study—some of the reductions outlined in

Chapter IV (p.55) had already affected the *VN* subsystem.

5.4.1. *iN* [ĩn] comes from VL *i* in free or checked syllables,

stressed or unstressed, e.g.,

CL *vīnum* > VL *vīnu* > EOF *vin* [vĩn]

CL *quīnquagĭnta* > VL *cīnquanta* > EOF *cinquante* [cĩŋkãntə]

5.4.2. *uN* [ũn] comes from VL *u* in free and checked syllables,

stressed or unstressed, e.g.,

CL *ūnum* > VL *unu* > EOF *un* [ũn]

CL *lūnae diem* > VL **lunis die* > EOF *lundi* [lũndi]

5.4.3. *oN* [õn] (also often spelled *un*)[17] comes from

1)   VL [o] free and checked, stressed and unstressed, e.g.,

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[16]See Pope, *From Latin to Modern French*, p. 168; Kr. Nyrop, *Grammaire historique de la langue française*, 3rd ed. (Copenhague, 1914), I, 220-221.

[17]For the related problems of the spelling and the pronunciation of *oN*, see below, pp. 110-113.

CL *ŭmbra* > VL *ombre* > EOF *ombre* [õmbrə]

CL *dăre* > VL *donare* > EOF *doner* [dõner]

2)   VL [ɔ] unstressed or checked stressed, e.g.,

CL *pŏntem* > VL *ponte* > EOF *pont* [põnt]

VL [ɔ] in free stressed position diphthongized to *uo, ue,* e.g., "buona

pulcella fut Eulalia" *(Sainte Eulalie,* v. 1) The non-diphthongized and

the diphthongized forms co-existed for a long time, e.g., in the *Alexis*

"Bons fut li secles" (I, 1), "boens hom" (XLV, 224). As pointed out

by Charles Bruneau, "nous pouvons donc admettre que les mots qui

présentaient une voyelle susceptible de se diphtonguer ont possédé *deux*

formes, une forme *non diphtonguée* et une forme *diphtonguée.*"[18] Whereas

the front diphthong *ie* became generalized, replacing completely the form

[ɛ] in free stressed position, in the back, the non-diphthongized form

was already more frequent in the twelfth century,[19] and finally *ueN*

disappeared completely. This has been explained in terms of syntactic

phonetics, e.g., *buens* would occur in stressed position and *bons* in

unstressed position in the sentence;[20] the examples given above and

taken from the *Alexis,* however, do not support this hypothesis. There

is also the possibility that paradigmatic analogy reshaped forms like

suenet '(il) sonne' on the model of *soner.*

The forms *huem* (< CL hŏmo) and *cuens* (< CL cŏmes) must have

been used at the beginning as nominatives while *hom* (< hŏmĭnem) and

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[18]"La Diphtongaison des voyelles françaises," in *Festschrift Karl Jaberg* (Halle-Saale, 1937), p. 187.

[19]See Pope, *From Latin to Modern French,* p. 216.

[20]See Fouché, *Phonétique historique,* II, 354-355; Nyrop, *Grammaire historique,* I. 231; E. and J. Bourciez, *Phonétique française,* pp. 87-88.

and *conte* (< cŏmĭtem) were used as oblique forms. The loss of the de-
clensional system in LOF and the generalization of the oblique case

led to the loss of *li cuens* and *li huem,* as well as of *li murs, li peres,*

etc. The new one-case system was preceded by a period of transition

in which, in the nominative, *hom* and *conte* were used concurrently with

huem and *cuens.* This situation is illustrated in the *Chanson de Roland*

(see below, n. 29), where *hom* and *huem* seem to have become free variants

(the distinction between nominative *cuens* and oblique *conte* being still

observed);

v. 223 Qu'il devendrat jointes ses mains tis hom

v. 3265 Li amiralz mult par est riches hoem.

This loss of case distinction may have been instrumental in directing

the choice between the variants *o* and *ue* in *oN-ueN* even in the case of

items for which the variants were not morphologically determined, e.g.,

bon and *buen.*

3)   Gallo-Roman *au* e.g.,

CL *avunculum* > VL *aunculu* > EOF *oncle* [ŏŋklə]

Thus, in EOF, before a nasal consonant, the opposition between /o/, /ɔ/

and /au/ is neutralized; in the *Roland* laisses in [ɔ]*C* are separated

from laisses in [o]*C* (e.g., LXXXIII and XCIX respectively) while the

following words in *oN* are in assonance: *hume* (< CL hŏmĭnem) *cunte*

(< CL cŏmĭtem), *dunent* (< VL [donare]), *confundent* (< CL cunfŭndĕre)

hunte (< Germanic *hauniþa*), *umbre* (< CL ŭmbra), *curune* (< CL corōna)

in laisse XXIX.[21]

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[21]The same laisse also contains the word *abandune* formed on the
germanic *banda.*
    Martinet, *La Description phonologique avec application au parler
franco-provençal d'Hauteville (Savoie)* (Geneva and Paris, 1956), p. 42.

5.4.4. *eN* [ĕn]. The spelling *en,* as in *paramenz, temps, torment,* etc., represents at the same time the reflexes of VL [e] (CL ē and ĭ) and [ε] (CL ĕ and *ae*). Those sounds which are kept separate in assonance when followed by a non-nasal consonant are found together when preceding a nasal consonant. Thus, in the *Roland, e* (< CL ĭ) occurs in laisse CXXI: *arcevesque* (archiepĭscopum) *messe* (mĭssa), *proecces* (prod-ĭttia), *tramette* (trāmĭttĕre), *esdemetre* (ex-dīmĭttĕre), *verte* (vĭrĭda);[22] *e* (< CL ĕ) occurs in twenty-one laisses, e.g., in laisse XXV: *destre* (dextĕrum), *estre* (esse+re), *tere* (tĕrra), *estre, perte* (pĕrdĕre), *noveles* (novĕllum). On the other hand, in laisse CXXIII, *fendre* (fĭn-dere), and *ensemble* (in-sĭmul) are in assonance with *sanglente, dementent, consente, vendre, cuntence,* all reflexes of Latin words in *eN.* Thus, before a nasal consonant, the opposition between /e/ and /ε/ is neutra-lized in EOF.

5.4.5. *aN* [ăn]. This nasalized vowel comes from VL *a* in checked syllables, stressed or unstressed, e.g.,

CL *campum* > VL *campu* > EOF *champ* [čămp]

CL *canere* > VL *cantere* > EOF *chanter* [čănter]

5.4.6. *aiN* [ăin]. This diphthong in the environment *-N* comes from:

1) VL *a* in free stressed syllables, except when preceded by a *yod* (see below, p. 87), e.g.,

defines neutralization as follows: "Lorsque la différence entre deux phonèmes ne saurait, en certaines positions, servir à des fins distinc-tives, on dit que l'opposition entre ces deux phonèmes est *neutralisée.*"

[22]The same laisse also contains the two words *regrette* and *Tulette* at the end of verses 1609 and 1611; *regrette* comes from anglo-saxon *groettan and *Tulette* is a loan-word from Spanish; see T. Atkinson Jenkins, *La Chanson de Roland; Oxford Version* (Boston *et al.,* 1924) p. ci (introduction).

CL *manum* > VL *manu* > EOF *main* [mãin]

2)   VL *a* followed by a *yod,* e.g.,

CL *sanctum* > VL *sanctu* > EOF *saint* [sãint]

CL *balneum* > VL *baniu* > EOF *bain* [bãin]

The change *a* > *ai* also occurs in *aC* in free stressed position; the evolution of *aiN* and *aiC,* however, is different in that *aiC* monoph-thongizes much earlier than *aiN*.[23]

     5.4.7. *eiN* [ẽin]. This diphthong comes from

1)   VL [e] in free stressed syllables, e.g.,

CL *plēnum* > VL *plenu* > EOF *plein* [plẽin]

2)   VL [e] followed by a *yod,* e.g.,

CL *pĭngere* > VL *pengere* > EOF *peindre* [pẽindrə]

     5.4.8. *ieN* [ĩen]. The EOF diphthong *ie,* whether in *ieN* or in *ieC,* comes from the following sources:

1)   VL [ɛ] in free stressed syllables, e.g.,

CL *pĕdem* > VL *pede* > EOF *pied* [pieθ]

CL *bĕne* > VL *bene* > EOF *bien* [bĩen]

2)   VL *a* in free stressed syllables and preceded by a *yod,* e.g.,

CL *cārum* > VL *caru* > EOF *chier* [čier]

CL *canem* > VL *cane* > EOF *chien* [čĩen]

CL *laxāre* > VL *laxare* > EOF *laissier* [laisier]

CL *christianum* > VL *christianu* > EOF *chrestien* [krestĩen]

3)   for *ieC,* from the Latin suffix *-arium,* e.g.,

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[23]While *aiN* (as well as *eiN* with which it merges) does not become a monophthong until the sixteenth century (see below, Chapter VI), *aiC* monophthongizes as early as the twelfth century; see for example, E. Walberg, *La Vie de Saint Thomas le martyr par Guernes de Pont-Sainte-Maxence* (Lund, 1922), p. clxix.

CL *primārium* > VL *primariu* > EOF *premier* [prǝmier]

The passage of free stressed *a* to *ie* under palatal influence is the phenomenon often associated with the term "Bartsch's Law"—from the name of the German scholar who first characterized the change in terms of its environments.[24] This particular development must have taken place very early since already in the *Eulalie*, the following assonances are found:

1)

5 *conseilliers*	9 *pleier*	11 *Maximien*
6 *ciel*	10 *menestier*	12 *pagiens*
13 *chielt*	21 *pagiens*	25 *ciel*
14 *christien*	22 *chief*	26 *preier*

5.4.9. *oiN* [õin]. This EOF diphthong comes from VL [o], [ɔ] followed by a *yod*, e.g.,

CL *punctum* > VL *punctu* > EOF *point* [põint]

5.5. *The Early Hagiographic Poems*

The earliest assonanced text for the *langue d'oïl*, the *Eulalie*, is a twenty-nine line poem, composed in the last quarter of the ninth century and believed to have been written in the Picard-Wallon dialect.[25] An analysis of its assonances yields the following results:

1)   The sequence *ieN* is in assonance with *ieC*, e.g., vvs. 9-10-11-12-

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[24]For a slightly modified presentation of "Bartsch's Law," see Paris and Pannier, *La Vie de Saint Alexis*, pp. 78-79; see also Pope, *From Latin to Modern French*, pp. 163-164, 180, 192.

[25]Studer and Waters, *Historical French Reader*, point out that the *Eulalie* was "probably composed and written down at the Abbey of St. Amand-les-Eaux near Valenciennes" and that "the dialect is most probably that of St. Amand" (p. 26); see also Albert Henry, *Chrestomatie de la littérature en ancien français*, 2nd ed. (Berne, 1960), p. 2.

13-14, 21-22.

2)   There are two couplets in *eN*:

v. 7 *paramenz*	v. 15 *element*
8 *preiement*	16 *empedementz.*

There is no example of assonance between *eC* and *eN*, but one couplet shows the assonance *eC* : *eC*:

17 *virginitét*

18 *honestetét.*

Thus, *e* followed by a nasal consonant seems to be different from *e* followed by a non-nasal consonant.

The same fact is revealed by the analysis of another poem, *La Vie de Saint Léger*, somewhat longer than the *Eulalie*, and composed later (in the second half of the tenth century), in the eastern part of the *langue d'oïl* territory.[26] Thus, three couplets show the assonance *eN* : *eN*:

v. 13 *temps*	31 *juvent*	173 *torment*
14 *parent*	32 *tiemps*	174 *consolament.*

The poem further reveals the assonance *aN* : *aN*:

v. 3 *sanz*	9 *áánz*	51 *granz*	133 *ardant*
4 *aanz*	10 *granz*	52 *franc*	134 *percutan(t)*
151 *granz*	183 *granz*	191 *tirant*	203 *granz.*
152 *tiranz*	184 *desanz*	192 *adenavant*	204 *ardaz.*[27]

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[26]This conclusion is reached by Paris on linguistic and historical grounds in his article "La Vie de Saint Léger," *Romania* 1 (1872) 275-286; see also Louis Kukenheim and Henri Roussel, *Guide de la littérature française du moyen age,* 3rd ed. (Leiden, 1963), p. 13. The analysis presented here is based on citations from Koschwitz, *Les plus Anciens monuments,* pp. 38-51.

[27]This is corrected by Paris as *ardanz;* see also Koschwitz, *Les plus Anciens monuments,* p. 45; Karl Bartsch, *Chrestomatie de l'ancien*

As in the *Eulalie*, *ieN* is in free assonance with *ieC*:

5 *biens*

6 *Lethgier*

IN and *oN* are also found in free assonance with *iC* and *oC* respectively (vvs. 27-28-29-30, 57-58, etc.; and 35-36, 39-40, etc.). There is no case of assonance in *uN*. Thus, in the *Saint Léger*, the vowels in the sequences *aN* and *eN* are different from those in *aC* and *eC* respectively, while no difference seems to be felt by the poet between the vocalic segments of *ieC* and *ieN*, *iC* and *iN*, *oC* and *oN*.

La Vie de Saint Alexis was written in the middle of the eleventh century and is attributed to an Anglo-Norman scribe.[28] An analysis of its assonances reveals the same facts as the *Eulalie* and the *Saint Léger*:

1) The sequence *aN* is separated in assonance from the sequence *aC;* there are six strophes of five lines each illustrating the assonance *aN* : *aN* (strophes II, VIII, XXIII, XLVI, LV, CXXII), e.g., VIII (vvs. 36-40):

amfant

tant

avant

vivant

Franc

and four strophes illustrating the sequence *aC* (L, LXXV, XC, CXVII), e.g., L (vvs. 246-250):

nate

tabla

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français (VIIIe-XVe siècles), 12th ed. (New York, 1958), p. 12.

[28]Storey, *La Vie de Saint Alexis*, p. 22; see also Paris and Pannier, *La Vie de Saint Alexis*, pp. 45-46.

parage

sacet

linage.

2) Five strophes reveal the assonance *eN : eN* (V, X, XXVIII, XCI, CVI) while sixty-six strophes contain *eC*, e.g.,

V (vvs. 21-25):	III (vvs. 11-15):
longament	*salver*
forment	*cristientét*
parfitement	*citét*
cumandement	*nobilitét*
talent	*parler.*

3) On the other hand, there is free assonance between the sequences:

a) *ieN* and *ieC* (strophes LXIV, LXVIII), e.g., LXVIII (vvs. 336-340):

volontiers

Eufemïen

conseilét (for "conseiliet")

provenders (for "provendiers")

cristiens

b) *iN* and *iC* (strs. XX, XLV, LVII, LXXI, LXXXVII, CV), e.g., XX (vvs. 96-100):

departit

Alexis

tramist

guarir

poverins.

4) The case of *oN* and *oC* must be studied separately; in some strophes, *oN* and *oC* are mixed, e.g., XLIV (vvs. 215-220):

  hom

  maison

  grabatum

  dolur

  amor

but in XLIII (vvs. 211-215), only *oN* occurs:

  Rome

  cointe

  acuntret

  humes

  numet

Although the length of the poem suggests that conclusions be reached cautiously, it seems reasonable to deduce that some difference was felt by the poet between *oN* and *oC*.

5.6. *The Chansons de Geste. La Chanson de Roland.*

La Chanson de Roland—a *chanson de geste* of 4002 lines—is usually considered to be the work of an Anglo-Norman scribe, and to have been written between 1125 and 1150.[29] The data concerning its author are quite scarce and have not yet yielded a satisfactory answer.[30]

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[29]See William Calin, *La Chanson de Roland* (New York, 1968), pp. 2-3; the analysis presented here is based on citations from this edition. See also Eugene Dorfman, *The Roland and the Cid: a Comparative Structural Analysis*, unpublished Ph.D. dissertation (Columbia University, New York, 1950), p. 8. Jenkins, *La Chanson de Roland*, p. xlviii, suggests that it was written in "northern Normandy or the adjoining part of Picardy proper"; for the date, see pp. xliii-xlvi.

[30]*Ibid.*, pp. xlvi-xlvii.

The analysis of the assonances in the *Roland* yields the following results:

1)   As a rule, *aC* and *aN* are separated but there are some cases in which *aC* and *aN* are in assonance.[31]

2)   *eN* and *eC* are not in assonance with each other.

3)   There are eleven laisses of assonance in *aN* : *aN*.[32]

4)   There are four laisses of assonance in *eN* : *eN*.[33]

5)   There are eighteen laisses revealing the assonance *aN* : *eN*.[34]

6)   Apart from these eighteen laisses of assonance in *aN* : *eN*, there are some in which *aN*, *aiN*, and *eN*, *eiN* are mixed. Thus, there are 47 examples of *aN* : *aiN* assonances and six cases of *eN* : *eiN*.[35]

7)   *eiN* does not, as a rule, assonance with *eiC*; *ceinte* and *meinent* (vvs. 984 and 991), however, occur in laisse LXXVIII—a laisse in *eiC*. This apparent exception is probably due to the presence of older variants of *eiC* which were still pronounced [ei] and not [oi] or some intermediate stage between [ei] and [oi] (see below, p. 115).[36]

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[31]For an examination of this problem, see below, pp. 94-98.

[32]LXIX, CI, CXV, CLXV, CLXXX, CXCII, CXCVI, CCXVII, CCXX, CCXL, CCLI.

[33]CXXIII, CXLIV, CCLXXIV, CCLXXXV; a slightly different analysis is presented by Edward André Bell, Jr., *The Emergence of Nasal Vowel Phonemes in French*, unpublished Ph.D. diss. (University of Texas, Austin, 1962). He lists laisse CCLXXIV among those in which *aN* is in assonance with *eN* (p. 24); the edition he consulted (Jenkins, *La Chanson de Roland*) provides half a verse which is missing in O (Oxford version), and the verse thus supplied reads (v. 3786):
"Ço li dist Guenles: 'En vos ai ma fidance . . . .'"

[34]XIX, XX, XXX, XLVII, LXIII, LXXXV, CXXIV, CXXV, CXXIX, CXXXIV, CXXXVIII, CLXXIV, CLXXXIV, CCII, CCXV, CCXXVI, CCXLIII, CCLIV.

[35]For example,

CCXXV	3093	*orieflambe*	CXXXV	1786	*temples*
	3094	*Romaine*		1787	*peine*
	3095	*eschange*		1788	*entendent*

[36]In laisse CCLVII—also a laisse in *eiC*—the presence of .c...

8)   *ieN* is in free assonance with *ieC*.[37]

9)   *uN* is also in free assonance with *uC* and *iN* with *iC*.

10)   There are eight laisses of assonance in *oN* : *oN*, one in *oC* : *oC* and 36 in *oN* : *oC*.[38]

5.6.1.   *aN and aC*. Whereas in the *Saint Léger* and the *Alexis*, *aN* is found in assonance only with itself, the *Roland* provides examples of *aC* in assonance with *aN*. Thus, *chevalchet* (v. 831), *rereguarde*, *marche* (838-839), *Charles*, *barbe* (1842-1843), *amiralz* (2831), *sale*, *damisele*[39] (3707-3708), *marches* (3716), occur in laisses in *aN*. On the

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(for *cent*) and *parenz* is more difficult to explain; but examples of couplets completely unrelated to the rest of the laisse are found elsewhere in the poem (see below, pp. 96-97).

[37]Bell, *The Emergence*, p. 25, n. 28, points out that "four recurring forms in -*ien* are found in assonance with *a(N)*, *e(N)*. These are dissyllabic by metrical count and nowhere do these same forms rhyme with monosyllabic -*ien*. Their structure, then, is that of [i + eN] and not [jeN] . . . . These four forms are: *esciëntre* (laisse cxxxiv), *esciënt(e)* (laisses cxliii, cclix), *oriënt(e)* (laisses xxx, cclix), *niënt* (laisses xxii, xxx, lxiii, cx, cxxiv, cxxviii, cxxxiii, cxxxvii) and *sciënce* (laisse ccxv)." In these words, *ie* comes from Latin *ie* and does not result from the diphthongization of VL [ε], nor from the phenomenon known as Bartsch's Law.

[38]For *oN* : *oN*: XVII, XXIX, XLVIII, LXX, CXVIII, CXLII, CC, XXI, CCXXXV.

For *oN* : *oC*:   II, XV, XXII, L, LXI, LXVIII, LXXIV, LXXX, XCIV, XCVIII, XCIX, CVI, CXVI, CXXXIII, CXXXVII, CL, CLXII, CLXVI, CLXXVIII, CLXXXVI, CLXXXVII, CXCI, CXCIV, CCV, CCVII, CCXV, CCXXIV, CCXXIX, CCXXXIV, CCLVI, CCLIX, CCLXIV, CCLXVII, CCLXXIII, CCLXXVI.

For *oC* : *oC*: CXI.

Bell lists eleven laisses of assonance in *oN* : *oN*, thirty-three in *oN* : *oC*: laisse XV which is in *oN* : *oC* in Calin's edition, becomes in *oN* : *oN* in Jenkins', through inversion of the word *respont* (v. 216); in laisse XXXII, the reading "l'empereur" (v. 414) is replaced by "Marsilion" in Jenkins' edition. For laisse CCLXXVI which Bell lists as a laisse *oN* : *oN*, both editions have "amor" in verse 3810.

[39]The case of *damisele*, in assonance with words in *aC* and *aN* is not isolated. Joseph Bédier, *La Chanson de Roland*, *commentée par—* (Paris, 1927) shows that the assonance *a* : *e* is frequent in the *chansons de geste* (pp. 275-278). J. J. Salverda de Grave, "Observations sur le texte de la *Chanson de Guillaume*," *Neophilologus* 1 (1916) attributes this particularity to the very open character of ε (p. 11), and he adds that scholars

other hand, *Brigant* (889), *Espaigne* (1104), *hanste* (1273), *Alemaigne* (3038), *camps* (3336), *guant, demant*[40] (3845-3846), occur in laisses in *aC*. Bédier points out that other cases of assonance between *aN* and *aC* are found in the *Charroi de Nîmes, Floovant,* and *La Chanson de Guillaume.*[41]

According to a widely accepted view, *aN* and *aC* are never found in assonance in the *Roland* or any other *chanson de geste.*[42] This is the result of an *a priori* conception of the quality of assonance: the scholars who hold this view consider that assonance is always exact and

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must accept that "les textes, à mesure qu'ils sont plus anciens, pourront présenter plus de traces de négligences qui appartiennent au poème primitif, tel qu'il est sorti des mains ou de la bouche de l'auteur" (p. 10).

[40]Bédier (*op. cit.,* p. 275) points out that *guant* and *demant* occur in a laisse in which the first two words in assonance, *Pinabel* and *isnel* (vvs. 3838-3839) are followed by *mais, plaiz, ait, fait, cumbatrai* (3840-3844). It may be suggested in this case, that the change [ai] > [ɛ] was in progress and that consequently variants in [ai] and [ɛ] coexisted in the language and made assonance possible both with words in [ɛ] (as *Pinabel*) and in *a* or *an* (as *leial* [v. 3847] and *guant*).

The same type of explanation applies to the words *pasme* and *blasme* which occur as well in laisses in *aC* (CV, CXXX, CXLVIII) as in laisses in *aN* (LXXXVI); for these two words, there may have existed at that time two variants: one which retained implosive -*s* and therefore was naturally incorporated in laisses in *aC,* and the other in which -*s* had disappeared, leading to the nasalization of the vowel. For this reason, *blasme* and *pasme* have not been listed here among words in *aC* occurring in laisses in *aN* or vice-versa.

There does not seem to be any example of *eC* in assonance with *eN,* which seems to indicate a difference of timbre between *eC* and *eN.* The only apparent exception in the *Roland: cent - parenz* (vvs. 3555-3556) in a laisse in *eiC,* may be explained by the fact that these two words form a couplet; it is not rare to find couplets that seem completely out of place in a particular laisse (see below, pp. 96-97 for examples).

[41]*La Chanson de Roland, commentée,* p. 274. For similar observations concerning the *Chanson de Guillaume,* see J. J. Salverda de Grave, "Observations sur le texte de la *Chanson de Guillaume,*" pp. 12-13.

[42]See Bell, *The Emergence,* p. 22; Jenkins, *La Chanson de Roland,* p. ciii; Paris and Pannier, *La Vie de Saint Alexis,* pp. 82-83; Suchier, *Les Voyelles toniques du vieux français,* p. 116; Haden and Bell, "Nasal Vowel Phonemes in French," p. 63; Martinet, "Les Voyelles nasales du français," p. 117.

never approximate.[43] For that reason, they correct all "false assonances" and the conviction that *aN* is never in assonance with *aC* arises from the study of texts "corrected" in this manner.[44] The notion of "false asson- ance," however, is meaningless as long as the rules followed by the poets are not known; this set of rules can be approximately reconstructed but, to make the result as close to reality as possible, it is necessary to start from the manuscripts without proposing as basic a "corrected" version of them. The so-called "false assonances" are too numerous to be ignored. As pointed out above (pp. 78-79), it is necessary to dis- tinguish between the cases in which the phonetic features of the vowels considered are so far apart that no assonance seems possible; and the examples of dubious assonances which may—particularly if they recur within a certain pattern—lead to conclusions different from those ob- tained from an oversimplified analysis of the data. The first case pro- vides an indication that the rules of versification followed by the poets of the *chansons de geste* were not as strict as some modern scholars believe. Among the most obvious examples of this type found in the *Roland,* are the following:[45]

laisses LXXX (v. 1017 ff.): *muntez - herbus - paienur* . . . .

CLXXII (2312 ff.): *sardonie - n'esgrunie - freindre*

- pleindre - blanche - reflambes - Moriane . . . .

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[43]Jenkins, *La Chanson de Roland,* defining "assonance," writes (p. xcix): "This agreement in vowel quality (timbre) is exact; it is not 'rough' or 'approximate' as is sometimes stated."

[44]For example, Bell, *The Emergence,* uses Jenkins' edition of the *Roland.*

[45]The same applies to other *chansons de geste* but only the *Roland* will be considered for this particular point.

CXCI (2639 ff.): *unkes - dulces - Malrise - turment* . . . .

CCIV (2855 ff.): *venuz - plurer - tenez* . . . .

CCV (2873 ff.): *plurt - reis - perruns - nevuld* . . . .

CCXIV (2990 ff.): *muet* (3rd person singular verb) -

Biterne - hanste - muntet . . . .

The second case is illustrated by Bédier who declares that most correc-

tions meant to eliminate the "false assonance" *aN* : *aC* must be rejected

on linguistic or historical grounds.[46] He points out that assonances in

aC : *aN* are too frequent to be dismissed as random mistakes:

> . . . ces altérations, causées, nous assure-t-on, par la
> distraction des scribes, n'ont pas consisté à remplacer une
> certaine voyelle, *a* oral ou *a* nasal, par une autre voyelle
> quelconque, mais, les dix-sept fois, par le son le plus voisin
> dans l'échelle des timbres vocaliques, les dix-sept fois *a*
> oral par *a* nasal, et inversement: dès lors, comment peut-on
> expliquer par de simples accidents de copie une telle régu-
> larité dans l'irrégularité? (p. 274)

Thus, while *aN* and *aC* are generally separated in assonance, they

do occur together, indicating that, although some difference was felt to

exist between them, they were still similar in some way. The separation

of *aC* and *aN* probably reflects the presence of nasality in the latter

and its absence in the former. The cases of mixing of *aC* and *aN* on the

other hand must be an indication that nasality had not changed the timbre

of *a* in a radical way when it was followed by *N*. Lote considers that

aC and *aN* were not found in assonance and concludes that the timbre of

a before *N* had changed,[47] but he adds:

> Sans doute s'agissait-il alors d'une voyelle qui possédait
> un son un peu plus aigu que notre *ã* actuel; c'est dans la
> suite—mais nous ne savons au juste à quelle époque—qu'elle
> aura pris le son grave (*a* fermé nasal) que nous lui donnons
> aujourd'hui. (pp. 166-167)

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[46]See below, Chapter VI.

[47]"La nasalisation des voyelles françaises," p. 165: "Quand

It is quite possible that the clear separation of *aC* and *aN* does reveal a certain variation of timbre for *a* before *N*. The presence of some cases of mixing indicates that such a variation must have been slight. This is supported by the descriptions of the nasal vowel *ã* given by the grammarians of the sixteenth century—according to which the velarization of *ã* occurred at a rather late period.[48]

5.6.2. *aN and eN*. Among the eighteen laisses in which *aN* and *eN* are found in free assonance, most of them can be considered as characterized by either the sequence *aN* or *eN*. Thus, in laisse XIX, there are eight words ending in *aN*, one in *eN*, and one occurrence of the word *maltalant* which seems to appear freely in assonances or rhymes in *aN* or *eN* even in texts where the separation between *aN* and *eN* is otherwise strictly observed.[49] There follows a list of other laisses displaying an obvious imbalance in favor of *eN* or *aN*:

XXII (*aN* = 1, *eN* = 6), XXX (*aN* = 3, *eN* = 7), XLVII (*aN* = 6, *eN* = 2), LXIII (*aN* = 3, *eN* = 6), LXXXV (*aN* = 8, *eN* = 4), CXXIV (*aN* = 3, *eN* = 14), CXXV (*aN* = 6, *eN* = 2), CXXXIV (*aN* = 22, *eN* = 2), CLXXXIV (*aN* = 10, *eN* = 3), CCXLIII (*aN* = 12, *eN* = 2), CCLIV (*aN* = 11, *eN* = 1). On the other

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le timbre de base, en d'autres termes le timbre oral de la voyelle nasalisée, a changé, et il a changé progressivement, l'accord avec la voyelle pure, qui ne s'était pas modifiée, est devenu impossible; alors *a* et *ã* n'ont plus assoné parce qu'ils étaient trop différents l'un de l'autre, indépendamment du fait que l'un s'accompagnait d'un souffle nasal et que l'autre ne le faisait pas."

[48]See below, Chapter VI.

[49]Paul Meyer, "*An* et *en* toniques," *Mémoires de la Société de Linguistique de Paris* 1 ([c. 1871]), p. 273, mentions a few other words which also rhyme "indifferently" in *eN* or *aN*: "Les trouvères qui opèrent la distinction, et c'est l'immense majorité, admettent cependant parmi les rimes en *ant* des mots qui, étymologiquement, devraient s'écrire par *e* et rimer en conséquence. Ce sont (si je n'en oublie point), *covant* (couvent), *dolans*, *escient*, *noient* (néant), *orient* (?), *sans* (sens), *sergans* (sergent), *talans*, *tans*."

hand, *aN* and *eN* are more regularly mixed in laisse CXXIX (6 and 5 respec-, tively), CXXXVIII (5 and 7), CLXXIV (7 and 4), CCII (11 and 7), and CCXXV (11 and 13). Thus, there are fourteen laisses in which *aN* and *eN* are not in free assonance (eleven in *aN* and three in *eN*), twelve laisses in which either *aN* or *eN* is clearly dominant and five in which *aN* and *eN* are freely and evenly mixed. This situation seems to indicate that competing variants of *eN* coexisted at the time when the *Roland* was written: on the one hand, variants of *eN* that were distinct from *aN*, on the other, variants of *eN* that were phonetically similar to *aN*. The poet of the *Roland* must have held as preferable the pronunciation of *eN* that was different from *aN*—an attitude reflected in his tendency not to mix those two sequences in assonance.

The fact that *eC* and *eN* do not occur in the same laisses suggests that no variants of *eN* were felt to be similar in timbre to *eC*: thus, all variants of *eN* were different from *eC*, while some of those variants were close enough to *aN* to allow the mixing of *eN* and *aN* in certain laisses.

5.6.3. *Le Voyage de Charlemagne*. This poem of 870 verses divided into 54 laisses is in assonanced form. It is of Anglo-Norman origin[50] and although its date is quite disputed, it can be attributed to the first half of the twelfth century.[51] An analysis of its assonances yields the following results:

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[50]See Koschwitz, *Karls des Grossen Reise nach Jerusalem und Constantinopel*, 5th ed. (Leipzig, 1923), p. 1; Paul Aebischer, *Le Voyage de Charlemagne* (Paris, 1965), pp. 22-23. The analysis presented here is based on citations from this edition.

[51]See *ibid.*, pp. 26-29, for a summary of the main hypotheses concerning this problem.

1)   One laisse of nine verses in which *eN* is in assonance only with

itself (vss. 754-761)[52] e.g.,

> 756 *gent*
>
> 757 *ceenz*
>
> 758 *casemenz.*

2)   One laisse of thirty-one verses, in assonance *eN* : *aN;* twenty-two

are in *aN* and nine in *eN*; there are three isolated verses in *eN* (341,

345, 348), the remaining six examples of *eN* form one group, the verses

in *aN* form five groups of seven, three, two, five and five verses

respectively.

3)   Three laisses in assonance *eN* : *aN* : *aiN* (vss. 76-97, 259-298,

469-483):

a) In verses 76-97, there is one isolated verse in *aN* (85),

two groups of four and nine verses in *aN*—the latter containing a verse

in *aiN* (93: *plain*);[53] there are also three groups of three, two and

three verses in *eN* respectively.

b) Verses 259-298 reveal thirty-six verses in *aN* : *aN* interrupted

by two verses in *eN* (296: *adreceement*, 297: *tent*).[54] There are three

verses in *aiN*: *main* (295) is in assonance with *adreceement* (296), while

the other two examples of *aiN* are in assonance with *aN*:

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[52]Verses 754 and 755 read as follows in the manuscript:
        Si ad dit a ses humes Mal gabement ad ci
        Par le fei que si dei nen est bel ne gentilz
and Aebischer gives them as:
        Si ad dit a ses humes: "Ci ad mal gabement!
        Par la fei que vus dei, ne m'en est bel ne gent . . . ."

[53]Koschwitz supplies the reading *plain grant*, and Aebischer
indicates it as follows: *plain [grant]*.

[54]In Koschwitz's and Aebischer's adaptations a third verse in *eN*
occurs (v. 266: *l'aiglenz*). In the manuscript, among verses in *aN*,
lines 265 and 266 are in assonance with *au*:

284 *arant*   293 *estant*

285 *main*   294 *grizain.*

286 *amblant*

c) In verses 469-483, thirteen verses in *aN* : *aiN* are followed by two verses in *eN*.[55] There is one verse in *aiN* in assonance with *aN*:

271 *Olivant*

472 *plain*

473 *bruant.*

4)   One feminine laisse in assonance *aN* : *aiN* : *eiN* : *eN*; *aN* and *aiN* are in direct assonance, e.g., in

784 *cumpaines*

785 *deplaindre*

786 *France*

eiN is in direct assonance with *aiN* and *eN*:

792 *plaines*

793 *pleines*

794 *descendre*

Trouent vergers plantez de pins e de lorers beaus
La rose i est florie li alburs e li glazaus.
This may be another indication that the rules followed by the poets were not as strict as those erected by the modern grammarians.

[55]As pointed out by Koschwitz, *Karls des Grossen Reise,* p. xxiv, it seems that "auf jeden Fall ist, wie Tir. 6, 16, und 25, das Streben nach Trennung der Ass. *en* und *an* auch hier unverkennbar, das schon durch die Existenz der einen reinen *en*-Tir. verburgt ist." Koschwitz laisses VI, XVI and XXV correspond to verses 76-97, 259-298 and 469-483 in Aebischer's edition. Bell, *The Emergence,* p. 46, seems to hold an opposite view since he points out that *aN* and *eN* are in free assonance. Paul Meyer, "*An* et *en* toniques," p. 262, also considers that *eN* and *aN* are completely mixed in the *Voyage de Charlemagne;* for an explanation of this divergence of views, see below, pp. 117-118.

5)   Three laisses in assonance of *oN* and *oC* (493-506, 565-578, 849-857):

a) in verses 493-506, after seven verses in *oN* and *oC* evenly mixed, there are seven verses in *oN*.

b) In verses 565-578, eleven verses in *oN* are interrupted by three verses in *oC*.

c) In verses 849-857, six verses in *oN* are followed by one verse in *oC* and one verse in *oN*. The grouping of verses in *oC* or in *oN*, and the fact that the larger number of verses is either in *oC* or in *oN* seem to indicate that the poet felt some difference between *oC* and *oN*.

6)   *ieC* and *ieN* are in free assonance as well as *iC*, *iN* and *uC*, *uN*.[56]

5.6.4. *The Couronnement de Louis*. This assonanced poem of 2695 verses is an anonymous *chanson de geste* of the Guillaume cycle which, according to Langlois, was written around 1130 in the eastern part of the Ile-de-France, near Picardy.[57] An analysis of its assonances yields the following results:

1)   There are five laisses in which *aN* and *eN* are in assonance: laisses I, II, XXIII, LIX and LXII. It is necessary, however, to distinguish between laisses in which one of these two endings is dominant, and laisses in which *aN* and *eN* are regularly mixed; thus, in laisse I, there are eight verses in *aN* and one in *eN*; in laisse XXIII, there are forty

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[56]See respectively:
verses 1-31, 518-530, 771-782.
verses 204-213, 365-391, 435-446, 591-601, 618-628, 629-651, 683-713, 735-743.
verses 531-539, 662-678, 744-752.

[57]See *Le Couronnement de Louis*, 2nd ed. (Paris, 1961), p. viii. The analysis presented here is based on citations from this edition.

verses in *eN*, one in *aN*, and three ending in the word *talent* (853, 870, 876).[58]

Laisse LIX does not reveal such a clear-cut pattern but its dominant ending is *aN* (fifty-five cases versus seventeen of *eN* and three verses in *talent*) and if verses in *eN* often occur individually to interrupt the groups of verses in *aN*, the resulting pattern is nevertheless one of verses in *aN* occurring in clusters. On the other hand, in laisse LXII, *aN* and *eN* are regularly mixed (four and three respectively).

2) There are only three examples of assonance in *aiN* : *aN* (or *eN*): laisse II (vvs. 13-19):

France

Charlemaine

France

n'apende

Alemaigne

Bretaigne

Toscane.

3) There is no case of assonance in *eiN* : *aiN*.

4) There are:

a) three laisses in which *oN* is found in assonance only with itself (VII: eight verses, XXVI: 108 verses, XLVIII: five verses),

b) one laisse with two verses in *oC* and eighteen verses in *oN* (XLV),

c) two laisses in which *oN* and *oC* are more evenly mixed (XLIII: *oC* = 18, *oN* = 44; LII: *oC* = 6, *oN* = 13).

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[58]See above, n. 49.

5)   *ieC* and *ieN* are in free assonance (laisses IX, XI, XXX, XXXVI,

XLIV, XLVI, LIII) as well as in *iN* and *iC* (X, XXXV, XL) and *uN* and *uC*

(XX, XXIX).

5.7. *La Vie de Saint Thomas le martyr.*

The author of this poem, Guernes de Pont-Sainte-Maxence, came from

Pont-Sainte-Maxence—whence its name—, a small village situated in the

northern part of Ile-de-France, near Picardy.[59] According to E. Walberg,

the poem was written between the years 1172 and 1174.[60] It contains 6180

verses or 1236 strophes of five mono-rhymed Alexandrine verses. Because

it is rhymed and not assonanced, it cannot provide any information on

whether any specific vowel *V* had the same timbre in the environments *C*

and *N*; on the other hand, it can cast some light on a problem raised by

the examination of earlier texts—namely the question of whether *aN* and

eN merged. It seems that for Guernes, *aN* and *eN* were two separate sounds:

there are twenty-five strophes in *aN* and sixty in *eN*. The only exception

to this clear separation is the word *assanz* (< lat. assensus) which rhymes

with *servanz, anz, rendanz, taisanz* (CCXCVII, 1484).

There is also one example of *eiN* rhyming with *aiN*, in *demaine*

(< lat. dominium), associated in strophe DCCXXXV with *saine, semaine,*

vaine, certaine.

5.8. *Summary of Assonances:* iN *and* uN

In all the early texts, *iN* and *uN* are in free assonance with *iC*

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[59]See E. Walberg, *La Vie de Saint Thomas le martyr* (Lund, 1922),
p. xviii.

[60]*Ibid.*, pp. xx-xxv.

and *uC* respectively.[61]

Most of the time, the mixing is complete, but in some cases—at least for *i*—the verses in which the vowel is followed by a nasal consonant tend to be grouped. Thus, in the *Roland*, in laisse CCLIII, six verses in *iN* are scattered among twenty verses in *iC*;[62] on the other hand, laisse XII shows six verses in *iN* and six verses in *iC*, both endings occurring in a group of four verses plus two isolated verses; in laisse XXXI, out of twelve verses, eight are in *iN* and five of them are grouped.[63]

For *ü*, in laisse CCI, the two verses in *uN* that occur besides fifteen verses in *uC* are grouped; the same is true of the three verses in *uN* occurring in laisse CCLXXXVI.[64] Such groupings may reveal a tendency of the poet to separate *iN* from *iC* (and *uN* from *uC*) on account of the nasalized character of *i* in *iN* (or *u* in *uN*). The occurrence of *iN* and *uN* in laisses in *iC* and *uC*, and particularly the cases of free mixing, seem to indicate that the basic timbre of the vowel was not altered by the added nasality.

5.8.1. *ieN*. The case of *ieN* is similar to that of *iN* and *uN*: *ieN* occurs in laisses in *ieC*, but in some cases, verses in *ieN* are grouped.[65] The basic timbre of *ie* in *ieN* must not have been altered by

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[61]Engelmann, *Ueber die Entstehung der Nasalvocale im Altfranzösischen*, p. 9, points out that there is a laisse of five verses in *uN* in *Guillaume d'Orange*; it seems to be an isolated case.

[62]Other examples of a complete mixing of *iN* and *iC* are laisses LXXVII, XCV, CXLIII.

[63]For other laisses which seem to indicate a grouping of *iN*, see: X, XXXV, CLIII.

[64]In other laisses, however, no such grouping of *uN* exists; see LXXXII, CLV.

[65]See for example laisse XVIII in the *Roland*.

nasality, which explains why *ieC* and *ieN* are found in free assonance.
On that basis, certain aspects of the distribution of *ieC* in assonance
may help determine more precisely what the nature of the diphthong in
ieN and *ieC* was.

In the *Roland*, *ieC* is as a rule kept separate in assonance from
eC; Bédier points out that the laisses "construites soit sur l'assonance
-*e*, soit sur l'assonance -*ié*, comptent ensemble 880 vers, desquels 20
seulement violent à l'assonance la loi de Bartsch."[66] These twenty
violations of Bartsch's Law cannot be ignored, however, and Bédier
demonstrates that the attempts to supply corrections have generally
destroyed the original meaning or have introduced inconsistencies in the
vocabulary of the author, even when the "incorrect" readings were common
to several manuscripts *(loc. cit.)*. In *Floovant*, the word *paiens*, which
is found in assonance with words in *ieC*, also occurs once in a laisse in
aN:

948	*cerchié*	1810	*mescreanz*
949	*paiens*	1811	*paiens*
950	*Richier*	1812	*avant*

Bédier also points out several cases in which the word *faillir*
is in assonance with words like *chevalier* (p. 294); he gives the example
of verses 799-801:

> Dist l'arcevesque: "Jo irai, par mun chef!"
> —"Et jo od vos," ço dist li suens Gualters;
> "Hom sui Rollant, jo ne li dei faillir." (p. 294)

He remarks that the corrected versions weaken the text, the right word
being *faillir*; and he adds examples from other texts and other regions,

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[66]*La Chanson de Roland, commentée*, p. 281.

indicating a confusion between *iC* and *ieC.*

The separation in assonance between *ieN* and *eN*, *ieC* and *ieN*, which is the norm—so much so that usually the exceptions listed above are completely ignored—has been explained by postulating that *ieC* (or *ieN*) was a descending diphthong, i.e. stressed on its first mora. Lote expresses this view quite clearly and finds support for it in rhymes in *iC* - *ieC*, such as those mentioned above:

> Le fait que l'accent portait sur *i* paraît incontestable.
> En effet, dans nos premiers monuments littéraires, *amitié*
> ne pouvait s'accorder avec *bonté*. Pour qu'il en fût ainsi,
> il fallait bien évidemment que l'accent de *ié* ne fût pas
> sur le second élément de la diphtongue. A cela on peut
> sans doute riposter que des mots en -*ié* devraient alors
> avoir rimé en *i*, condition sans laquelle il serait difficile
> de se laisser convaincre. Or c'est bien ce qui s'est passé.
> Dans *Floovant*, poème du XIIe siècle, on trouve *tienent* et
> *lievent* parmi des finales en *i*, *Amis et Amiles* présente la
> série assonancée *Marie* : *desire* : *lie* : *lumiere* : *chiere* :
> *pierre* : *almosniere*; la *Dîme de Pénitence* de Jean de Journi
> associe *pitie (pitié)* et *chevalerie*, *moitie* et *vie*; on
> rencontre des accords semblables dans divers Fabliaux, puis
> vers 1300, chez Girard d'Amiens, et, tardivement encore, au
> XIVe siècle, dans *Baudoin de Sebourg.*[67]

The presence of assonances in *ieC* : *eC* and *ieN* : *eN* (or *aN*) on the other hand indicates pronunciations of *ie* in which the *second* element was stressed. This suggests that the descending diphthong *ie* in *ieN* as well as in *ieC* was becoming an ascending diphthong: variants of the two types were found side by side, those of the descending diphthong much more numerous than the others, thus indicating that the change was still in its early stages. In the cases of *ieN* becoming an ascending diphthong, stressed *e* seems to have followed the evolution

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[67]"La Nasalisation des voyelles françaises," p. 161; see also Fouché, *Phonétique historique*, II, 379; Pope, *From Latin to Modern French*, p. 192.

of *eN* then in progress and to have become *a*: *íeN* > *íêN* > *iaN*, as in the example cited from *Floovant.*

5.8.2. *oN.* The analysis presented above reveals that in the *Léger*, *oN* and *oC* are in assonance, but already in the *Alexis* one strophe in *oN* occurs while other strophes show *oN* and *oC* together. In the *Roland* the same tendency to separate *oN* and *oC* appears to be at work; this is also true of the *Voyage de Charlemagne*, and the *Couronnement de Louis.* In later *chansons de geste*, the separation of *oN* and *oC* is even more obvious: thus in *Aye d'Avignon*—ascribed by the editors to the second half of the twelfth century—*oN* is not in assonance with *oC*; in *Floovant* (end of the twelfth century) one laisse in *oC* of thirty-five verses contains one verse in *oN*: *genoilons* (v. 577), while the only laisse in *oN* contains no verse in *oC.* *Huon de Bordeaux*, for which the editor suggests the year 1229, contains eight laisses in *oN*, the word *dolour* occurring at the end of v. 7140 in laisse LXXI; in the assonanced part of *Raoul de Cambrai*—believed to have been written at the beginning of the thirteenth century—*oN* and *oC* are also kept separate.[68] Arsène Darmesteter suggests that this tendency to separate *oN* and *oC* in assonance indicates that *o* was beginning to be nasalized. So do Paris, Straka and Fouché who consider that *a* and *e* were nasalized first and *o* only later.[69] Lote rejects this view and suggests that *o* in *oN* became

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[68]See F. Guessard and P. Meyer, *Aye d'Avignon: chanson de geste* (Paris, 1861), pp. viii, 6, 8-9, 11, 13, 14-15, 21-23, 28, 29-30, etc.; Sven Andolf, *Floovant, chanson de geste du XIIe siècle* (Uppsala, 1941), p. lxxxix and laisses XX and LII; Pierre Ruelle, *Huon de Bordeaux* (Bruxelles, 1960), p. 93 and laisses XLV, IL, LXVI, LXXI, LXXIII, LXXXII, LXXXIII, LC; P. Meyer et A. Longnon, *Raoul de Cambrai: chanson de geste* (Paris, 1882), p. iv and laisses CCLX, CCLXXI, CCLXXIV, CCLXXVIII, etc.

[69]See Arsène Darmesteter, *A Historical French Grammar* (London, 1907); Paris and Pannier in their "Preface" to *Saint Alexis*, p. 82; Fouché,

"un *o* moyen nasalisé":

> L'*o* moyen ne pouvait plus assoner avec l'*o* fermé, que celui-ci
> fût ou non recouvert d'un souffle qui passait par le nez: ici
> encore c'est le timbre oral qui a été determinant et qui a
> décidé de l'accord ou du non-accord des voyelles toniques.[70]

The statements of sixteenth century grammarians—according to

which *o* followed by an intervocalic nasal consonant, and nasal *õ* had

a very close articulation—[71] make it unlikely that *oN* lowered as

early as the *Roland* and the other *chansons de geste*. In the latter,

oN is found in assonance with *oC* coming from CL *õ* and *ŭ* in free or

checked syllables, e.g., in the *Roland, baron* is in assonance with

jorn (< diŭrnus) (laisse CLXXXV) and *benediçon* with *seignors* (< seniõre)

(laisse CLXI). These two *o*'s must have been different in some way since

they develop differently: *seignors* > *seigneur, jorn* > *jour;* but they

must have presented some similarity that made it possible for them to be

found in assonance with each other as well as with *oN*.[72] Pope considers

that these two changes (*seignors* > *seigneur, jorn* > *jour*) took place at

the end of Early Old French (*op. cit.,* pp. 90, 104). Nyrop thinks the

differentiation took place later, in the thirteenth century (p. 200)—

a view also shared by Brunot (p. 152). Arsène Darmesteter and Adolphe

Hatzfeld hesitate to ascribe a particular date to this change and admit

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Phonétique historique, II, 359; Straka, "Remarques," p. 254; see also
Bell, *The Emergence,* p. 27; Jenkins, *La Chanson de Roland,* p. c (Intro-
duction).

[70]"La Nasalisation des voyelles françaises," pp. 167-168.

[71]See below, Chapter VI.

[72]Pope, *From Latin to Modern French,* p. 103, considers that GR
o diphthongized to *ou* when it was a reflex of CL *ŭ* or *õ* in a free
syllable. On the other hand, Nyrop, *Grammaire historique,* I, 198-200,
suggests that the difference must have been one of quantity; see also
Brunot, *Histoire de la langue française,* I, 152.

it took place at a period still "mal précisée."[73] As early as the *Roland*, *oN* and *oC* tended to be separated in assonance. Presumably, this reflects the difference in timbre between *oN* and *oC*, the former remaining a closed *o* while the latter becomes [u] or [ö]. If this interpretation is correct, Lote's conclusion, that a change of timbre led to the separation of *oN* and *oC* in assonance, remains valid; the change of timbre, however, affects *oC* and not *oN*.

5.8.2.(1) *Phonetic value of* oN. In the preceding paragraph, it was assumed that *oN* was pronounced as [ö] plus a following nasal consonant. This view is contrary to Pope's, and the evidence supporting it must be examined in detail. Pope considers that late in Gallo-Roman *oN* came to be pronounced [ü] on the evidence that in the *Glossary of Reichenau* (eighth century) this "closing of the *o*-sounds is indicated . . . by spellings such as *spunte, sumpnus* . . . ."[74] The spelling *o* before nasal consonants, however, is found in many words: *comparavit, donem, convenit, incontrare, monstravit, scabrones, aculionis,* etc.[75] It is therefore difficult to assess the exact value of the spelling *u*; it may have been only an orthographic variant; were it a phonetic variant, the presence of *o* indicates that not all words were affected.

What is shown by the early assonanced texts is an argument against the phonetic value [ü] for *oN*; as mentioned above, in the *Roland, baron* is found in assonance with *jorn* and *benediçons* with *seignors*; therefore *oN*

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[73]See *Le Seizième siècle en France: tableau de la littérature et de la langue,* 9th ed. (Paris, [1901?]), p. 207.

[74]*From Latin to Modern French,* p. 166.

[75]See Studer and Waters, *Historical French Reader,* pp. 14-19. The problem of spelling in connection with *o* and *u* will be examined below.

and *oC* must have been phonetically similar; and concerning *oC*, Paris and

Pannier point out that ". . . le seul fait de la bifurcation de ce son,

en français moderne . . . indique qu'à l'origine il n'était pas parfaite-

ment arrêté à l'ou . . . ,"[76] adding in the same passage:

> C'est entre *ô* long et *ou*, plus prés de l'un ou de l'autre
> suivant les provinces, que se plaçait, je n'en doute pas,
> le son qui correspond en ancien français, à *o*, *u* du latin,
> le son . . . que le moyen-âge écrit d'abord indifféremment
> *o* et *u*, puis, assez régulièrement, *u* en Angleterre, *o* en
> France, et qui, en français moderne, a donné *ou*, *eu*, *o*
> devant l'*m* et a pris devant l'*n* un son particulier.

Most scholars share Paris' view, although—as a rule—they do not explain

it. Thus, Fouché considers that the pronunciation [ŭ] for *oN* is "dia-

lectal" and reached Ile-de-France only through borrowings; E. Schwan and

D. Behrens, Suchier, Lote, Brunot, Darmesteter, Nyrop, Weerenbeck, and

Jenkins mention that, before a nasal, *o* was a closed sound, while E. and

J. Bourciez and Anglade only note that [o] and [ɔ] developed similarly

before *N*.[77]

On the other hand, the spelling *u* is frequent in the *chansons de*

geste; in *La Vie de Saint Thomas le martyr,* strophes in *on* alternate with

strophes in *un:*

. . . .

[75]See Studer and Waters, *Historical French Reader,* pp. 14-19. The
problem of spelling in connection with *o* and *u* will be examined below.

[76]"Preface" to *La Vie de Saint Alexis,* p. 66.

[77]See *Phonétique historique,* II, 360; *Grammaire de l'ancien*
français, p. 143; *Les Voyelles toniques du vieux français,* p. 121;
"La Nasalisation des voyelles françaises," p. 167; *Histoire de la langue*
française, I, 158; *A Historical French Grammar,* pp. 132-139-140;
Grammaire historique de la langue française, I, 231; "Le Système vocalique
français du XIe siècle," p. 257; *La Chanson de Roland,* p. c; *Phonétique*
française, p. 87; *Grammaire élémentaire de l'ancien français,* 5th ed.
(Paris, 1934), p. 29.

strophe V	*salvatiun*	XXIV	*sermon*
	sermun		*baron*
	raisun		*maison*
	felun		*passion*
	dampmeisun		*raison.*

The spelling *u* is found not only in the sequence *oN*, however, but occurs much more frequently in *oC*:

XXIII *frarus*

pescheür

labur

amur

seignur.

Paris explains the variations that characterize the Old French texts in this area by pointing out that after *u* had palatalized to *ü*, three vocalic sounds—[ü], [o] with a very closed quality and [ɔ]—had to be represented by two letters *u* and *o*; this situation led to fluctuations in the spelling:

> . . . les uns notèrent par *o* le son intermédiaire entre *o* et *u*, les autres le notèrent par *u*. Les deux systèmes avaient un grave inconvénient: le son *ou (ô)*, dans le premier système, se confondait pour la notation avec celui de l'*ò*, dans le second avec celui de l'*u*. On ne pouvait échapper à l'une ou à l'autre de ces deux confusions qu'en inventant un signe particulier pour ce son intermédiaire; c'est ce qu'on fit plus tard en l'exprimant par les notations réunies,—*ou*,—des deux sons entre lesquels il se plaçait.[78]

Brunot remarks that in 1288, in the *Elégie juive*, the spelling *mont* is found for *mout*; he gives other examples that also seem to indicate a confusion between *on* and *ou*, i.e. *oN* had variants in [ũn] or

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[78]"Preface" to *La Vie de Saint Alexis*, p. 62.

[ü].[79] These observations receive additional support from rhymes found in the fifteenth century; thus, Henri Chatelain points out that *monstre* is found in rhymes with *demonstre, contre* and *encontre* but also occurs with *oultre*.[80] The existence of variants in [ü] and [u] for *oN* has led certain words to develop into Mod. F. with the pronunciation [u] instead of [ö]; thus, *escarboncle* has become *escarboucle* and *convent* has become *couvent*.[81]

This situation lasts until the seventeenth century and is abundantly illustrated by the grammarians. Were it not for the existence of other variants for *oN*, it might be concluded that it was pronounced [ü] without more open variants; the permutations *on > an* and *on > o*,[82] as well as the descriptions of the grammarians of the sixteenth and seventeenth centuries, indicate that although [ü] variants for *oN* seem to have been widespread, they coexisted with a pronunciation [ö], in which *o* had a very closed articulation.[83]

5.8.3. *oiN*. In the *Roland*, the sequence *oiN* is in assonance with *oN* and *oC*:

laisse XVII: *germun*   LXX: *poign*   CXLII: *Rossillun*

luign   *raisun*   *loign*

sumunt   *duinst*

cumpaignuns.

[79]*Histoire de la langue française*, I, 334, n. 3.

[80]*Recherches sur le vers français au XVe siècle: rimes, mètres et strophes* (Paris, 1908), p. 19.

[81]See Thurot, *De la Prononciation*, II, 514-516.

[82]See *Ibid.*, pp. 446 and 516; see also Théodore Rosset, *Les Origines de la prononciation moderne étudiées au XVIIe d'après les remarques des grammairiens et les textes en patois de la banlieue parisienne* (Paris, 1911), pp. 163-166.

[83]For a more detailed account of the pronunciation of *oN* in the sixteenth century, see Chapter VI.

This indicates that the diphthong *oi* in *oiN* was stressed on its first mora. In the thirteenth century, Rutebeuf rhymes *moine* : *demaine* ("Du Sacristain et de la femme au chevalier," vvs. 235-236, 659-660); *Jordain* : *enjoin* ("Sainte Marie l'Egyptienne," vvs. 359-360); *plaindre* : *fraindre* : *poindre* : *joindre* ("Dit des Cordeliers," vvs. 33-34).[84] Thus, for Rutebeuf, *oiN* bears the stress on its second element which rhymes with *aiN*; *oiN* develops in the same way as *oiC* in which, according to Pope, "in the course of the later twelfth and thirteenth centuries the less stressed high element . . . under the influence of the lower first element, was lowered, . . . stress shifted and the first element, become the less stressed, consonantalized to ц (> w) . . . ."[85]

5.8.4. aiN *and* eiN. The analysis of the *Roland* shows that *aiN* does not assonance with *aiC*, *eiN* does not assonance with *eiC*.

5.8.4.(1) *Lack of assonances in* aiN : aiC. Bell notes that in the *Roland* there are fourteen occurrences of juxtaposed assonance of *aiC* : *aC*, and sixty-nine of *aiC* : *eC*.[86] This seems to indicate that variants existed for *aiC*; on the one hand, a diphthong stressed on its first mora which could be in assonance with *aC*, on the other hand, a monophthong which could be in assonance with *eC*—the latter case being much more frequent. There is no example of assonance in *aiN* : *eiN* and there are forty-seven cases of assonance in *aiN* : *aN*,[87] which suggests

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[84]The edition consulted is Edmont Faral and Julia Bastin, *Oeuvres complètes de Rutebeuf* (Paris, 1959).

[85]*From Latin to Modern French*, p. 195.

[86]See *The Emergence*, p. 32.

[87]Bell, *The Emergence*, p. 35, mentions only seventeen occurrences of juxtaposed assonances in *aiN* : *aN*. The discrepancy between this figure and the one given here is due to the fact that according to Bell, "the segment *i* between *a* and a following palatal consonant is considered . . . as part of the spelling of the palatal consonant" (p. 31, n. 39).

that *aiN* was a diphthong stressed on its first mora. Thus, there existed between *aiC* and *aiN* a difference in timbre and an opposition of nasalized : non-nasalized; it is not surprising that *aiC* and *aiN* were separated in assonance.

If, as stated above, there were still a few variants of *aiC* pronounced as [ai], the possibility existed for *aiC* and *aiN* to occur together in assonance and in fact, there is such a case in the *Roland: ait-main* (v.2263-2264). It seems to be the only one and this is in keeping with the small ratio of assonances in *aiC* : *aC* as compared with those in *aiC* : *eC*.

5.8.4.(2) *Lack of assonances in* eiN *:* eiC. As mentioned above, *eiN* is found in assonance only with itself. On the other hand there are six examples of assonance in *eiN* : *eN*; there is no juxtaposed assonance *eiN* : *aN*. This suggests that *eiN* can assonance with those variants of *eN* in which *e* retains its phonetic mid quality (see below, p. 117) it must be a diphthong stressed on the first mora; Pope points out that ". . . before the middle of the twelfth century *ei* had been differentiated to *oi* . . ." before non-nasal consonants.[88] This differentiation had probably started at the time of the *Roland* and the difference in timbre between *eiC* and *eiN*, along with the nasalization of the latter accounts for the lack of assonance between these two sequences.

A different stand is taken here: Mod. F. words like *châtaigne* 'chestnut', *musaraigne* 'shrew mouse', and rhymes like *retiengne* : *Charlemaine*: *remaingne* (Rutebeuf, "La Complainte de Constantinople," 126-129), *ensaigne* (< lat. insignia) : *compaigne* (*Ibid.*, 130-131) show that the *i* of the sequence *aign* did not serve only as a spelling device, but indicated a diphthong; for a study of this problem, see John E. Matzke, "The History of *ai* and *ei* in French before the Dental, Labial, and Palatal Nasals." *Publications of the Modern Language Association of America,* 14 (1906), 637-686.

[88]*From Latin to Modern French,* p. 104. Nyrop, *Grammaire historique,*

5.8.4.(3) *Assonance* aiN : eiN. Whereas in the *Roland,* *aiN* and

eiN are separated, they are found in juxtaposed assonance in *Le Voyage*

de Charlemagne; in *La Vie de Saint Thomas,* demaine (< Lat. *dominium*)

rhymes with *saine* (< Lat. *sana*) (see above, p. 104). The thirteenth

century *Roman de la Rose* rhymes *eiN* with *aiN* regularly as in:

vvs. 7057 *frein* (< Lat. *frēnum*)
     7058 *refrain* (< Lat. *refrangere*)

     7837 *plaindre* (< Lat. *plangere*)
     7838 *esteindre* (Pop. Lat. *extingere*)

     9301 *plainte* (der. of *plaindre* < Lat. *plangere*)
     9302 *ceinte* (< Lat. *cĭngere*)

   10140 *fein* (< Lat. *fēnum*)
   10141 *fain* (< Lat. *fames*)[89]

At the same time assonances in *aiN* : *aN* which were fairly common

in the *Roland* become less frequent in the *Voyage de Charlemagne* and the

Couronnement de Louis. This suggests that less and less variants [aĩn]

for *aiN* occur while more and more variants [eĩn] are found. In the

thirteenth century the merger of *aiN* and *eiN* is well advanced. Only in

the sixteenth century, however, will the resulting sound become a monoph-

thong (see Chapter VI).

I, 176, remarks that "ce passage paraît d'abord avoir eu lieu en syllabe
faible, et cela dès le Xe siècle (comp. *noieds* dans Jonal); puis, il
gagne aussi, à des époques différentes dans les différentes régions,
la syllabe forte, et au commencement du XIIIe siècle, tout *ei* s'est
changé en *oi,* prononcé *ǒi* [i], comme le montrent les assonances (joie :
voie)"; see also Brunot, *Histoire de la langue française,* I, 153.

[89]See Ernest Langlois, *Le Roman de la rose,* I and II (Paris,
1914). Langlois, I, 195, points out that "devant une nasale, la graphie
ai est presque constante à la tonique dans Ha [manuscript] pour repre-
senter *ai* et *ei.*"

5.8.5. aN *and* eN. It has been suggested above that the differ-
ence in nasality between *aN* and *aC* accounted for the usual separation of
those two sequences in assonance. The occurrence of some juxtaposed
assonances *aN* : *aC* has been interpreted as indicating that no difference
—or a slight one—existed between the timbre of *aN* and *aC*.

The clear separation in assonance of *eN* and *eC* which character-
ized the earliest texts available seems to indicate that nasalization
had altered the basic timbre of *e* as early as the ninth century.

The analysis of the *Roland, Le Voyage de Charlemagne* and the
Couronnement de Louis shows that *eN* and *aN* were in the process of merging
although they could still be separated in assonance: this suggests a
period in which variants [ĕn] and [ăn] (or perhaps [ãen]) for *eN* existed
side by side. Paul Meyer gives a list of *chansons de geste* in which *aN*
and *eN* are mixed but in different proportions: "Bien que tous ces
poèmes mêlent les rimes *an* et *en*, il ne faudrait pas croire que tous
font de ces finales un emploi indifférent."[90] The only criterion Meyer
accepts, to decide whether *aN* and *eN* are still separate for the poem
studied, is based on the observation that lines in *aN* are more frequent
than lines in *eN*:

> En français les rimes masculines en *an* sont notablement
> plus nombreuses que celles en *en* . . . ; d'où il résulte
> nécessairement que dans les tirades où ces deux finales
> sont mêlées, la première revient beaucoup plus souvent
> que la seconde. Si donc on recontre des tirades où *en*
> domine, on peut être sûr qu'.elles ne se sont point con-
> stituées ainsi fortuitement, mais que l'auteur a eu
> réellement l'intention d'exclure les finales en *an*.
> *(loc. cit.)*

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[90]"*An* et *en* toniques," p. 262.

This may be too strict a criterion, however, and it seems that in some cases, even in laisses in which *aN* is dominant the poet was trying to keep *aN* and *eN* separate, e.g., in the laisses in *eN* : *aN* of *Le Voyage de Charlemagne* (see above, pp. 100-101); Meyer considers that *"en Normandie, et, selon toute probabilité, dans les pays romans situés sous le même latitude, EN était encore distinct de AN au moment de la conquête de l'Angleterre (1066), mais l'assimilation était complète environ un siècle plus tard"* (p. 252). He points out, however, that "en dehors des chansons de geste, le mélange des rimes *an* et *en* est extrêmement rare jusqu'au XVe siècle, époque où il reparaît et s'établit définitivement dans notre versification" (p. 264); *Le Vie de Saint Thomas* (see above, p. 104) also constitutes an example of separation of *eN* and *aN*. Meyer concludes that for the period between the twelfth and the fifteenth centuries, poets separated *eN* from *aN* in their rhymes, although these two sequences were pronounced identically. The problem is to reconcile the data of the *chansons de geste* with those of the poems of the thirteenth, fourteenth and fifteenth centuries; whereas there is some evidence in a few *chansons de geste* that *aN* and *eN* were in the process of merging, they are generally kept separate in the later poems. Two types of considerations must be introduced here: the linguistic and the literary points of view. It has been stated above that Meyer's criterion for deciding whether *aN* and *eN* were merged, was too strict, and this probably explains his conviction that in the twelfth century, the merger of *aN* and *eN* is complete. Actually in most *chansons de geste*, the poets seem to strive for the separation of *aN* and *eN* in their assonances. There is no doubt that competing variants make possible the mixing of assonances in *aN* and *eN*, but the merger is

not yet complete, and there is no reason to suppose that, even though it was well on its way at the time of the *chansons de geste*, it must have been achieved a century later. Some changes stretch over a very long time-span; in this particular case, the remarks of the sixteenth century grammarians indicate that the merger was not complete before the end of that century.[91] Therefore, it seems improbable that the poets of the thirteenth, fourteenth, and fifteenth centuries separated *eN* and *aN* in their rhymes, while not distinguishing them in their pronunciation. This evidence combined with that of the sixteenth century strongly suggests that during the intervening period, there still existed some difference between *eN* and *aN*. At this point, literary considerations may help solve the problem of the apparent "regression" indicated by the clear separation of *eN* and *aN* following their regular mixing in some *chansons de geste*.[92] The rules of versification for the epic poems were sometimes quite loose;[93] in this context, it is understandable that the *jongleurs* would make use of the phonetic variants existing in the language quite freely. On the other hand, later poems came to follow stricter rules[94]—the advent of rhyme instead of assonance being one manifestation of this evolution—and the requirements of the language of poetry were probably modified accordingly; in literary circles, the old forms must have been thought "purer" than the new variants and this

[91]See below, Chapter VI.

[92]See for example Andolf, *Floovant*, laisses XIII, XVI, XVIII, XXVI, XXXI, etc.

[93]See above, p. 96, and Bédier, *La Chanson de Roland, commentée*, p. 297.

[94]Meyer talks about "la perfection de leurs rimes" (p. 275); see also Grammont, *Petit Traité de versification française*, pp. 34-35.

conservatism is reflected in the rhymes which do not, as a rule, mix *eN*
and *aN*. The situation is also complicated by the differences existing
between various dialects; e.g., Picard texts do not show any mixing
between *eN* and *aN*, and the distinction has survived in the modern Picard
patois;[95] on the other hand, the merger seems to be more advanced in the
East, in Champagne, and in the Orléanais. The *Roman de la rose* (Orléan-
ais), which does not separate *eN* and *aN* in its rhymes, furnishes, among
others, the following examples:

vvs.	2520	*vent*		87	*dormant*
	2521	*devant*		88	*durement*
	2997	*commence*		3257	*m'ament* (< Lat. ēmendāre)
	2998	*enfance*		3258	*amant*

The works of Chrétien de Troyes (who lived in the second half of
the twelfth century in Champagne)[96] are characterized by the confusion
of *eN* and *aN* which rhyme together and are most frequently represented by
the spelling *an*; the following examples are taken from *Erec et Enide*:[97]

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[95]See Charles Théodore Gossen, *Petite Grammaire de l'ancien
picard* (Paris, 1951), p. 50; see also Nyrop, *Grammaire historique*, I, 225.
The clear separation of *eN* and *aN* in *La Vie de Saint Thomas* may be due in
part to the place of origin of its author—"dans le nord de l'Ile-de-
France, non loin des confins de la Picardie"; see E. Walberg, *La Vie de
Saint Thomas le martyr*, p. xix.

H. Haase, "Das Verhalten der pikardischen und wallonischen Denkmäler
in Bezug auf *a* und *e* vor gedeckten *n*," points out that not all Picard poets
keep *aN* and *eN* strictly separate: they use "indifferent terms" (see above,
n. 49) and poetic licence ("Offenbare dichterische Freiheiten") attributable
to the influence of the literary dialect. He adds that the *chansons de
geste* may have introduced this particular characteristic in the Picard
territory; this summary of Haase's ideas is taken from Wacker, "Dialekt
und Schrifsprache," pp. 49-51, and 52, n. 1.

[96]See Jean Frappier, *Chrétien de Troyes; l'homme et l'oeuvre*
(Paris, 1957), p. 12.

[97]See Mario Roques, *Les Romans de Chrétien de Troyes* (Paris, 1955),
vol. I.

vvs. 89 *genz*   273 *desfande*   1109 *chambre*   1432 *solemant*

90 *anz*   274 *comande*   1110 *remanbre*   1433 *comant* (verb).

Thus, in Old French—with the exception of Picard—*eN* and *aN* seem to have been in the process of merging; the extent of the merger varied according to the regions and probably also to the social classes of the speakers. This sociological conditioning of the evolution of *eN* does not receive any direct empirical support from Old French texts but is inferred[98] from the situation described by the sixteenth century grammarians. Meanwhile, the historical conditioning must be examined in the light of systematic developments.

5.9. *Evolution of the Nasal Vowel Subsystem: a Functional-Structural Account*

At the end of the Gallo-Roman period, and at the beginning of Old French, the vocalic system can be represented as follows:[99]
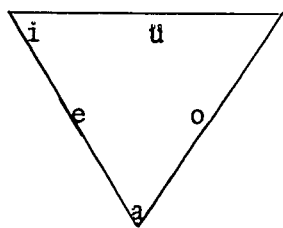
unstressed vowels   *stressed vowels*

checked   *free*

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   i   ü                  i   ü                 i   ü
   e     o                e      o             ei      ou
       a                    ε   ɔ              ie      uǫ
                             a                   ε   ɔ
```
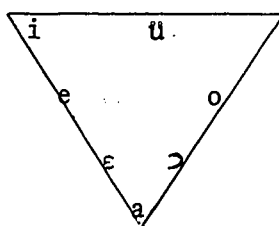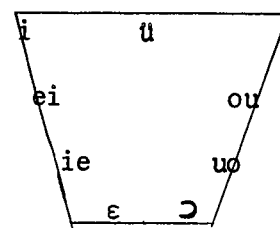
As pointed out above (pp. 85-86),   the mid vowels in stressed checked position are neutralized before nasal consonants and the nasalized vowel

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[98]See below, Chapter VI.

[99]See Eugene Dorfman, "History of the French Language" (Edmonton, 1967), pp. 104-108; Haudricourt and Juilland, *Essai pour une histoire structurale du phonétisme français*, p. 44; Luigi Romeo, *The Economy of Diphthongization in Early Romance* (The Hague, 1968), p. 105.

subsystem is reduced to the following:[100]
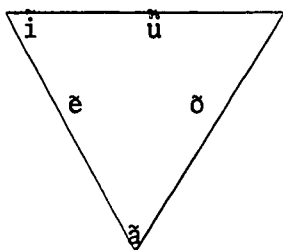
unstressed   *stressed*
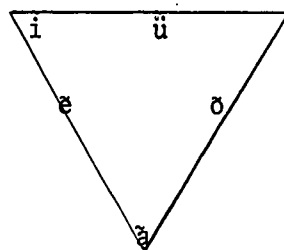
                                        checked   *free*
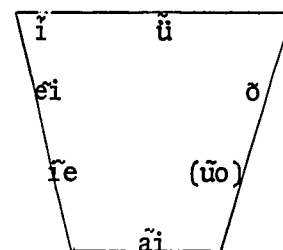
This representation can be reduced further since after the

effacement of final [ə] (< Lat. *i, e, o, u,* long and short) around the

ninth century,[101] syllables that were formerly free may become checked,

e.g.:

  aiN in *pain* (< panem) 'bread' and

  aN in *pan* (< pannum) 'flap, tail' now both occur in checked

syllables. Thus, adding the syntagmatic diphthong *oi* (see above, p. 88),

the general *VN* subsystem can be represented as follows:
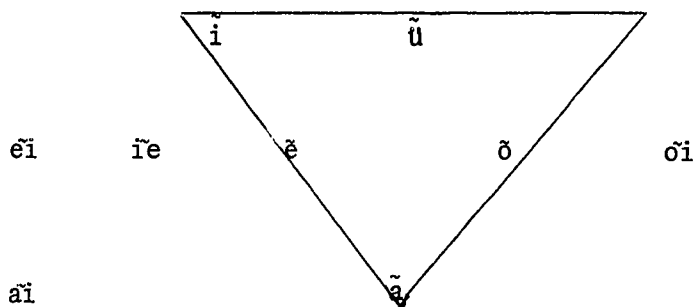
The *VN*. subsystem will be studied separately—although not

independently—from the *VC* subsystem. This separation is justified by

the fact that, until the effacement of -*N* in the sixteenth century,

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  [100]Although the non-nasal diphthong *ai* (< Lat. *a* in free
stressed syllables, e.g., *mare* > *mer*) monophthongizes early, it remains
as a diphthong before nasal consonants until much later; see above n. 23;
see also Chapter VI.

  [101]See Pope, *From Latin to Modern French,* p. 79.

VN and *VC* never occur in the same environment and therefore are never in opposition. Only within the *VN* (or the *VC*) subsystem do vowels stand in opposition to each other; therefore, a study of the structural pressures such as phonological space and equipollence, is only meaningful within one or the other subsystem.[102]

Even when the conditioning factor (-*N*) has disappeared, functional and structural studies still keep separate the oral and nasal vocalic systems.[103] One of the most basic tenets of functional and structural diachronic studies revolves around the concept of phonological space which is conveniently captured through the representation of vocalic systems, along two-dimensional vocalic quadrangles, illustrating the oppositions of degree of aperture and of tongue position (e.g., front vs. back). For this reason, the vowels of a language are separated into subsets organized along the lines of vocalic quadrangles. Thus, long vowels are separated from short vowels,[104] and nasal vowels from non-nasal vowels. This separation should not mask the interdependence of the subsystems thus isolated, but it intends to bring to light the

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[102]Bell, *The Emergence*, subscribes to this theoretical requirement, since he suggests that we study the "imbalance of *opposing* [emphasis added] phonemes between front and back vowels" and he includes what he calls the "phoneme" /æ̃/ within the *VC* subsystem (see pp. 38-40). Since -*N* did not disappear until the sixteenth century, however, vocalic nasality was not a distinctive feature in the twelfth century; although *V* was nasalized in *VN*, *VC* and *VN* were not distinguished through the opposition *V* : *Ṽ* which was redundant, but through the opposition *C* : *N*. For a similar criticism, see Martinet, "Les Voyelles nasales du français," where he discusses Haden and Bell, "Nasal Vowel Phonemes in French,"— a brief summary of Bell's dissertation.

[103]See for example Martinet's representation of the patois of Hauteville in *Economie*, pp. 86-88; see also Martinet, *La Description phonologique*, p. 84.

[104]See Haudricourt and Juilland, *Essai pour une histoire structurale*, pp. 20, 24, 26, 37, 41, 45.

make-up of the linguistic structure, with respect to the concept of phonological space.

Another argument in favor of separating *VN* and *VC* subsystems is the particular make-up and evolution of the former. Thus, in most languages where they occur, nasal vocalic subsystems have less members than their oral counterparts,[105] as a result of different developments. Synchronic studies of the generative grammar model also reflect this separation between nasal (or nasalized) and non-nasal vowels. In Schane's *French Phonology and Morphology*, the set of nasalized vowels is also distinguished from that of oral vowels, since the vowels characterized by the feature *nasal* undergo certain special rules, e.g., "[+nasal] vowels become [+low]" (p. 49).

5.9.1. *The merger* eN-aN: *phonological pressures within the core system*. The core of this *VN* subsystem—i.e. that part of the subsystem which includes the monophthongs but excludes the diphthongs —[106] is unbalanced and asymmetrical from the point of view of linguistic economy: the front series has two members ($\tilde{\imath}$, $\tilde{e}$) while the back series has only one ($\tilde{o}$), $\tilde{a}$ being simply [low], since, for that degree of aperture, there is at that time no opposition *front* : *back*. The change eN > aN which is in process in Old French can be viewed as a

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[105]See Trubetzkoy, *Principles of Phonology*, p. 119.

[106]For the term "core" and the notion of "core system," see Dorfman, "Correlation and Core-relation"; see also Martinet, *A Functional View of Language*, p. 78, n. 1.
The notion of core as used by Dorfman and Martinet is mainly applied to the consonantal system; it was first applied to vocalic systems by Dorfman in a paper read at the Summer Institute of Linguistics (University of Washington, August 13, 1959): "Is there a Vowel Core System?" See also Romeo, *The Economy of Diphthongization*, pp. 59 ff.

step towards the establishment of a more balanced subsystem in which both

the front and the back series have only one member:
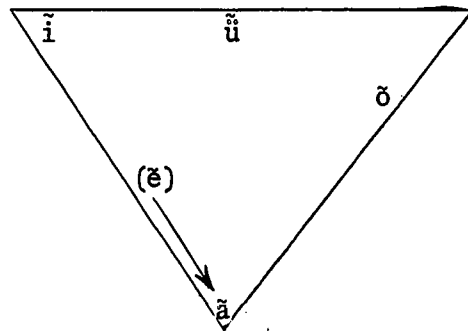
This interpretation of the change, however, cannot by itself

account for the merger *eN-aN*: the reduction of the front series to one

member—if it is accepted as a step towards a more balanced *VN* subsystem

—does not necessarily entail the merger *eN-aN*; had *aN* become [back],

the new subsystem would have had two members in the front series (*ĩ*, *ẽ*)

and two in the back (*ã* or *ɔ̃*, and *õ*). A hypothesis will be presented

here, as an attempt to show that the merger *eN-aN* may be viewed as the

result of pressures on two different linguistic levels:

a) within the system of sounds in terms of the symmetrical

arrangement of its members, as shown in the preceding paragraphs,

b) on the morphological level.

5.9.2. *Morphological pressures.* Whereas in the *langues d'oc*,

present participles in *-ent* and *-ant* have remained separate, they have

merged as *-ant* in the *oïl* dialects and that, at an early period;[107]

thus, in the *Alexis* which still distinguishes lexical items in *-ent*

from those in *-ant*, *vivant* occurs in a strophe in *aN*:

> *amfant, tant, avant, vivant, Franc* (str. II).

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[107]See Meyer, "*An* et *en* toniques," p. 257.

Therefore, the generalization of -*ant* as the mark of the present participle for all conjugations preceded the phonetic merger *eN-aN*. It is doubtful, however, that these two developments occurred completely independently. Malkiel points out that, since ". . . the gerund of *dire* is *disant*, not **diant*, . . . -*ent* must have remained in use until after the assibilation of the *c* . . . ."[108] This indicates that the merger of the present participles as -*ant* occurred at a late period since the assibilation of Latin *c* is indicated in inscriptions only in the fifth century and is not yet mentioned by grammarians of the sixth century, as pointed out by Emilio Alarcos Llorach:

> . . . la palatalización de /k/ y /g/ ante vocales anteriores
> . . . es, además, fenómeno tardío; las grafías lo atestiguan
> sólo desde el siglo V: INTCITÁMENTO, DISSESIT (por *discessit*),
> SUSSITABIT, SEPTUAZINTA, TRIENTA (=triyenta), y no lo atestigua
> ningún gramático: Procopio (en el siglo VI), que ofrece grafías
> asibiladas para /kj/, transcribe todavía /ke/ como sonido velar.[109]

The presence, on the other hand, of lexical items like *tans* (=temps), *talant* (=talent), etc., which in the earliest texts are in assonance with either *eN* or *aN*, seems to indicate that there was some overlap between the time when -*ant* became generalized as the mark of the present participle and the early stages of the phonetic merger *aN-aN*. For some time, there must have been variants in -*ent* and -*ant* for the same stem, just as, in Modern English, certain speakers sometimes hesitate between *dove* and *dived*; such variants may have played

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[108]*Development of the Latin Suffixes -antia and -entia in the Romance Languages, with Special Regard to Ibero-Romance* (Berkeley and Los Angeles, 1945), p. 58. Actually, the perfect active indicative of *dicere* being *dīxī*, the *s* in *disant* could be the result of an analogical development; *faisant* constitutes therefore a more conclusive example.

[109]*Fonología española*, pp. 235-236.

a role in providing a direction for the reduction of the two degrees of aperture of the front series to one. Thus the intersection of two types of pressures—morphological and phonological—appears to have been instrumental in the merger *eN̄-aN̄*.

5.9.3. *Further developments.* It was pointed out above that permutations *on* > *ou* revealed the existence of variants in [u] for *oN̄*. Similarly, there seem to have existed lowered variants for *iN̄* as early as the end of the thirteenth century. Certain spellings like *plin* for *plein* in the *Livre des osts du Duc de Bretagne*, *Morin* for *Morain* in a document of 1278, *Cochin* for *Cochein* in the *Rôle de la taille* (Paris, 1296) may be simply mistakes in which the first letter of the digraph *ei* or *ai* has been omitted; on the other hand the spelling *vainrent* for *vinrent* probably reflects a lower pronunciation for *iN̄*, the introduction of a new letter being less likely to be a mistake, especially since the sound suggested will be later attested throughout the language.[110]

Although no information is available for the sequence *uN̄* until the sixteenth century, Pope remarks that the spellings *heumble*, *heumblement*, *empreunte*, *eung*, occur in a document dating from 1548, which seems to indicate that there existed for *uN̄* lowered variants at the beginning of the sixteenth century and perhaps earlier.[111]

The existence of pronunciations [ẽn] for *iN̄*, [õn] for *uN̄* and [ũn] for *oN̄* suggests that the imbalance between the back and the front series was being resolved through the formation of more open variants for *iN̄*

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[110]For these examples, see Fouché, *Phonétique historique*, II, 361; see also Straka, "Remarques," pp. 258-259, n. 2.

[111]See *From Latin to Modern French*, p. 176; Rosset, *Les Origines de la prononciation moderne*, p. 177, gives some more examples such as *leune*, *pleume* for *lune*, *plume*.

and *uN*, and of less open variants for *oN*; the *VN* core subsystem of the

fourteenth, fifteenth and sixteenth centuries can be represented as

follows:[112]
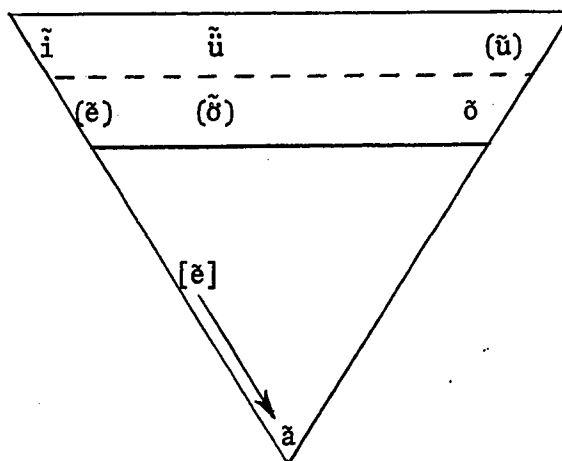
Thus, symmetry was being restored in the *VN* subsystem through the merger

of *eN* and *aN* and through readjustment of the allophonic range of *iN*, *uN*

and *oN*. There existed other factors of imbalance and asymmetry, however:

the nasal diphthongs *aiN*, *eiN*, *ieN* and *oiN*. Their evolution in terms of

the *VN* subsystem will be examined in Chapter VI.

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[112]Parentheses represent allophonic variants for the high vowels, brackets indicate a disappearing sound.

Orthographic *e* is retained in [ĕ], as well as in (ĕ), for consistency, though the two are derived from different sources: [ĕ] < *eN*, (ĕ) < *iN*.

CHAPTER VI

FROM MIDDLE FRENCH TO MODERN FRENCH

6.1. *Purpose*

From the sixteenth century on, grammarians have given descriptions of the French language which provide more direct information than that offered by the assonances and rhymes of the previous centuries. Most grammars are normative, but they have the advantage of indicating different stages of the evolution by mentioning the newer elements which are usually condemned, and the more conservative variants that are prescribed as "purer," "better" or "more elegant." There are also some grammarians who present non-prescriptive statements, and foreigners who give descriptions of the French language for their fellow-citizens, the latter being quite helpful for a phonetic study when they transcribe the French sounds in their own alphabet. In the first part of this chapter statements of sixteenth, seventeenth and eighteenth century grammarians concerning the French nasal vowels will be presented and matched with the indications given by rhyme and assonance for the previous centuries. In the second part the developments thus described will be interpreted as changes affecting the *VN* subsystem, in relation to the whole linguistic system.

6.2. *The Evidence Brought Forward by the Grammarians: the Effacement of -N*

According to Peletier,[1] pre-consonantal nasal consonants were

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[1]Most of the statements from the sixteenth, seventeenth and eighteenth century grammarians presented in this chapter are taken from Thurot, *De la Prononciation*. To avoid a cumbersome amount of footnotes, localizations of quotations from this work will be given in the text,

pronounced very weakly in 1549:

> . . . nous né prononçons quasi point la letré *n* aprés uné
> voyelé, quand elé ét acompagneé d'une tiercé letré: Commé
> an ces moz *bons, sons, conté, condicion, confiré,* e tous
> autrés téz: Là ou les Gascons, Prouuançaus e Perigourdins,
> la i prononcét apertémant.[2]

In 1584, ". . . Bèze atteste que les Français ne donnent à l'*m* et à l'*n*

qui terminent la syllabe qu'un demi-son, de telle sorte qu'on ne peut

distinguer l'*m* de l'*n* ou plutôt qu'on n'entend ni l'une ni l'autre"

(Th., II, 424). At the same time, in 1582, Henri Estienne acknowledges

the complete effacement of -*N* in pre-consonantal position and admits

that ". . . il est vrai que, quand l'*m* est suivie d'une autre consonne,

il n'est pas facile de la distinguer de l'*n*; et que l'on ne prononce pas

chams autrement que *chants*" but he maintains that ". . . il n'est pas

exact de dire que *m* finale se prononce comme *n*; il dit que l'on distingue

en quelque sorte et autant qu'on le peut *non* de *nom* . . ." (Th., II, 425).

In 1659, Chifflet clearly indicates that the nasal vowels have reached

their Mod. F. pronunciation, i.e. they are no longer followed by any nasal

consonantal segment: "Les sons de *an, en, in, on, un,* sans prononcer

l'*n*, seroient de vrayes voyelles si l'on eust inventé quelques lettres

particulieres pour les signifier" (Th., II, 421, n. 1).

Thus, by the end of the sixteenth century, with the effacement of

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the abbreviation *Th.* being followed directly by the volume (I or II) and
the page numbers; otherwise, the references will be given in footnotes.
The name of each grammarian found in the text will be followed by the
date of the work from which the quotation is taken (or a date character-
istic of that author): although this method will entail repetitions, it
will provide an idea of the chronology of the change considered. For a
list of the grammarians and description of their works, see Thurot,
De la Prononciation, I, v-lxxxvii.

[2]*Dialogue,* p. 57 (pagination as in Peletier's section); also
quoted by Thurot, *op. cit.,* II, 511.

-*N*, the nasalized vowels of OF became nasal vowel phonemes, sufficient to distinguish by themselves between words, e.g., *beau* [bo] : *bon* [bõ], *patte* [patə] : *pente* [pãtə], etc. In this chapter, however, the symbols representing nasal vowels as *VN* sequences will be kept for the sake of convenience.

6.2.1. a*N* *and* e*N*. Although the merger of these two sequences was well advanced at the beginning of the sixteenth century, it is not before the seventeenth that grammarians are as one in acknowledging complete identity for e*N* and a*N*. In 1521, Barcley does not perceive any difference betwen e*N* and a*N*: "These wordes, *commencement, omnipotent, entendement, vent*, with other lyke, be sounded with *a* as *commencemant, omnipotant, entendemant, vant* and other lyke" (Th., II, 429, n. 2).

According to Palsgrave, a*N* "shall be sounded lyke this diphthong *au* . . ." unless the non-nasal consonant following *N* is *c, g*, or *p*, in which case *a* keeps its ordinary sound; he adds that *e* in E*N* has the sound of Italian *a* (Th., II, 430, nn. 1, 3). Palsgrave's description of a*N* as [au]*N* makes his statement suspicious since none of his contemporaries expresses such a view; in particular, Peletier condemns the pronunciation [au]*N* as Norman:

Quand vous ecriuèz *embęlir, absencé, orient:* l'*e* qué vous i m*ę*tèz, sonné tout einsi qu'an *Ambassadeur, puissancé, riant.* E ne s'i fèt aucuné diferancé par ceus qui prononcét bien. Vr*ę*i *ę*t qu'an Normandié, e ancorés an Brétagné, an Anjou, e an votré Meiné . . . iz prononcét l'*a* dauant *n* un peu bien grossémant, e quasi commé s'il i auoęt *aun* par diftongué quand iz disét *Normaund, Nauntés, Aungers, lé Mauns: graund cheré*, e les autrés.[3]

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[3]*Op. cit.*, pp. 124-125; quoted also by Thurot, *De la Prononciation*, II, 430.

Meigret (1542), on the other hand, maintains that *eN* and *aN* are still distinct:

> Ou ęt le Françoęs qi prononçera la premiere de sęmblablemęnt d'un aosi grand' ouuęrture come la secŏde, q'il ne luy soęt fort penible, lourd, e de maoŭęze graçe: ę einsi de la dernięre: vourroę' tu pronŏçer ęmbler, come ambles: ę ęmplir, come, ample?[4]

Even for Meigret, however, some words in *eN* were pronounced with [ã]; he writes that there are words "ou l'a ę l'ę ouuęrt y peuuet etre indifferamment: come, prudęnt ou prudant, siance ę sięnce, la ou nou' ne diron' pas allęnt, sauęnt pour allant, sauăt . . ." (p. 10); for him, apparently, there existed variants in [ẽ] and [ã] for *eN*; some words in *eN* were pronounced with [ẽ], some with either [ẽ] or [ã] and some with [ã].[5]

Pasquier (1572) criticizes Peletier for using the spelling *an* for *eN* and describes the pronunciation of *eN* as one which "naist avec nous entre l'*a* et l'*e*, que l'on ne sçauroit en aucune façon que ce soit exprimer sur le papier" (Th., II, 432). Similar descriptions are given by Guillaume des Autels (1548), Saint Liens (1580) and Cauchie (1570). Thurot points out that Bèze (1584) "dit que l'*e* dans *temporel, j'enten, content* se prononce comme un *a*, et que, si dans *constant, content, an, en,* l'orthographe est différente, la bonne prononciation est la même ou si peu différente que l'oreille ne peut le percevoir" (Th., II, 434).

The numerous orthographic variants found at that period indicate

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[4]*Reponse de Lovis Meigret a l'Apolojíe de Iáqes Pelletier* (title in original), p. 9; this text is included with Peletier's *Dialogue* in Porter's edition (pagination as in Meigret's section).

[5]For examples of words pronounced by Meigret with [ẽ], [ẽ] or [ã], and [ã], see Eugène Gaufinez, "Notes sur le vocalisme de Meigret," in *Beitrăge zur romanischen und englischen Philologie, Festgabe für Wendelin Foerster zum 26 Oktober 1901* (Halle, 1902), pp. 410-412.

that whatever distinctions, based on the opposition *eN* : *aN*, were still

observed, they were only the remnants of a rapidly disappearing situation.

Thus, Robert Estienne (1549) acknowledges the following alternations:

"*cravanter* ou *craventer,*" "*ambassade* et *embassade,*" "*tencer,* voyez *tanser,*"

"*panser* ung malade. Voyez *penser,*" etc. (Th., II, 435). In 1541,

Sylvius criticizes the Parisians for confusing *eN* and *aN* and Bovelles

(1533) condemns the pronunciation *Quantin* for *Quentin,* *anfans* for *enfans*

(Th., II, 431). Tabourot (1587) accepts rhymes in *eN* : *aN*: "*ent* rime

fort bien auec *ant,* et n'y a aucune difference quant à la prononciation"

(Th., II, 434). Lanoue (1596), Delamothe (1592) and Paillot (1608)

express the same view whereas in 1609, Poisson still maintains that *eN*

and *aN* are distinct (Th., II, 434).[6]

The situation in the sixteenth century is probably well character-

ized by H. Estienne, whose description is thus presented by Thurot:

> . . . après avoir dit que le son de l'*e* dans *em, en* est inter-
> médiaire entre *e* et *a,* tout en approchant plutôt de l'*a,* il
> *avertit de ne pas faire comme le peuple et beaucoup d'autres*
> [emphasis added], qui prononcent *temps, dent, prudent* comme s'il
> y avait *tams, dant, prudant,* et il blâme les poètes qui font
> rimer *tems* avec *ans.* Il dit qu'il y a certains mots où *em* ne
> peut recevoir ce son intermédiaire, principalement lorsqu'il
> pourrait y avoir équivoque, comme *embler,* qui pourrait être
> confondu avec *ambler.* (Th., II, 433)

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[6]Malherbe, in his *Commentaire sur Desportes* (1606), criticizes
the latter for rhyming *répand* and *descand,* as well as *contenance* and
sentence, adding: "*Contenance* et *sentence* riment comme un four et un
moulin . . ."; quoted from C. C. Humiston, *A Comparative Study of the
Metrical Technique of Ronsard and Malherbe* (Berkeley and Los Angeles,
1941), p. 75. Humiston remarks that rhymes in *eN* : *aN* are common in
Malherbe's poetry, e.g., *courantes-différentes, résistance-pénitence,
balance-violence,* etc. (see p. 74). He concludes that Malherbe did
not object to these rhymes "because they were inharmonious either to the
ear or to the eye . . ." (p. 78); instead, he suggests that "his objec-
tion to such rimes in the poetry of Desportes was that they were not
rimes riches" (*loc. cit.*).

The gap between the language of the masses and that of the learned circles is made clear by this statement. In this perspective, the apparently paradoxical situation pointed out in Chapter V (pp.117-121) —the mixing of *aN* and *eN* in certain *chansons de geste*, and their separation in later rhymes poetry—is readily explained, as suggested in that chapter.

The merger *eN-aN* was well advanced among the lower classes at an early period; this is reflected by the unrestrained mixing of *aN* and *eN* in assonance, in some late *chansons de geste*—a genre in which the rules of versification seem to have been much looser than in the poems of the following period. The separation of *eN* and *aN* in the fourteenth and fifteenth centuries is attributable to the stricter rules imposed on poetry, but the presence of certain rhymes in *eN-aN* indicates that the conservative literary circles themselves were being gradually affected by the merger (see above, pp. 119-120). This was no doubt facilitated by writings in dialects where the merger was complete, e.g., the *Roman de la rose*. The statements of the sixteenth century grammarians, criticizing the Parisians for pronouncing *eN* and *aN* alike, as well as many poets for rhyming together *eN* and *aN*, are a good indication that the merger was by then complete among the lower layers of society and well on its way even in literary circles, with only the most conservative elements insisting on the retention of a distinction.

6.2.1.(1) *The merger of* eN *and* aN, *and the velarization of* [ă]. In his article "En/an en français," Haudricourt presents another view of the merger *eN-aN*, and remarks:

. . . dans le meilleur usage français, le parler de Paris, tous les auteurs sont d'accord, depuis ceux du XVII^e siècle

jusqu'à Rousselot pour affirmer que les mots' suivants: *Anne,*
Jeanne, damne, condamne, la manne, flamme, ont un *a* postérieur
long, tandis que *vanne* (bas lat. *venna*), *panne* (lat. *penna*),
couenne, femme ont tous un *a* anterieur. Or, ces voyelles sont
l'une et l'autre d'anciennes voyelles nasales qui se sont
dénasalisées au début du XVIIᵉ siecle. Il est donc évident
qu'à ce moment, à Paris, *a* provenant de AN était long, puisqu'il
s'est dénasalisé en *a* long, et que *a* provenant de EN était bref
puis-qu'il s'est dénasalisé en *a* bref. (pp. 41-42)

Haudricourt concludes that in the eleventh century *eN* and *aN* had merged
as far as their timbre was concerned, but the former qualitative dis-
tinction had been replaced by a quantitative one (p. 42). The same view
is endorsed by Martinet who points out that the hypothesis of a quanti-
tative distinction existing between *eN* and *aN* accounts at the same time
for the mixing of *eN* and *aN* in assonance, the poet being guided by
quality but not by quantity.[7]

The words *cabane, canne, cane, paysanne, romane, lame, dame,* all
come from words in *aN,* but they are pronounced in Mod. F. with [a] and
not with [ɑ].[8] Thus, there is no direct correspondence between the set
of Mod. F. words in [ɑnə] or [ɑmə] and that of words in *aN* (as opposed
to *eN*). Since, on the other hand, there are *a*'s which do not appear
before nasal consonants in Mod. F., it may be useful to determine
whether some common factor can be shown to occur simultaneously with the

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[7] See "Les Voyelles nasales du français," p. 119.

[8] The same view is expressed by Pope, "a, ã, ɑ, ɑ̃n in French and
Anglo-Norman," in *A miscellany of Studies in Romance Languages and
Literatures presented to Leon E. Kastner,* eds. Mary Williams and James
A. de Rothschild (Cambridge, 1932), p. 400: "In Modern French the nasal
a-sound is velar but the *a-sound* heard in most of the words in which
denasalisation has taken place is palatal, cf. the pronunciations of
femme, panne, paysanne, campagne (O.F. fãmə, pãnə, paï̈zãnə, kãpãɲə).
The pronunciation of the denasalised vowel in these words and others
similar makes it highly probable that at the period in which denasalisa-
tion of their vowel sound was taking place (the Late Middle and Early
Modern French), it was the palatal variety of the nasal low vowel that
was still in use in educated Parisian speech."

velarization of *a* before nasal and non-nasal consonants. Pierre Delattre explains the velarization of *a* as follows:

> Les cas nombreux de [ɑ] analogiques mis à part, leur évolution s'est faite en *deux temps: la postériorisation est la consé-* *quence d'un allongement* qui résulte lui-même de l'amuissement d'un son (voyelle ou consonne) contigu à l'A, vers la fin du moyen âge: animam > ànme > âme . . . . [9]

Thus, Delattre attributes the velarization of *a* in *âme* to the lengthening of that vowel resulting from the effacement of *n*; the other words for which he notes a velarized *a* before an intervocalic nasal consonant are: *âne, flâne, crâne, mâne, bédâne, infâme, blâme, pâme, damne.* [10] As in *âme*, the velarized *a* in *âne* (< Lat. asinus), *blâme* (< OF blasme), *pâme* (< OF pasme), *damne* (< Late Lat. damnare) is asso- ciated with its lengthening, due to the loss of a consonant, *s* or *m*. He points out that the velarized pronunciation of *a* and the circumflex accent in the spelling for *crâne, infâme, mâne, bédâne* are the result of analogy;[11] according to Oscar Bloch and Walther von Wartburg,[12] *bédâne* is a compound in which the first member was *bec* and the second *ane* 'canard'; in 1611, it was reformed by lexicographers as *bec d'asne,* whence the circumflex accent and the velarized pronunciation. *Crâne* did not exist in OF—which used *test*—but is a learned borrowing from the

[9]"La Question des deux 'a' en français," in Delattre, *Studies in French and Comparative Phonetics* (The Hague et al., 1966), p. 209. This article was originally published in *The French Review* 31 (1957), 141-148.

[10]Delattre in the same article (p. 214) also mentions sixteen words for which there is hesitation: *réclame, flamme, oriflamme, enflamme, proclame, diffame, déclame, clame, brame, manne, émane, glane, profane, plane, condamne, gagne.*

[11]*Ibid.,* p. 210.

[12]See their *Dictionnaire étymologique de la langue française,* 3rd ed. (Paris 1906).

Latin *cranium*, adopted in the fourteenth century; also in the fourteenth century *manes* was borrowed from Latin and became Mod. F. *mânes*.[13] *Flâner* is a dialectal borrowing, from Normandy; the velarized pronunciation of *aN* in that dialect (see Peletier's statement, above p. 131) was carried over to standard French and represented by a circumflex accent. In *infâme*, *a* was short in the sixteenth century, but could be pronounced long according to Lanoue who notes that, through use in rhyme with words in [ă], some words in [ā] have become articulated with a long *a* (see below, p. 138); in the case of *infâme*, another factor may have played a role: Meigret points out that *fame* must be pronounced with a long vowel when it means "renom" (Th., II, 690), and this pronunciation probably influenced that of all the compounds built on *fame*.

It might be argued that the restricted number of words illustrating the sequence [ɑnə] (or [ɑmə]) in Mod. F. is due to the reduction of [ɑ] in favor of [a].[14] But what the grammarians say in the sixteenth and seventeenth centuries—i.e., when the effacement of -N and of denasalization of vowels before intervocalic nasal consonants was taking place—corresponds to the present situation. Meigret (1542) remarks that in *ame*, *a* is long and Lanoue (1596) opposes *ame* and *lame*, the former being pronounced with a long vowel, the latter with a short one (Th., II, 690-691). Some of the vacillations between [a] and [ɑ] in Mod. F.—which are usually attributed to the instability of the opposition [a] : [ɑ]—are also explained by their pronunciation in the sixteenth and seventeenth centuries. Lanoue, commenting on words in *ame*, writes:

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[13]Vladimir Buben, *Influence de l'orthographe sur la prononciation du français moderne* (Bratislava, 1935), p. 43, suggests that in borrowed Latin words, the length of *a* was kept and indicated by a circumflex accent, which in turn helped impose in the pronunciation a long and velarized *a*: "L'accent circonflexe rend la longueur de l'*a* latin ou est analogique: *âcre* (empr. du lat *acrem*); *bêdâne* (*bec d'ane*, anatem 'canard', altere en *bec d'asne*); . . . *mânes* . . . ."

[14]See Delattre, "La Question des deux 'a'," p. 214.

On ne fait point ordinairement de difference entre ceste
terminaizon et celle en *ame* à la penultiesme longue et celle
en *æme*, si y en a il, comme on peut voir, prononçant bien
ces deux vers:

> Cet homme ourdit vne trame
> Dont il n'aura que du blasme,

et par leur conference auec ces deux cy, on pourra voir que
leur rime a de la rudesse:

> Cet homme ourdit vne trame
> Dont il n'aura que diffame.

Toutesfois, d'autant qu'à force de les assembler, plusieurs
de ceux cy se sont à demi acquis l'accent des autres, on
pourra faire election de ceux que la pratique enseigne qui
sonnent mieux à l'oreille pour les rimer auec ceux qui ont
la penultiesme longue; comme sont *infame, diffame, vidame,*
etc. qui se peuuent aussy prononcer *infâme, diffâme, vidâme.*
Ainsy on pourra dire sans contrainte:

> Celuy qui cherit le blasme
> Commet vn erreur infâme
> Qui lui fera perdre l'ame. (Th., II, 691-692)

In 1771, Pierre Joseph Thoulier d'Olivet gives a list of words in
which he distinguishes between long and short *a*'s in the sequences *-ame*
and *-ane:*

> AME. Toujours bref: *Dăme, estăme, răme, on le diffăme,*
> *un cerf qui brăme,* &c. Il en faut excepter *āme, infāme, blāme,*
> *il se pāme, un Brāme Indien.*
>
> Joignez-y les Aoristes, *nous aimāmes, nous chantāmes,* & de
> même sous les autres terminaisons, *nous écrivīmes, nous*
> *répondīmes, nous recūmes.*
>
> ANE. ANNE. Toujours bref: *cabăne, orgăne, pănne,* &c. Il
> en faut excepter, *āne, crāne, les Mānes, de la mānne, une mānne,*
> & *je dānne, je condānne,* qu'il seroit plus régulier d'écrire
> *damne* & *condamne,* non seulement à cause de l'étymologie, mais de
> peur que la consonne redoublée ne donne lieu de prononcer mal.[15]

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[15]*Remarques sur la langue française,* (Gèneve, 1968), pp. 74-75;
the original work was published in Paris, in 1771. Ph. Martinon,
Comment on prononce le français (Paris, 1913), p. 25, n. 1, also considers
that in Mod. F. the *a* of *brame* is palatal: "Pour ne pas trahir le poète,
mais pour ce motif seulement, il faudra prononcer *brame* avec un *a* fermé
[meaning [ɑ]] dans ces vers:

The first conjugation, first person plural, perfect endings are now pronounced with a front [a];[16] it is significant, however, that at a time prior to the loss of the feature of length in these endings, the lexical items pronounced with short a and those pronounced with long a were the same as those which are today pronounced with [a] and [ɑ]. Thus, the repartition of a's and ɑ's before intervocalic nasal consonants does not reflect the older division eN : aN but only the opposition between long and short a's brought about by the lengthening of the vowel through the loss of a following sound. Abstracting from those cases of lengthening which are independent of the processes of nasalization and denasalization—it occurs in *paste* > *pâte*—the evolution leading to *lame* with [a] and *lent* with [ã] can be represented as follows:

1) aNV
    eNV > [ã] NV ⟶ [ã]NV

2) $aN(C)$
    $eN(C)$ > [ã] $N(C)$ ⟶ [ã](C)
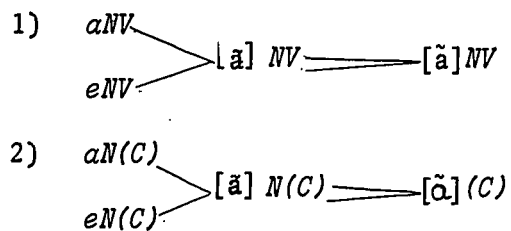
This suggests that the velarization of $ã$ is only a special case of the velarization of a: it follows the loss of a following consonant—in this case a nasal consonant;[17] on the other hand in aNV, $-N-$ remains, a is not lengthened and retains its front quality—except when a consonant

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Elle brame
Comme une âme
Qu'une flamme
Toujouts suit   (V. Hugo, *les Djinns*).

[16]See Delattre, "La Question des deux 'a'," p. 214.

[17]The same explanation is suggested by Pope, "a, ã, ɑ, ãn in French and Anglo-norman," p. 400: "The velarisation of the modern nasal vowel $ã$ is in all probability due to the lengthening induced by the absorption of the nasal consonant in the nasal vowel."

previously articulated between *a* and the nasal consonant has disappeared, lengthening *a* in the process.

The comments of the grammarians on the quality of *a* do in fact support the idea of a late velarization, as implied in the proposed explanation. In 1659, a statement by Chifflet indicates that *aN(C)* and *aNV* have the same pronunciation: "ne prononcez pas en *é* masculin . . . *grammaire* . . . Autrement les petits écoliers diront *ie porte ma grand-mere dans mon sac . . . .*" Hindret (1687) and Dangeau (1694) repeat the same admonition (Th., II, 453). At the beginning of the eighteenth century, however, Boindoin acknowledges a qualitative differ-ence between the two *a*'s:

> . . . il y a quatre voyelles qui . . . indépendamment de la quantité, sont par elles-mêmes susceptibles de trois différentes modifications, savoir d'une modification aigüe, d'une modification grave et d'une modification nazale . . . *a, tache, tâche; è, tette, tête; eu, jeune, jeûne; o, cotte, côte* . . . . (Th., II, 570)

The process of velarization of *a* may have started earlier as indicated by Plantin and Jacques Grevin who remark in 1567 that the circumflex accent ". . . se met quelquefois sur l'*a*, asçauoir lors qu'il le faut prononcer ouuertement, comme en ce mot *théâtre* et *âtre*, ausquels les vulgaires auoyent accoustumé d'adiouster vn *s* après l'*a.*"[18] Since it is at the same time that the effacement of -*N* became complete,[19] the hypothesis suggested above, that the velarization of *a* is attributable to the lengthening of the vowel due to the loss of -*N,* is supported by the chronology of the two changes which both occurred between the

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[18]Quoted by Charles Beaulieux, *Histoire de l'orthographe française* (Paris, 1927), II, 61.

[19]See above, pp. 130-131.

sixteenth and the seventeenth century. Furthermore, this hypothesis

makes it possible to account for the fact that, although vowels were

nasalized by a following nasal consonant both when the latter was

intervocalic and final, former nasalized *a* followed by -*N*- remains as

[a] in Mod. F. while *a* has become [ã], when followed by -*N*, the nasal

consonant having disappeared only in the latter case.[20]

6.2.2. iN, aiN *and* eiN. The texts studied in Chapter V showed

that *eiN* and *aiN* were in the process of merging in the thirteenth

century. In the sixteenth century the statements of the grammarians

indicate that the merger was complete. Meigret (1542) condemns the

pronunciation [ãi] for *aiN* as characteristic of the lower classes:

> Nous faisons bien souuent vsurper à la diphthongue *ai* la
> puissance de *ei*, comme en ces vocables *sainct, main,
> maintenir*; es quelz sans point de doubte nous prononçons
> la diphthongue *ei* ainsi qu'en *ceint, ceinture, peindre,
> peinture, meine, emmeine*. De sorte que, si tu te ioues
> de vouloir prononcer *ai* en ceux là, tu seras trouué lourd,
> et de manuuaise grace, et auecq aussi bonne rayson qu'est
> le menu peuple de Paris quant il prononce *main, pain*, par
> *ai*. (Th., II, 481)

Delamothe (1592) points out that ". . . *ain* se prononce *ein*, comme

ainsi, pain, main, prononcez *einsy, pein, mein . . .*" and Lanoue (1596)

remarks that in rhyme the two endings *aiN* and *eiN* "sont conioinctes,

pource qu'elles n'ont qu' vne prononciation, qui est celle en *ein*"

(Th., II, 483-484). For Poisson (1609), the lexical diffusion of the

change *aiN* > *eiN* is not yet complete: "*Ei* convient mieus à . .

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[20]The synchronic rules postulated by George W. Patterson, "A
Comparative Study of Aspects of the Vocalic Systems of Standard
French and the French Dialect Spoken at Falher, Alberta," M.A. thesis
(University of Alberta, 1969), recapitulate the historical develop-
ments posited here. Thus, Patterson considers that following nasali-
zation and some timbre adjustments such as the lowering of |ẽ| to
/ã/, "the consonant deletion rule applies, and lengthens a preceding
stressed vowel. Lengthened low vowels then retract" (p. 60).

pein, mein, sein, demein, in'umein, seint, feint, teint, creint, peint,
et semblables, car par *ai* sont alourdis. *Vain, gain, train* et tez au
contrére seroient mal ecris par *ei*, la prolassion en fet chois" (Th.,
II, 485).[21] Later grammarians, however, do not question the merger of
aiN and *eiN* but attempt to determine whether the sound for *aiN-eiN* is
still a diphthong and whether it is the same as the sound represented by
the spelling *in*.

Most statements indicate that *eiN-aiN* was still a diphthong in
the sixteenth century. Thus, according to Thurot, Sylvius (1531) "dit
qu'on prononce *ei* par un son composé de deux voyelles, et que *engein* ne
se prononce ni comme *engen*, ni comme *engin*" (II, 481). The same view is
shared by Meigret (1542), Delamothe (1592), Lanoue (1596), Duval (1604),
Masset (1606), Bernhard (1607), Mermet (1608), Spalt (1626) (see Th., II,
481-487). In 1609, Claudius Holyband indicates that *eiN-aiN* is a monoph-
thong in checked syllables but remains a diphthong before intervocalic
nasal consonants:

> Nous prononçons, ain, comme, in: ainsi donc au lieu de
> {main, maintenant, demain, saint:
> dites, min, mintenant, demin, sint:
> mais quand, e, ensuit, n, lors la voyelle, i tire plus du
> costé de, a: comme
> {balaine, sepmaine, capitaine, fontaine:
> et pour le faire plus évident, romain, certain, vilain, souverain:
> sont prononcez comme, romin, certin, vilin: mais adjoustez y, e,
> et la prononciation est totalement changée, en sorte que, romaine
> est comme vous prononcez, *vaine*, en Anglois, et autres semblables,
> mais beaucoup plus court . . . .[22]

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[21]Instead of "en fait chois," Thurot suggests the reading "en
fait fois."

[22]*The French Littelton*, introduction by M. St. Clare Byrne (Cambridge,
1953), pp. 173-175. The symbol "x" above or below a letter indicates
that that letter is not pronounced.

Van der Aa (1622) considers *eiN* articulated as a diphthong to be a, popular development: "*Ai* ou *ay* devant *n* ou *m* se prononce élégamment et à la manière de la cour comme *i*, populairement comme *ei*. Dis élégamment *min*, autrement *mein*" and Martin (1632) remarks that *aiN* and *iN* can rhyme as in *en vain* and *jardin* (Th., II, 486-487).

Most grammarians of the sixteenth century indicate a lowered pronunciation for *iN*; Cauchie (1570) says that *iN* is pronounced *ein* or *eim*; Bèze (1584) represents *faim* as *fin* and Tabourot remarks that "le Parisien prononce tous les mots terminez en *in* en *ain*" (Th., II, 477-478). The same view is also expressed by Du Val (1604), Mauconduit (1669), Hindret (1687), Dangeau (1694) and Lancelot (1660) (see Th., II, 478-480). The merger of *iN-eiN-aiN*, however, is not complete before the end of the seventeenth century, although as early as 1549, Robert Estienne indicates that for him, *iN* and *eiN-aiN* had merged in certain lexical items: "*Peindre* vient de *pingre* par mutation de *g* en *d*, par quoy semble qu'on deburoit escrire *pindre*, et a ce retire assez nostre pronontiation" (Th., II, 482-483). His son, Henri Estienne (1582) condemns rhymes in *ain* and *in* because *vain* and *pain* are more open than *vin* and *pin* but he acknowledges that the spelling *i* could be used in *pindre, findre, cindre (loc. cit.)*. Du Val (1604) criticizes the Parisian women for pronouncing "*cousaine, ragaine, voisaine,* pour *cousine,* etc." (Th., II, 479). Yet, in 1596, Lanoue still perceives a slight difference between *iN* and *aiN-eiN* whose pronunciation "n'est *quasi* [emphasis added] qu'un *i* tout simple" (Th., II, 478). Deimier (1610) condemns the merger while acknowledging that it is a feature of the lower classes:

On ne doit point rimer *humain* auec *chemin, vain* auec *diuin,*

> etc. Car c'est le proceder des poëtes licencieux de rimer
> de la sorte, acommodans leur foiblesse sur la varieté du
> commun parler des Champannois, qui prononcent *vain* au lieu
> de *vin* et *destain* au lieu de dire *destin*, comme aussi
> quelques vns du vulgaire de Paris en vsent ainsi: mais les
> damoiselles de ceste grande ville et tous autres gens de
> bon lieu qui parlent bon françois proferent ces termes *vin*,
> *diuin*, *chemin*, *destin* etc. comme ils sont escrits ordinaire-
> ment. (Th., II, 485)

Until 1680, the ranks of those who perceive a difference between

eiN-aiN and *iN* are greater than those for whom the merger is complete.

Oudin's statement (1633) is among the most explicit: "*Aim* et *ain* . . .

au milieu et à la fin des dictions se prononcent vn peu plus ouuert

qu'*im* ou *in* . . ." (Th., II, 487). Dubois (1682) also perceives a

difference of aperture: "*ain*, *aim*, *ein* en une même syllabe se prononce

un peu plus ouvert que *in*, par example *craindre*, *faim*, *peindre*, *peintre*.

Ain se prononce comme *in* en ces deux mots, *maintenant*, *ainsi*" (Th.,

II, 490). This last remark indicates that the merger which had already

affected certain words may have started in unstressed syllables. After

1680, on the other hand, the statements indicating that *aiN*, *eiN* and *iN*

represented the same pronunciation, became more numerous. In 1685,

Mourgues writes:

> La voyelle *i* et les diphthongues *ai*, *ei* ne rendent qu'un
> même son étant suivies immediatement d'une *m* ou d'une *n*
> dans la même syllabe. Ainsi on fait fort bien rimer
> ensemble *chagrin*, *souverain*, *serain*, *venin*, *certain*, *dessein*."

The same view is expressed by Hindret (1687), Audry (1689), Dangeau

(1694), de la Touche (1697) Regnier Desmarais (1705) and Buffier (1709),

although Boyer (1703), Billecoq (1711), Dumarsais (1751) and Antonini

(1753) still maintain that a difference exists between *aiN-eiN* and *iN*

(see Th., II, 490-491). Antonini's statement shows, however, that

although the merger is by then well established, conservative circles

tend to perceive and preserve a distinction:

In et *ain* ou *inte* et *ainte* n'ont pas absolument le même
son. Cependant, les Parisiens les font rimer ensemble.
On les appelle pour cette raison rimes parisiennes.
Ménage disoit qu'il ne les blâmoit pas, mais qu'il n'eût
pas voulu les employer. (Th., II, 491)

Lowered variants of *iN* may have existed as early as the end of

the thirteenth century but their scantily recorded occurrences indicate

that they were quite rare (see above, Chapter V, p. 127). In the six-

teenth century there is growing evidence that *i* in *iN* was no longer a

high vowel; at the same time confusion between *eiN-aiN* and *iN* was

becoming more frequent although most grammarians still considered *eiN-*

aiN to be more open than *iN*; by the end of the seventeenth century or

the beginning of the eighteenth, the merger *aiN-eiN-iN* was complete.[23]

Linked to the problem of the merger *aiN-eiN-iN*, is the question

of the phonetic quality of *aiN-eiN*; the texts examined in Chapter V

demonstrate that *aiN* and *eiN* merged in the thirteenth century but they

do not indicate whether the first mora of the resulting nasal diphthong

was open or closed. Suchier considers that [ẽin] became [ɛ̃in] before

eiC became *oiC* and adds: ". . . C'est pourquoi *ein* n'a pas suivi *ẹi*

dans son passage à *oi*."[24] Straka also considers that ". . . *ẽi* nasal

était un *ẽi*, avec un *ẽ* ouvert . . . ."[25] Thus for Suchier and Straka,

eiN and *aiN* merged as [ɛ̃in]. Dauzat and Rosset also consider that

words in *aiN-eiN* had an open sound which at the beginning of the sixteenth

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[23]Haudricourt "En/an en Français," points out, however, that an
orthoepist of the nineteenth century—Jules Maigne—perceives a
quantitative difference between *iN* and *aiN-eiN* (pp. 39-40); in 1928,
Henri Bauche, *Le Langage populaire* ascribes a qualitative difference to
the opposition *iN-aiN-eiN* (p. 41); see also below, pp. 164-165.

[24]*Les Voyelles toniques du vieux français*, p. 134.

[25]"Remarques," p. 261.

century was distinct from the closed sound of *pin*.[26] On the other hand, Fouché considers that *aiN* and *eiN* merged as [ẽin] which monophthongized as [ẽ] and he adds: "A une époque qui ne peut être déterminée, mais en tout cas avant la dénasalisation ẽ s'est ouvert en ẽ, et c'est ẽ que l'on prononce aujourd'hui."[27] Luquiens agrees with Suchier and Straka: "*ãĩ* becomes *ẽĩ* during the twelfth century, and then, towards the end of the period, ẽ . . . ."[28]

Fouché's view seems to be supported by Meigret's description of the *eiN-aiN* nasal diphthong in the sixteenth century:

> A cete diphthong' *ay* èt èncores sucçedé *ei* par *e* clos tèlle-
> ment qu'ajourdhuy nou' prononçons *seint, pein, mein, vein,*
> *vrey,* ao lieu dè qels vous ecriuez *sainct, pain, main, vain,*
> *vray.* Pènsez toutefoès de vou' mêmes, s'il èt rèzonable d'y
> prononcer cet *a*, ne mêmes un è ouvert: finablemènt vou'
> trouuèrez qe leur prononciation n'èt point aotre qe d'un *e*
> clos accompagné d'vn *i* en vne même syllabe tout einsi q'en
> *teindre, feindre.* (Th., II, 482).

This, however, seems to be a normative description since Meigret condemns "le menu peuple de Paris quant il prononce *main, pain* par *ai*" (Th., II, 481). Baïf and Rambaud (1574 & 1578) also indicate a closed pronunciation for *eiN-aiN* (Th., II, 482).[29]

On the other hand, Ramus (1562) describes a "diphtongue composée

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[26]See respectively *Histoire de la langue française,* p. 92, and *Les Origines de la prononciation moderne,* p. 171.

[27]*Phonétique historique,* II, p. 376.

[28]*An Introduction to Old French Phonology and Morphology,* p. 63. The same view is expressed by Pope, *From Latin to Modern French,* p. 178 and Nyrop, *Grammaire historique,* I, 226.

[29]The closed pronunciation of *eiN-aiN* as described by Rambaud may be a feature of Southern French, since he was from Marseille (see Th., I, xxxvi); the same does not apply to Baïf however; although he was born in Venice in 1530—as the son of an ambassador—he studied under Daurat with Ronsard and lived in Paris (see Th., I, xxxv).

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> *vray.* Pènsez toutefoès de vou' mêmes, s'il èt rèzonable d'y
> prononcer cet *a,* ne mêmes un è ouvert: finablemènt vou'
> trouuerez qe leur prononciation n'èt point aotre qe d'un *e*
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d'*e* ouvert et d'*i* comme en *pèine, fontèine, fèindre, pèindre, crèindre*"

(Th., II, 482). According to Lanoue, ". . . le son de la diphthongue

ai (comme ordinairement on la prononce) n'est autre chose que celuy

d'vn *e* entre le masculin et le feminin . . ." (Th., II, 484). Lubin

(1609) recommends the pronunciation of *aiN* as German *ei* in *mein, dein,*

fein; and Spalt (1626) also indicates the same open pronunciation:

> *A* dans *ain* se rapproche de *e*, comme dans *pain, train, soudain,*
> *pleindre,* mais la syllabe est très brève; les Allemands pro-
> noncent bien la diphtongue *ei, feindre, esteindre,* qui est si
> fréquente dans leur langue, s'ils en suivent l'usage, seulement
> en fermant un peu plus les lèvres. (Th., II, 485, 487)

D'Aisy (1674) states that "*ain* et *ein* sonnent *èn* avec un son confus,

exemple: *pain, sein, vain, plein*"; he condemns the pronunciation [ĕ]

for *iN* and the hypercorrections of [ĩ] for *eiN* and *aiN*:

> On peut icy remarquer la mauvaise prononciation d'*en* pour
> *in* quand on prononce *vin* comme *vain* et *fin* comme *faim*.
> Il y en a qui font une faute toute contraire, prononçant
> mesmes avec affectation *in* pour *en, vain* et *faim* comme *vin*
> et *fin*, ce qui est un vice de leur province. (Th., II, 489)

Thus most grammarians in the sixteenth and seventeenth centuries describe

eiN-aiN as an open sound. The different view given by Meigret, Baïf and

Rambaud, as well as Lanoue's statement just quoted, suggest that there

coexisted more or less open variants of *eiN-aiN*; in any case, they re-

mained more open than *iN* for a long time (see above, pp. 143-145).

6.2.3. *ieN.* It has been pointed out in Chapter V that for the

Eulalie, the *Léger,* the *Alexis,* the *Roland,* etc., the sequences *ieN* and

ieC occurred together in assonance. Similarly, although most laisses

in *ie* did not contain any assonances *e-ie*, there were twenty exceptions

to Bartsch's Law in the *Roland;* moreover, some words in *ieC* were found

in assonance with words in *iC.* It was suggested that *ie* was a descending

diphthong—which explained the separation between *ieC* and *eC*, between *ieN*

and *eN*, and the assonances *ieC-iC*. The twenty cases of violation of

Bartsch's Law on the other hand, were taken as an indication that there

were a few variants of *ie* in which stress had shifted from the first to

the second element of *ie*, which had thus become an ascending diphthong

ié, or a sequence of two vowels *i+é*. The situation described by the

sixteenth century grammarians supports this interpretation. Palsgrave

(1530) attributes the pronunciation [ĩan] to the sequence *ieN*:

> This sounde *(c'est-à-dire an)* also they gyue unto *e*, though
> the nexte syllable folowynge begynne also with an other *m*
> or *n*, as *femme, tienne, sienne,* be sounded with them *famme,*
> *mianne, tianne, sianne* and so of all suche other. (Th., II,
> 449, n. 1)

Tabourot condemns this pronunciation as characteristic of the

lower classes:

> En ceste part ne se prononce par *ant*, comme les susdits, si
> ce n'est au dialecte du populace *(lisez* populaire) de Paris,
> qui dit *apartiant* au lieu d'*apartient* ains se prononce *ient*
> en vne forme de diphthongue et ne fait qu'vn monosyllabe,
> comme *bien, tien,* etc. (Th., II, 436)[30]

He points out further that ". . . quelques poètes en ont usé, mais rare-

ment, et le faut remarquer comme vne licence," and parodies the pronun-

ciation of an imaginary Parisian, saying: "Et bian bian, ie varron si

monsieur le Doyan qui a tant de moyan, ayme les citoyans, et si, à la

coustume des ancians, il leur baillera rian" (Th., II, 436). Peletier

(1549) and Baïf (1574) note by closed *e* all the words in *ieN*; Ramus

(1562) notes them by open *e*, while Meigret (1542), H. Estienne (1582)

and Bèze (1584) distinguish between words in which *eiN* is monosyllabic

and with a very closed *e*,[31] and others in which it is disyllabic and

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[30]Other grammarians expressing the same view are Saint-Liens
(1580) and Delamothe (1592); see Th., II, 437-439.

[31]According to H. Estienne, ". . . dans *chien, mien, tien, sien,*
vien, e s'unit tellement à l'*i* précédent qu'il prend presque le même son."

articulated with a more open *e*, noted *è* by Meigret. Since no phonetic

conditioning seems to correspond to this distinction (Bèze describes

chrestien [< christianus] as disyllabic and *ancien* [< antianus] as

trisyllabic),[32] and since other grammarians (Ramus and Peletier, Baïf)

also mention two different pronunciations, this is probably an indica-

tion that there existed closed and open variants of *e* for the sequence

ieN.

Thus, the situation outlined in the *Roland* is again found in the

sixteenth century. If the interpretation presented above—that the

twenty violations of Bartsch's Law in the *Roland* reveal variants of

in which stress has shifted from the first to the second element—is

correct, it is understandable that in *ié* or *j+e* before *N*, *e* will be

lowered to *a*. From the thirteenth century on, there are numerous examples

of forms like *bians* 'biens,' *chian* 'chien,' *lian* 'lien,' and of rhymes

of the type *crestiens* : *tens*.[33] Tabourot's comments suggest that this

development took place among the lower classes while in the more cultured

—and more linguistically aware—layers of society, the shift of stress

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Du Val states that ". . . ces monosyllabes *mien, tien, sien, rien, bien, chien* [are pronounced] comme s'ils estoient escris par deux *ij, miin, riin, biin, chiin.* . . ." De la Faye (1613), Godard (1620), Martin (1632), Spalt (1626) and Duez (1639) share the same view; see Thurot, II, pp. 437-440.

[32]For Chifflet (1659) the two sets of words distinguished as monosyllabic and disyllabic, are also different: "Aux monosyllabes en *ien* comme *bien, tien, chien,* l'*e* ne s'entend pas, ou si peu que rien. Mais il faut necessairement qu'on l'entende en *tien, mien, sien, tiens, viens*"; see Th., II, p. 439.

[33]See for example the thorough listing of such forms presented by Karl Michaëlsson, "Alternances *-ien* / *-ian* en ancien français," *Studia Neophilologica* 7 (1934-1935), 18-29; see also Fouché, *Phonétique historique,* II, 380-382; Langlois, *Le Roman de la rose,* p. 212 and particularly nn. 2 and 3.

occurred only later; in fact, pronunciations like *biin* for *bien*, *chiin* for *chien* given by H. Estienne and Bèze, and their description of *ieN* as monosyllabic in those words, seem to indicate that for some lexical items the stress was still on the first element of *ie*; on the other hand, the statements of other grammarians, such as Meigret (1542), Peletier (1549), Baif (1574), Ramus (1562) and later Delamothe (1592), d'Allais (1681), Hindret (1687) and Dangeau (1694), show that disyllabic variants of *ie* were becoming more numerous.

6.2.4. *oN*. The descriptions of the grammarians concerning this nasalized vowel point to a close articulation; differences among their statements indicate that variations describable in terms of social classes and geographical regions existed at the beginning of the sixteenth century and lingered on until the end of the seventeenth when the vowel under study became more and more often described as higher mid [õ].

Meigret finds *o* sometimes "clos, comme en *tonner*, *foller*, *non*, *nom*," and in words like *tondre*, *noz*, *hoste*, *compaignon*, he considers that ". . . la prononciation est toute telle qu'en *amour*, *pour*, *courir*, *pouuoir*" (Th., I, 241). Unfortunately, this last statement is of little use since the exact phonetic nature of *ou* in *amour*, *pour*, etc. is unknown for the sixteenth century. Meigret states that he uses the spelling *ou* for closed *o* (Th., I, 241), and maintains that it is a monophthong, while Peletier criticizes him for pronouncing "*troup*, *noutrés*, *coute*, *clous*, *nous anciens*, par diftongué *ou* . . . au lieu dé *trop*, *notrés*, *coute*, *clos*, e *noz anciens*, par *o* simple . . . .[34] Nor is Peletier using the term *diphthong* instead of *digraph* as implied by Lambert Porter;[35] he shows

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[34]*Dialogue*, p. 22.

[35]*Ibid.*, introduction, p. 33.

in another passage that he considers *ou* to be the combination of two

sounds even though he admits this to be hardly perceptible:

> Qu$\not$ si tu .voulo$\not$s dir$\not$ qu$\not$ *ou* sonn$\not$ trop simpl$\not$mant pour
> $\not$tre Diftongu$\not$, la ou les deus voyϕl$\not$s doeu$\not$t $\not$tr$\not$ santi$\not$s,
> j$\not$ dî qu'aussi on les i sant: Mes pour l'afinite qu'ont
> tousjours üe ces deus voyϕl$\not$s ansamble . . . on s'an
> aperço$\not$t si peu qu$\not$ rien. [36]

Peletier's cautious justification seems to indicate that the digraph

ou did represent a monophthong [u], but was probably still perceived

and pronounced as a diphthong by some conservative speakers. This is

confirmed by Dobert's comments on the pronunciation of some speakers,

called *ouïstes* (1650);[37] he suggests adding a hyphen over the *o* of

"*chouze*, kand on prononce kazi *chouze*. Ie dis kazi . . . car ce n'èt

ni *chouze* par *ou* ny *choze* par *o* clèr, eins vn sertein entredeus que

savet treuver les biens parlans, aprochant de l'*o* de *honneste*" (Th.,

I, 246).

Other statements confirm this pronunciation of *oN*, half-way

between [õ] and [ũ]; Duez (1639) is most clear in this respect: "Das

o wird vor dem *m* vnd *n*, in einer sylbe aussgesprochen wie ein halb

Teutsch *u*, vnd ein halb *o*, vnd zusammen gleich als ein Teutsch *ung*";

Martin (1632), who also represents the pronunciation of *on* and *om* by

un for his German readers, describes this sound as obscure and similar

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[36]*Dialogue*, p. 17.

[37]As pointed out by Rosset, *Les Origines de la prononciation
moderne*, p. 67, ". . . durant tout le XVI^e siècle, la France
grammatisante avait été partagée entre *ouïstes* et *non-ouïstes*." The
ouïstes owed their name to their pronunciation in [u] instead of [o]
of words like *chose, arroser, fossé*, etc.; Beaulieux *Histoire de l'
orthographe*, I, 276, remarks: "La province, et notamment le centre
—entendu au sens le plus large du mot—semble avoir beaucoup plus
cultivé l'ouisme que Paris, la Cour mise à part."

to Latin *mundus*, nearly *munde* (Th., II, 513, n. 1 and 512, respectively).
Palsgrave earlier describes the same sound as "*almost* [emphasis added]
lyke this diphthonge *ou* and some thyng in the noose . . ." (Th., II,
512, n. 1). D'Allais (1681) suggests that *o* in *oN* "pourroit bien con-
stituer une dixiéme voyelle . . ." and he describes it as "rendant un
son mitoyen entre *o* et *ou* . . ." (Th., II, 513). Dangeau (1694) also
acknowledges this pronunciation and points out that it coexists with
that in *ou*: "Il y a des provinces dans lesquèles on prononce un *ou*
nasal et où l'on dit *boun* au lieu de dire *bon*" (Th., II, 513).

Permutations between *oN* and *ou* testify to the closed quality of
oN; thus, what was *escarboncle* for Tabourot (1587) and Lanoue (1596)
was *escarboucle* for Oudin (1633) (Th., II, 514), and has survived as
such in Mod. F. Richelet acknowledges the existence of such variants
among the people of Paris: ". . . quelques honnêtes gens parisiens, le
peuple de Paris et les fruitiéres que j'ai fait parler sur ces mots
disent *trongnon*, *trougnon* et *trognon*" (Th., II, 514). In the 1718 and
1740 editions of its dictionary, the Académie condemns *trou de chou*:
"*trou de chou* signifie *trognon de chou*. Il n'a d'usage que dans ces
phrases, *cela ne vaut pas un trou de chou*, *je n'en donnerais pas un trou
de chou*. Il est bas" (Th., II, 514). A good example of the interaction
of phonetic and socio-cultural factors is given by the development of
the word *concombre*.[38] Buffet (1668) points out that "beaucoup disent
des *cocombres*, d'autres *concombres*, *cocombres* est le meilleur"; Ménage
observes in 1672 that "les Parisiens disent plus communément *coucombre*";
in 1680, Richelet writes: "Quelques uns disent *coucombre*, mais ceux qui

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[38]Block and Wartburg, *Dictionnaire étymologique de la langue
française*, designate this term as a borrowing from Old Provençal *cocombre*
(< Lat. cŭcŭmer).

parlent le mieux sont pour *concombre*" and in 1694, the Académie adopts *concombre* (Th., II, 515). Thus, although variants of *oN* in *ou* seem to have been widely used, they became associated with the speech of the lower classes, as did the very closed pronunciation of *oN*. In 1753, Antonini condemns it as provincial: "Plusieurs prononcent *oun* pour *on*, disant *pount*, *boun* pour *pont* et *bon* . . . Cette prononciation vicieuse . . . n'est en usage que parmi le peuple de quelques provinces" (Th., II, 513) and Dumas (1733) remarks that the two pronunciations still co-exist: "Bien des gens prononcent en *oun* la nasale *on* des mots *pont*, *son*, *mon*, *ton*, etc." *(loc. cit.)*. The opposition of the learned classes and the grammarians to the pronunciation of *oN* in *ou* grows in the seventeenth century and denasalized *o*'s pronounced *ou* are denounced along with pure "ouismes" by Oudin (1633):

> L'*o* françois se prononce fort ouuert, contre l'opinion
> impertinente de ceux qui le veulent faire prononcer comme
> *ou*, quand il est devant *m* ou *n*: car ceux qui parlent bien
> ne disent iamais *houme*, *coume*, *boune*, etc., et bien que
> plusieurs disent *chouse* pour *chose*, il ne s'y faut pas
> arrester. (Th., II, 521)

Thus, from its origin, nasalized *o* seems to have had a closed pronunciation. The only nasalized vowel in the back series of the *VN* subsystem, it was phonetically higher mid and had variants of an even closer nature. Some of these high variants led to permutations *oN-ou* as in *convent-couvent*, *escarboncle-escarboucle*, in which the original form disappeared, while it subsisted in other cases *(monceau* and not *mouceau)* (Th., II, 515). These variants became associated with particular socio-cultural groups and this seems to have been a factor in the evolution of the *VN* subsystem, along with the structural pressures which will be examined below.

6.2.5. *oiN*. The statements of sixteenth century grammarians

collected by Thurot indicate that at that time, the second element of

the diphthong *oi* was following the same development as the vowel *i*. Just

as some grammarians maintain that *i* in *iN* is heard as *i* in *iC*, Meigret

(1542), Bèze (1584), Ramus (1562), Saint-Liens (1580) and H. Estienne

(1582) maintain that the *o* and the *i* are clearly heard in *oiN*. Meigret

calls attention to the difference of evolution between *oiN* and *oiC*,

censuring writers who, for the infinitive of the conjugation in *oèr*,

change the spelling to "la diphthonge *oy*: come si on prononçoèt *oy* en

voèr, *pouuoèr*, tout einsi qu'èn *royal*, *moins*, *coin*, *point*, *soin*". (Th.,

II, 491).

On the other hand, Baïf (1574) uses the spelling *oèin* for *oiN*;

Lanoue considers the diphthong *oi* to be "soupçonneuze . . . a cause que

l'*i* ne s'y fait pas bien entendre: mais la nature de l'*n* . . . en est

occasion . . ." (Th., II, 493). In 1624 an anonymous statement criticizes

the pronunciation *moens*, *poent* for *moins*, *point* *(loc. cit.)*; Chifflet

(1659) remarks that *oi* before *n* is pronounced clearly with "l'*i* et non

pas l'*e* ouvert, comme *loin*, *joindre*, etc." (Th., II, 494); Raillet (1664),

Ménage (1672), d'Aisy (1674), d'Allais (1681) no longer condemn the new

pronunciation for *oiN* which Hindret (1687) describes as follows: "La

diphthongue *oin* se prononce comme s'il y avoit un *a* devant l'*i* . . .

besoain, *moains*, *soain*, *pourpoaint*, *loain*" (Th., II, 494).

Already in the thirteenth century, as mentioned previously,[39]

there was evidence for a pronunciation [o̯ẽn] or [wẽn]. This fact is in

agreement with some of the statements that have been presented above, such

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[39]See above, Chapter V, p. 114.

as Baif's and Lanoue's for the sixteenth century. This suggests that as early as the thirteenth century, there existed some variants [o̜en] for *oiN*, although they were probably rare. The situation was the same in the sixteenth century, but the new pronunciation became more and more common in the course of the seventeenth century.

6.2.6. *uN*. No information is available for the sequence *uN* until the sixteenth century. Cauchie (1570) considers that *u* has the same sound in *vertu, fétu, chacun, emprunte, lundi* (Th., II, 543), and Tabourot (1587) makes a pun by equating the pronunciation of "Dieu tappe vn nid" with that of "Dieu t'a puny" (Th., II, 543). On the other hand, for Mod. F. *à jeun* (< Lat. jejūnus), Estienne (1549) writes "*à ieun* ou *iun*," Joubert "*à iun*," and Lanoue lists *à ieun* among rhymes in *un* (Th., II, 542-543). Duez (1639) says that the sound of *u* in *uN* is similar to that of German *ung* but somewhat obscure, probably indicating a lowered pronunciation; for Chifflet (1659) *u* in *uN* has the same sound as *u* in *uC* while in 1674 d'Aisy writes: "*Un* a toujours le son confus et l'*u* sonne *eu, vn, commun*" (Th., II, 544). D'Allais (1681), Hindret (1687), Milleran (1692), Boyer (1703) and Dangeau (1694) describe it similarly. In 1730 Saint-Pierre points out that the lowered variants of *uN* were becoming more and more frequent: "Il y aura dans peu d'anées beaucoup d'autres mots semblables [similar to *à jeun, meun*] dans la langue fransoize, parceque l'on commence à lès prononcer neglijament, quelques-uns disent déjà *breun* pour *brun*, les *euns* pour les *uns*," while only three years later Dumas presents the lowered pronunciation as the correct one:

Les uns veulent que l'*u* (dans *un*) y sone comme la voyelle *eu*,
d'autres pretendent qu'elle aproche plus de l'*u* pur . . .
l'*un* nazal . . . aproche plus de l'*eun* que de l'*un* pur
. . . . Ceux qui parlent bien prétendent qu'on doit prononcer
les mots *lundi, un, aucun*, etc. comme s'il y avoit *leundi, eun,*

aukeun, . . . de sorte que l'*u* pur ne se trouve jamais nazal que dans la prononciation des Gascons et de certains provinciaus. (Th., II, 545)

6.3. *The Evolution of the* VN *Subsystem from LOF to the Seventeenth Century*

It was mentioned above (Chapter V, p. 128) that the nasal diphthongs *aiN, eiN, oiN* and *ieN* constituted factors of imbalance in the *VN* subsystem posited for the fourteenth, fifteenth and sixteenth centuries. One of the developments to be considered is the monophthongization of *eiN-aiN* (henceforth *EiN*):
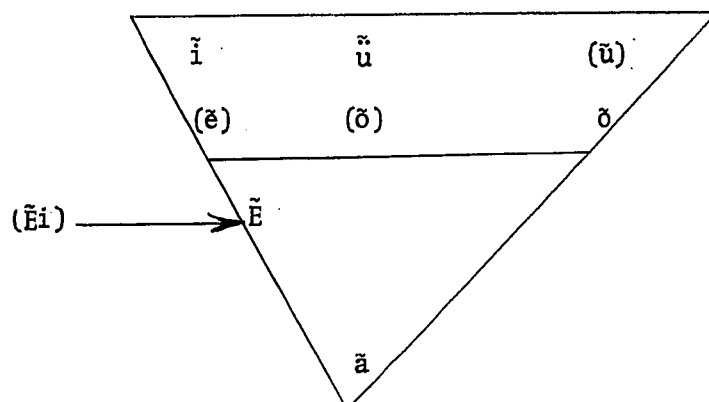
EiN became a monophthong in the course of the sixteenth century, the resulting sound $\tilde{E}$ being "mid" with higher and lower variants (see above, pp. 142-147).[40] For some conservative speakers *EiN* remained a diphthong until the end of the sixteenth century and the beginning of the seventeenth, and was kept distinct from the low variants of *iN* through the double opposition "diphthong : monophthong" and "higher : lower" (see above, pp. 145-147). For the majority of Parisian speakers, however, *EiN*

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[40]The symbols *EiN* and $\tilde{E}$ are used to differentiate between the new nasalized mid front vowel [ẽ] (< *aiN* and *eiN*) and the GR and EOF [ẽ]= *(eN)* which merged with [ã]= *(aN)*.

had become a monophthong *(EN)* in the sixteenth century and *iN* and *EN*

were in the process of merging; the *VN* subsystem of that period can be

represented as follows—the symbols in parentheses standing for variants

at the limits of the margin of variation of particular sounds:

ĩ   ũ   (ŭ)

(ĕ)   (õ)   õ

Ẽi ——————→ Ẽ

(ɛ̃)

ã
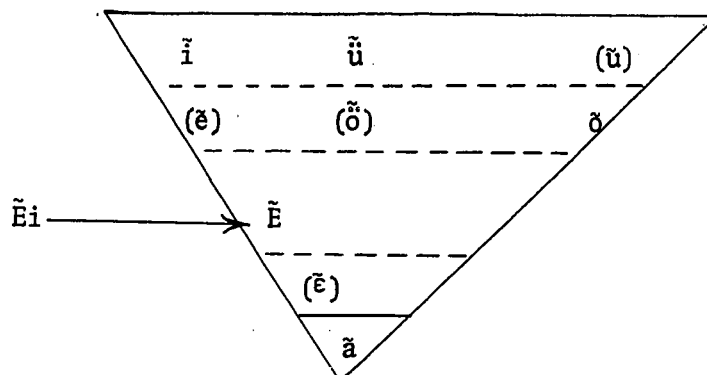
6.3.1. *The principle of structural economy, the merger* iN-EN

and the lowering of iN, uN. Articulatory economy, according to Martinet,

requires that the same aperture be used for the production of vocalic

sounds both in the front and in the back series.[41] The subsystem presented

above can then be considered uneconomical since a mid aperture is utilized

only in the front of the mouth. This calls for a reshuffling of the *VN*

subsystem, which is realized through the merger of *iN* and *EN*. This merger

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[41]See "Les Problèmes de la phonétique évolutive," *Proceedings of
the Fifth International Congress of Phonetic Sciences* (Münster, 1964), p.
92. Martinet also points out that "la tendance à l'équidistance se mani-
feste par la fréquence des systèmes où la série d'avant a plus d'unités
que la série d'arrière, c'est-à-dire où un type d'économie (tendance à
l'équidistance) l'emporte sur l'autre (identité des angles d'ouverture)"
(loc. cit.).
This seems to be the case in certain Gascon patois which have the
following *VC* and *VN* subsystems:

VC

i   u   u

e   o

ɛ

a

VN

ĩ   ũ   ŭ

ɛ̃

ã
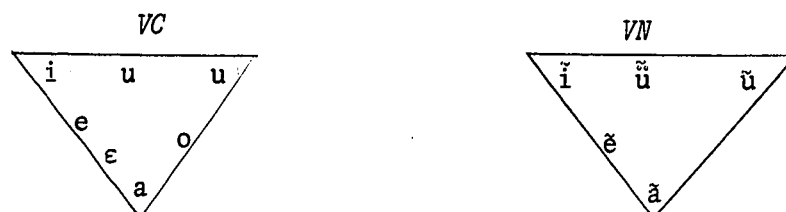
See Séguy, "Essai de cartographie phonologique," pp. 1029-1050.

which can therefore be viewed as a step toward a balanced subsystem (with one member in the front as well as in the back series) was also favored by the phonetic realizations of the two sounds in question: *iN* had lowered allophones which must have been phonetically "higher mid"; *eN* had high allophones which must also have been "higher mid" and nearly identical with the lowered variants of *iN*. Thus, both structural and phonetic pressures favored the merger. It was, in fact, complete in the sixteenth century for most Parisian speakers, although some more conservative elements of the speech community continued to observe a difference well into the seventeenth century.

The merger of *iN* and *eN* was realized through the adoption of the low variants of *iN*, and at the same time, the low variants of its equipollent partners,[42] [õ] and [ŏ], also became generalized. Thus, the whole change may be viewed as:

1) a rearrangement of the phonemically "high" members of the *VN* subsystem *(iN, oN, uN)*, each of them having high and low variants,

2) the merger of *iN* and *eN* leading to a balanced *VN* subsystem (one low member, one member in the front, the back and the mid series),

3) the alignment of *uN* and *oN* with their equipollent partner—now *ẽ*—through effacement of their high variants and retention of their low

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[42]Trubetzkoy, *Principles of Phonology*, p. 75, defines as equipollent oppositions those "in which both members are logically equivalent, that is, they are neither considered as two degrees of one property nor as the absence or presence of a property." Equipollent vowels are equivalent as to their degree of aperture, e.g., /i/ü/u/; /e/o/; /ε/ɔ/, etc. Dorfman, "Phonology: Synchronic and Diachronic" (Edmonton, 1967), p. 94, remarks ". . . equipollence seems to be a standard requirement of vowel structures . . ." and goes on to illustrate the role of this requirement in the evolution of the CL vocalic system into that of VL. Romeo, *The Economy of Diphthongization*, p. 90, further illustrates the importance of the principle of equipollence, and points out that "there is no evidence of a vocalic phonemic paradigm stopping at the stage of

ones.[43]

The last two points, however, raise a further question: although the developments just outlined, leading to a balanced *VN* subsystem, seem to provide empirical support for Martinet's concept of structural economy, it remains to explain why the *low* variants of the pairs *iN-eN*, *üN-öN*, and *uN-oN* survived instead of the high variants: had *EiN* and *iN* merged as [ĩ], the *VN* subsystem would have been as balanced and economical as the one that did emerge in Modern French. Some factors that may have played a role in directing the change will now be examined.

6.3.2. *The reduction of the diphthongs* ie *and* oi. Both diphthongs developed into a sequence of a consonantal element ([j] or [w]) plus the nasal vowel *ẽ*, thus illustrating the pressure of equipollence. In spite of some variants in which it was descending, *ié* was already an ascending diphthong in the sixteenth century while *oi* was descending; then with *oi* becoming an ascending diphthong [wẽ], *ié* and *wé* found themselves as correlative partners sharing the common base *mid-front-nasal* for *ẽ* and *high* for the glide element, while they were opposed through the latter as *front* ([j]) versus *back* ([w]).[44] Whereas already in the thirteenth century *eiN* was sometimes found in assonance with *eN* (or even *aN*), and *oiN* with *eiN-aiN* (see above, pp. 115 and 114) the sixteenth

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type J [i.e. with a diphthong in the back series but not in the front one] in Early Romance."

[43]Bell, *The Emergence*, pp. 117-124, gives an account of the changes that led to the formation of the non-nasal vowel phoneme /ö/; he then concludes: "This phoneme /oe/ is now a candidate for nasalization, having filled a hole in the pattern already set up by /ü/ in the tenth century" (p. 124). This is probably to be understood as meaning that the presence of a non-nasal phoneme /oe/ in the vocalic system may have directed the evolution of [ü], induced by structural pressures; but the phoneme /oe/ itself cannot be "a candidate for nasalization" since it occurs in the environment -*C*.

[44]See Dorfman, "History of the French Language," p. 108.

century grammarians indicate that the change was not completed in their time and that there existed, for these two nasalized diphthongs, variants with a close second element: [iin] and [oin] respectively. These variants coexisted with other variants stressed on the second element, i.e. articulated as sequences [j+e] and [w+e] in which the second element was more open than it had been previously; in this, the two nasalized diphthongs *ieN* and *oiN* followed very closely their non-nasalized counterparts—although with a certain delay.[45]

Thus *ieN* and *oiN* had for their second element the variants [ĩn] and [ẽn], just as *iN* had the variants [ĩn] and [ẽn]. It is suggested here that the association of *iN*, *(i)eN*, and *(o)iN* in terms of their competing variants may have helped direct the evolution of *iN* and consequently of its equipollent partners *uN* and *oN*. That the speakers did associate *iN*, *(i)eN*, and *(o)iN* is indicated by the statements of some grammarians such as Godard (1620):

> C'èt l'*i* que nous auons à la voix: bien que le mot ait un
> e dans l'écriture . . . nous disons, en parlant de vive voix,
> *Parisiin, anciin, miin, tiin, siin, viint, souuiint,* ioignant
> les deux *ii* ansamble en une même syllabe, mais de telle sorte
> qu'ils se prononcent tous deux d'une viue et vite voix. (Th.,
> II, 438)[46]

Lanoue also describes the second element of *oiN* in the same terms as *iN* (see above, p. 154). Thus, *ieN* and *oiN* underwent the same evolution

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[45]Pope, *From Latin to Modern French*, p. 192, considers that "the diphthong '*ie* passed to *je* in the course of Later Old French . . ." and provides evidence for the change *oi* > *ųe* "in the course of the later twelfth and thirteenth centuries" (p. 195). Nyrop, *Grammaire historique*, I, p. 177, attributes the change *oi* > [we] to the end of the thirteenth century; see also E. and J. Bourciez, *Phonétique française*, pp. 66 and 72.

[46]See also Du Val's, H. Estienne's and Chifflet's statements, above, p. 148, nn. 31 and 32.

as their non-nasalized counterparts *ieC* and *oiC*, developing into the

sequence [j] (or [w]) plus [ẽ]. They reinforced the position of $\tilde{E}$ as a

mid nasal vowel; hence the coexistence of variants with a closed second

component ([ĩn]), and others with a more open second component ([ẽn]),

followed by the generalization of the latter, probably played a role in

channeling the structural pressures posited above in a specific direc-

tion: the merger *iN-eN* as [ẽ]. If this interpretation is correct, this

particular development illustrates the interdependence of linguistic

subsystems: the evolution of *ie* and *oi* identical before -*C* and -*N* seems

to have been instrumental in providing a direction for the evolution of

the *VN* subsystem.

6.3.3. *The velarization of* a. It has been suggested above (pp.

134-141) that the velarization of a followed the lengthening of the

vowel, which resulted from the loss of a following consonant. This con-

stitutes a phonetic description of the change [a] > [ɑ]. It remains to show

what in the French vocalic system of that period made it possible.

That quantitative differences existed for all vowels is abundantly

attested by the grammarians. Hindret (1687) distinguishes between *un lis*

and *un lit*, *tasche* and *tache*, *saut* and *sot*, *nous fusme* and *il fume*, *tu*

cours and *cour*, *beauté* and *boté* (Th., II, 571). Harduin (1757) notes

that "*i*, *u* et *ou* sont longs dans *dîme*, *bûche*, *croûte*. Si vous les y

faites brefs, ainsi qu'ils doivent l'être dans *rime*, *ruche*, *doute*, vous

prononcez inexactement, sans rien changer pourtant à la qualité de ces

sons" (Th., II, 571).

Quantitative differences were not very clear, however, as indicated

by rhymes and the statements of some grammarians; thus, in 1567, Plantin

writes that "le langage françois ne recognoit aucun accent ni aucunes

syllabes. longues ou breues". (Th., II, 566). Although some grammarians

contend that there exist quantitative differences among the French

vowels (see Th., II, 568-571), these differences seem to have been more

or less dependent on the tempo of speech, as suggested by Lartigaut

(1669):

> An bone gramêre francêze, il n'y a ni longues ni brèves; et
> si l'on alonge un peu le son des voyèles an prononsant, cela
> dèpant de la manière dont on parle, vite, ou doucemant; cela
> dèpant ausi du lieu où èles se treuvent, au comancemant ou à
> la fin. (Th., II, 567)

Being determined to a certain extent by syntagmatic factors (e.g.,

position within the word) or "performance" factors (e.g., tempo of speech)

syllabic quantity did not play an important distinctive role and gradually

disappeared, being replaced by qualitative differences whenever the con-

figuration of the vocalic system made it possible. Thus, quantitative

differences were already disappearing in the seventeenth century, as

indicated by an anonymous grammarian in 1696:

> Il n'y a que les oreilles les plus délicates et les plus
> fines qui puissent être sensibles à la différence qu'il y
> a entre un *i* long et un *i* bref dans la prononciation,
> comme on peut le voir dans ces deux vers de Boileau, 'qui
> mollement résiste . . . *caprice* . . . *ravisse.*' (Th., II,
> 571)

The same grammarian adds: "On peut dire de l'*u* à peu près la même chose

que j'ai déjà dite de l'*i*."

In 1805, Domergue observes:

> . . .dans la classe ascendante un son ne rime pas avec un
> son d'une autre nature, l'*a* aigu avec l'*a* grave, l'*o* aigu
> avec l'*o* grave, l'*e* aigu avec l'*e* moyen, l'*e* moyen avec
> l'*e* grave. L'oreille défend les rimes suivantes: *patte,*
> *pâte; couronne, trône; recouvré, vrai; musette, fête . . . .*
> (Th., II, 572)

On the other hand he remarks that "dans la classe latérale *(i, u, eu, ou),*

l'oreille est moins sévère; elle permet la rime d'une voix brève avec une

voix longue, de *petite* avec *gîte*, de *partout* avec *goût"* *(loc. cit.)*.

Thus quantitative differences were eliminated for *i*, *u* (and *ü*) but they

were replaced by qualitative differences for *e*, *o* and *a*: long *e*'s

became [ɛ] (e.g., *crĭstam* > *creste* > *crete* [krɛt], long *o*'s became [o]

(Lat. *hostem* > *hoste* > *hote* [ot]), and long *a*'s assumed a velar articu-

lation. In the mid order the difference in quantity could become a

difference in quality, by taking advantage of the opposition "higher

mid : lower mid"; no such possibility existed for *i*, *u* and *ü*.

Of direct concern here is the case of the velarization of long

a's. The phonetic quality of *a* is revealed by the numerous confusions

that occurred between *a* and *e*.[47] In the sixteenth century, Ronsard

declares that "E est fort voisine de la lettre A, voire tel que souvent

sans i penser nous les confondons naturellement."[48]

The front articulation of *a* created some imbalance in the vocalic

system of that period:

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  i        u          u
 e         o          o
  ɛ        oe          ɔ
 a                 [ ]
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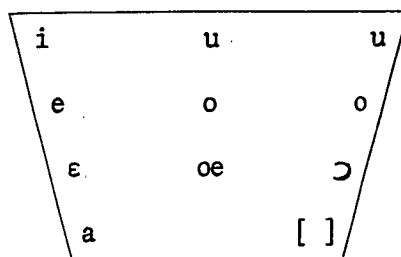
The long variants of *a* filled the hole that existed in the back series

for the low order. Nasalized *a* lengthened by the loss of the following

nasal consonant, followed the same evolution; *oN* was characterized by a

closed articulation and no structural conflict was created by the

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[47]See Rosset, *Les Origines de la prononciation moderne*, pp. 84-85.

[48]*Ibid.*, p. 85; see also Pope, "*a*, *ã*, *a*, *ãn* in French and Anglo-Norman," p. 399.

velarization of *aN*, in the *VN* subsystem.[49]

6.3.4. *The merger* iN-EN *and the phonetic value of Modern French* /ẽ/. The statements collected at the beginning of this chapter do not all agree as to the phonetic quality of *EN*; while Lanoue characterizes it as simply "mid" (neither higher nor lower mid), Meigret describes it as a closed sound and Ramus as open. No statement, however, indicates for *EN* a degree of aperture identical to that of Mod. F. /ẽ/, i.e., a more open articulation than non-nasal /ε/. The opening of /ẽ/ seems, therefore, to be a recent development, in any case posterior to the seventeenth century. Adrien Millet points out that according to Regnier-Desmarsais (1706), *e* in front of *N* is pronounced "par *e* fermé dans 'peine, pleine, veine, treille, peigne, feigne, atteigne . . .'" and he concludes that "il semble bien qu'il s'agit ici d'un *e* trop peu ouvert pour mériter ce nom, moins fermé cependant que celui de *bonté*: le nom de *moyen* qui lui a déjà été donné lui conviendrait mieux."[50]

Although the merger *iN-EN* was a widespread phenomenon among the "peuple de Paris" in the course of the sixteenth century, and was illustrated by certain poets (see above, pp. 143-144), it was condemned by the grammarians for a long time, and presumably the distinction *iN-EN* was still observed in cultured circles. The difference between *iN* and *EN* was described as one of aperture, the latter being more open than the former (see above, p. 145). Haudricourt states that Jules Maigne—an orthoepist of the nineteenth century—distinguishes between words in

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[49]For a similar explanation of the elimination of quantitative differences and their replacement by qualitative oppositions, see Martinet, "Evolution contemporaine du système phonologique français," *Free University Quarterly* (Amsterdam), 7 (1959), 106-108.

[50]*Les Grammairiens et la phonétique ou l'enseignement des sons du français depuis le XVIe siècle jusqu'à nos jours* (Paris, 1933), p. 58.

iN and *EN*, which he considers different in quantity: "Pour résoudre la difficulté, il suffit d'entendre prononcer: *faim, fin, pain, pin* par une personne parlant bien le français: on n'aura plus alors de doute sur la quantité de l'un et de l'autre."[51] As late as 1928, Henri Bauche still perceives a difference—a qualitative one—between words in *iN* and *EN*:

> Des grammairiens et des traités de phonétique enseignent
> qu'il n'y a pas de différence dans les prononciations de
> *ain* et de *in*. C'est inexact. Ni en fr. de Paris, ni en
> L.P. [langage populaire], *pin* et *pain* ne se prononcent de
> façon exactement semblable. Il n'y a qu'à faire dire à
> un Parisien 'une forêt de pins' et 'un morceau de pain.'
> 'Pain' est plus sourd et plus profond que 'pin.' Et les lèvres s'
> ouvrent plus pour dire 'pain' que pour dire 'pin.'[52]

Although none of Bauche's contemporaries seems to perceive any such distinction, his statement is indicative of the persistence of the opposition. It is quite likely that the speakers who consciously rejected the merger even at a time when it was widely accepted, made use of the original opposition of degree of aperture, *iN* being phonetically [ẽ] and *EN* [ɛ̃]. In their efforts to keep the two sounds apart, they probably exaggerated the open pronunciation of *EN* (and the closed one of *iN*). This was made possible by another development—the velarization of *ã* (see above, pp. 161-164): when *ã* became articulated in the back of the mouth, the margin of variation of *Ẽ* increased and the conservative pressures tending to keep *iN* and *EN* separate made use of this new possibility, by pronouncing *EN* with a more open articulation. Finally, when the merger was complete for all speakers, the resulting sound had the open quality that it has in Mod. F. This particular development

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[51]"*En/an* en français," p. 40.

[52]*Le Langage populaire*, nouvelle [4th?] édition (Paris, 1951), p. 41, n. 1.

casts some light on the concept of "functional load" and the role it plays in linguistic evolution. The importance of the distinctive function in language is stressed by Martinet in most of his writings:

> Le postulat de base des fonctionalistes . . . est que les changements phonétiques ne se produisent pas sans égards aux besoins de la communication, et qu'un des facteurs qui peut déterminer leur direction, et même leur apparition, est la nécessité foncière d'assurer la compréhension mutuelle en conservant LES OPPOSITIONS PHONOLOGIQUES UTILES.[53]

Recent studies have shown, however, that the functional load of certain oppositions was sometimes unable to favor or hinder the merger of phonemes participating in those oppositions, and that "apparently there are motivating forces in linguistic change which can ride roughshod over any tendency to preserve cognitive distinctions."[54]

The merger of *iN* and *EN* provides evidence for the latter statement. The minimal pairs featuring the opposition *iN-EN* were not rare and—although the phrase "oppositions phonologiques utiles" remains vague—most linguists would probably agree that it constituted a "useful opposition"; among the most common words it distinguished are *pain-pin; vain-vin; plainte-plinthe; teint-thym*. These two nasal vowels, *iN* and *EN*, also occurred in many other words without, however, constituting minimal pairs: *bain, main, daim, gain, sein, rein, levain, serein, parrain, lin, matin, patin, pantin, engin, malin, coquin*, etc. Yet the lower classes merged the two sounds in the sixteenth century, i.e. soon

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[53]*Economie*, p. 49.

[54]Weinreich *et al.*, "Empirical Foundations," p. 135. King, "Functional Load and Sound Change," *Language* 43 (1967), 831-852, questions the possibility of defining "functional load in a way which makes it linguistically (and psychologically) relevant" (p. 849) and he suggests that "if it is a factor in sound change at all, [it] is one of the least important of those we know anything about" (p. 831).

after the complete monophthongization of *EiN*. On the other hand, the more conservative elements of the speech community kept the two sounds separate until much later.

These two different tempos of evolution indicate that the important factor is not "functional load" proper—since, for a given opposition, it is the same for all the speakers, no matter what their socio-cultural status—but rather the linguistic attitude of the speakers, their degree of linguistic awareness. If this interpretation is correct, any quantification of functional load is futile since, to make it useful, it would also be necessary to quantify the degree of linguistic awareness of a speech community or of portions thereof—an undertaking that does not seem possible. In most cases, the conservative attitudes of some social circles will have only a delaying action on linguistic evolution. The example examined here, however, indicates that, combined with favorable structural factors, it may also initiate changes that might not have taken place, had the evolution in question been unhindered by conservative elements.

6.3.5. *The principle of equidistance and the phonetic quality of the Modern French nasal vowels.* In his analyses centering around the concept of phonological space, Martinet writes:

> Le maintien des distinctions phonologiques implique, d'une part, ce qu'on a appelé la différenciation maxima et, d'autre part, parmi les phonèmes appartenant à une même zone articulatoire continue, comme les voyelles, ce qu'on désigne métaphoriquement comme l'équidistance entre les unités distinctives.[55]

The latter principle will be examined here in relation to the evolution of the *VN* subsystem in Mod. F.; it is described by Martinet as follows:

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[55]"Les Problèmes de la phonétique évolutive," p. 91.

> L'équidistance signifie que, dans une langue qui possède
> cinq phonèmes vocaliques, ces phonèmes seront articulés
> de telle façon qu'ils soient acoustiquement également
> distincts les uns des autres; l'équidistance est celle
> qu'on constaterait sur un diagramme qui viserait à repré-
> senter les relations acoustiques entre les phonèmes.[56]

The view taken in this study is that the phonetic quality of the Modern French nasal vowels reflects the chronology of the changes that affected the *VN* subsystem and the pressures attributable to the principle of equidistance.

It was suggested in the preceding section (6.3.4.) that conservative factors, tending to keep *iN* from merging with *EN*, led the latter to be pronounced with a more open articulation, especially when its lowering was made possible by another displacement within phonological space: the velarization of [ã]. The phonetic description of the Mod. F. nasal vowels presented in Chapter IV (p. 62) reveals that although the degree of aperture of /ẽ/ is superior to that of /ɛ/, the articulation of /õ/ is not as open as that of /ɔ/. This asymmetry between front and back series of the nasal vowel subsystem can be understood as the result of several factors that have been examined above—the tendency toward structural economy (i.e., the same degree of aperture for front and back series); the resistance of some linguistically conservative circles; and the principle of equidistance. According to the principle of structural economy, the lowering of /ẽ/ to [ɛ] should entail that of /õ/ to [ɔ]. The velar articulation of [ã], however, is an obstacle to the lowering of /õ/—at least if the principle of equidistance has any reality.

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[56]*Ibid.*, p. 92. The principle of equidistance and its role in linguistic evolution in conjunction with other structural pressures have been abundantly illustrated by Romeo, *The Economy of Diphthongization*, *passim.*

The fact that /õ/ has retained a closed articulation provides support for the principle of equidistance within phonological space.[57]

6.4. *Conclusion*

The evolution of the *VN* subsystem can be summarized as follows:

1) The asymmetry due to the presence of two members of the front series versus one in the back series is resolved by the merger *eN-aN.*

2) Further asymmetries, such as the difference in degree of aperture between *iN-uN,* and *oN,* and the emergence of a new member in the front series *(EN)* are resolved through the merger of *iN* and *eN* and the parallel lowering of equipollent partners of *iN—uN* and *oN.*

3) The loss of the final or preconsonantal nasal consonant entails the lengthening of the preceding vowel, which in the case of [ã] leads to its velarization, in conjunction with the velarization of *aC.*

4) The conservative pressure tending to prevent *iN* from merging with *EN* leads to a more open articulation of the latter and consequently of the sound resulting from the merger.

5) Whereas the velar articulation of [õ̬] allows a low articulation of /ẽ/, it prevents /õ/ from becoming more open, i.e. by aligning itself with its equipollent partner /ẽ/.

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[57]The lowering of /õ/ to a position in which it would have been articulated with the same degree of aperture as [ẽ], would have probably resulted in the confusion of /õ/ and /ã/. It is significant that the present popular developments point to a merger of those two phonemes; for this change and the merger /ẽ/-/œ̃/, see in particular Albert Valdman, "Phonologic Structure and Social Factors in French: the vowel 'un'" *The French Review* 33 (1959), 153-161; Martinet, *La Prononciation du Français contemporain* (Paris, 1945), pp. 147-150, *idem, Economie,* p. 57; Ruth Reichstein, "Etudes des variations sociales et géographiques des faits linguistiques (observations faites à Paris en 1956-1957)," *Word* 16 (1960), *passim;* Ernst Pulgram, "Trends and Predictions," in *To Honor Roman Jakobson: Essays on the Occasion of His Seventieth Birthday, 11 October 1966* (The Hague, 1967), II, 1635-1638. Since these changes are taking place at present, they will not be examined here, but should be studied in their social context along the lines defined by Labov and Weinreich *et al.*

Thus, the evolution of the *VN* subsystem seems to provide evidence
for the linguistic reality of some of the concepts presented as working
hypotheses by Martinet—in particular that of structural economy (e.g.,
the use of the same degree of aperture in the front and back series, and
consequently the elimination of holes within the *VN* subsystem), and that
of equidistance within phonological space. On the other hand, it provides
some counterevidence for the concept of functional load, even though a
certain conservatism can hinder and delay the confusion of two distinc-
tive sounds; it is suggested, however, that this particular problem is
statable not in linguistic terms, but in socio-cultural terms. Finally,
the interaction of different subsystems, linguistic levels and socio-
cultural factors, which was posited in this attempt to account for the
evolution of the French nasal vowels, points to the complexity of the
problems facing historical linguists—complexity which undoubtedly was
barely touched upon in this study, but which must be grasped in its
entirety if the actuation problem, concerned with specific reasons for
specific developments at specific times, is ever to be solved.

CHAPTER VII

CONCLUSION

The process of nasalization leading to the formation of nasal

vowel phonemes can be described as consisting of two separate

developments:

1) the assimilation of a vowel to a neighboring nasal

   consonant,

2) the loss of the nasal consonant.

The languages examined together with French indicate that phonetic

nasality persists and functions as a distinctive feature when it is

well integrated in the pattern of distribution—i.e., when it occurs

in the main morpheme positions (initial, medial and final)—and when

the loss of N is not sporadic but regular. It is suggested that the

sporadic character of the latter change in some of the languages

examined could be attributed to competing structural pressures, or to

socio-cultural factors; consequently, the loss or retention of vocalic

nasality can be viewed as a step towards a more economical system, the

outcome being conditioned by the intersection of linguistic pressures

and socio-cultural factors for each language considered.

The evolution of the French VN subsystem cannot be accounted for

in terms of the articulatory or acoustic nature of nasal vowels, as is

suggested by the observations concerning other languages and the results

or synthetic speech experiments. On the other hand, it can be accounted

for in terms of general principles of linguistic economy (paradigmatic

phonological pressures, syntagmatic factors, interaction of different

linguistic levels) at work within the context of language-specific

characteristics (the French linguistic system and the socio-cultural

make-up of the speech community).

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APPENDIX

A COMPARISON OF THE PORTUGUESE AND

FRENCH NASAL VOWEL SUBSYSTEMS

The Portuguese nasal vowel subsystem offers an enlightening

contrast with that of French. In his study of the Modern Portuguese

speech sounds, Aniceto dos Reis Gonçalves Vianna gives side by side

the following charts for the nasal and the non-nasal vowels:[1]

<table>
<tr><td colspan="4" style="text-align:center">*Non-nasal vowels*</td><td colspan="3" style="text-align:center">*Nasal vowels*</td></tr>
<tr><td></td><td>(i̯)</td><td>(u̯)</td><td></td><td>-</td><td></td><td>-</td></tr>
<tr><td>i</td><td>ę</td><td>u</td><td>ĩ</td><td>-</td><td></td><td>ũ</td></tr>
<tr><td>ê</td><td>-</td><td>o</td><td></td><td>ẽ</td><td>-</td><td>ẽ</td></tr>
<tr><td>è</td><td>ą̊</td><td>ɔ</td><td></td><td>-</td><td>ã</td><td>-</td></tr>
<tr><td></td><td>a</td><td></td><td></td><td></td><td>-</td><td></td></tr>
</table>

A striking fact in this representation concerns the smaller number

of nasal vowels. The high vowels [ĩ] and [ũ] from Latin [ī] and [ū]

have remained unaffected by nasalization as far as their basic timbre

is concerned, e.g.,

---

[1]"Essai de phonétique et de phonologie de la langue portugaise
d'après le dialecte actuel de Lisbonne," *Romania* 12 (1883), 30.
These charts are presented here in inverted fashion for the sake of
consistency.

Vianna describes ę as a mute *e*, "bien plus étouffé, bien plus
fermé, cependant que l'*e* français de *me, le*" (p. 32). The symbol ą
also indicates a vowel occurring in unstressed syllables, and which
Vianna describes as "... une voyelle neutre bien plus ouverte que
l'*e* du français *me, te, le*; moins ouverte cependant que l'*u* bref
anglais de *bud*: il est tout à fait semblable à l'*a* atone de l'anglais
about, he gave me A book" (p. 31). The symbols (i̯) and (u̯) indicate
the semi-vowels [j] and [w].

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CL *finem* > Port. *fim* [fĩ]

CL *commūnem* > Port. *commum* [ku'mũ]

Portuguese [ã] comes from VL *a* before a nasal consonant, e.g.,

CL *campum* > Port. *campo* ['kampu]

On the other hand [ẽ] and [õ] are the result of a merger:

VL [e]-[ɛ] and [o]-[ə] respectively, e.g.

CL *tĕnet* > Port. *tem* [tẽ]

CL *ĭntrāre* > Port. *entrar* [ẽnt'rar]

CL *pŏntem* > Port. *ponte* ['põnti]

CL *ŭnda* > Port. *onda* ['õndạ]

An additional fact revealed by Vianna's charts concerns the phonetic quality of the nasal vowels: whereas [ĩ] and [ũ] have the same degree of aperture as their non-nasal counterparts [i] and [u], [ẽ] and [õ] are close and thus correspond to [e] and [o] (*ê* and *ô* in Vianna's chart) and not to [ɛ] and [ə] (*ê̦* and *ô̦*); [ã] is also less open than [a]. Vianna points out that, contrary to what can be observed in French, "...en portugais les nasales *ã, ẽ, ĩ, õ, ũ* ne diffèrent que par leur nasalité des voyelles orales *a, ê, i, ô u*"; he describes [ã] as "la voyelle *ạ* nasalisée. De toutes les nasales françaises, celle qui lui ressemble le plus, c'est *un*" (p. 35). He adds that "*ã (en, emp, emb)* est un *ê* fermé nasalisé...", that "*õ (on, om, omp, omb)* est un *ô* fermé nasalisé..." (*loc. cit.*).

These facts are described similarly in other studies of Iberian Portuguese. Holger Sten points out that "...il *y* a neutralisation de quelques oppositions de la série orale, à savoir é—ê; o—ô; de même il y a normalement un seul *a* nasal, lequel

correspond à l'$\hat{a}$ oral..."[2] Pilar Vasquez Cuesta and Maria Albertina
Mendes da Luz remark that "por efecto de la nasalización las vocales
tónicas abiertas se hacen cerradas,..."[3] Jorge Morais-Barbosa in an
article entirely devoted to the Portuguese nasal vowels explains that
"...les voyelles nasales étant toujours à timbre fermé, je me dispense
de les noter à l'aide du diacritique [·] qui dans d'autres cas indique
le même timbre."[4] Williams also remarks that "the nasal resonance
generally closed an open tonic vowel..."[5] and José Joaquim Nunes writes:
"Nasalização...consiste na passagem a nasais das vogais orais e sua
transformação em fechadas..."[6] Jungemann represents Portuguese nasal
and non-nasal vowels as follows:

Orales			Nasalizadas	
i		u	ĩ	ũ
ẹ		ọ	ẽ	õ
ẹ [ą] ọ			ã	
a				

and he adds:

> . . .se observará que no hay $\hat{e}$ ni $\hat{o}$ abiertas correspondientes
> a las orales e y o, y que $\tilde{a}$ nasalizada es un grado mas
> cerrada que la oral a, por tanto con el mismo grado de
> abertura que e y o y la a cerrada oral [ą], usada en posición
> atona y ante consonantes nasales intervocálicas.[7]

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[2]*Les Particularités de la langue portugaise* (Copenhague, 1944),
p. 31; by $\hat{a}$, Sten means the same sound as Vianna's [ą].

[3]*Gramática Portuguesa*, 2nd ed. (Madrid, 1961), p. 197.

[4]"Les Voyelles nasales portugaises: interprétation phonologique,"
Proceedings of the Fourth International Congress of Phonetic Sciences
(Helsinki, 1961), p. 691, n. 3.

[5]*From Latin to Portuguese*, p. 100.

[6]*Compêndio de gramática histórica portuguêsa*, p. 151.

[7]*La teoría*, pp. 104-105.

Thus, the only paradigmatic changes that affected the Portuguese

nasal subsystem, are the merger of the mid vowels [ẽ] and [ɛ̃] in the

front series, [õ] and [ɔ̃] in the back series and the phonetic raising of

[ã] to [ɐ̃]. The mergers [ẽ]-[ɛ̃] and [õ]-[ɔ̃] must have occurred at an

early period since words containing [ẽ] (<VL [ɛ]+N) rhyme with words

containing [ẽ] (<VL [e]+N), and words containing [õ] (< VL [o]+N)

rhyme with words containing [õ] (<VL [ɔ]+N), in O. Port. (see below for

examples).

Unfortunately the lack of assonanced poems makes it difficult

to determine whether the result of the merger was open or close; only

assonances of sequences VC-VN could yield this information since the

opposition [e]-[ɛ] (and [o]-[ɔ]) is kept before C. It is tempting

to suggest that the change followed the simplest development possible,

i.e. that [e] and [ɛ] before N merged as ẽN (and [o]-[ɔ] as õN) since

this is the final outcome in Mod. Port. Thus, after pointing out that

an exact phonetic transcription is not possible for Old Portuguese,

Nobiling chooses this interpretation:

> . . .die mundartikulation der nasalvokale im alt portugiesischen
> dieselbe war wie heut in Brasilien, dass also auch ẽ und õ
> geschlossen waren. Denn in der altportugiesischen hofpoesie,
> die streng auf reinheit der reime hält, reimen die lat. ĕ und ē
> (ĭ), ŏ und ō (ŭ), wo sie nasal geworden sind (tẽ < tĕnet :
> ē < ĭnde, asconda : confonda), und auch in ihrer
> weiterentwicklung ist kein unterschied bemerklich (lẽm [leĵ] <*
> legent wie crẽm [kreĵ] credent.[8] [sic]

Similarly, in the absence of assonances aN-aC, it is impossible

to determine at what period the basic timbre of aN was raised to [ɐ̃].

The results of synthetic speech experiments presented by House and

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[8]"Die Nasalvokale im Portugiesischen," p. 140, n. 2.

Stevens, and according to which higher nasal vowels require less nasalization to be audible as nasals,[9] suggest that [ẽ]-[ɛ̃] and [õ]-[ɔ̃] merged as [ẽ] and [õ]. If the concepts of phonological space and its corollaries are accepted, it is plausible to suggest that these mergers were then followed by the raising of [ã] to [ɑ̃], according to the principle of equidistance:
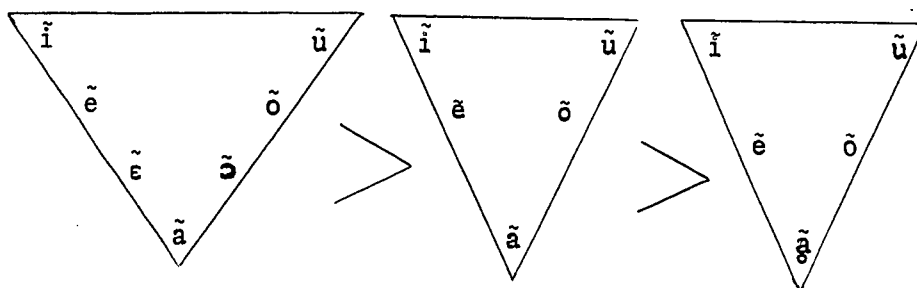
There is thus disclosed a reduced nasal subsystem developed through the process of neutralization.
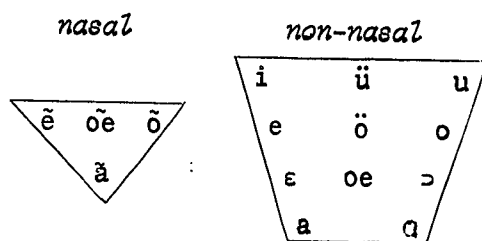
Just as in Portuguese, the French *VN* subsystem has had less members than the *VC* subsystem, from the earliest recorded period.[10] Thus in EOF, as evidenced by the earliest literary texts, the opposition /e/ : /ɛ/ was neutralized before nasal consonants; at that time, the nasal and non-nasal subsystems compared as follows:

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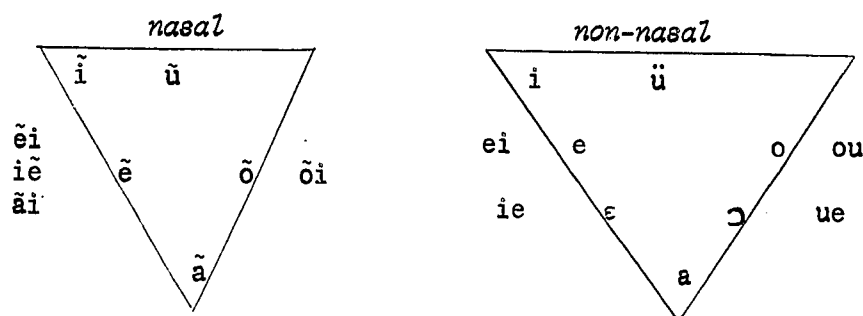
[9]See Chapter IV, pp. 58-59.

[10]For other languages illustrating the same fact, see Trubetzkoy, *Principles of Phonology*, pp. 118-121.

This shows a reduction of one degree of aperture for the front vowels and the wholesale merger of the members in the back series as *oN*. Furthermore the later developments of the *VN* subsystem also included several mergers: *eN* and *aN*; *aiN* and *eiN* (which merged as *ẽ*, along with the second member [ẽ] of *ieN* and *oiN*); *iN* and *EN*. Mod. F. reflects these successive reductions as shown by a comparison of the *VN* and the *VC* subsystems:

nasal   *non-nasal*

$$
\begin{array}{ccc}
& \tilde{e} \quad o\tilde{e} \quad \tilde{o} & \\
& \tilde{a} & \\
\end{array}
\qquad
\begin{array}{ccc}
i & \ddot{u} & u \\
e & \ddot{o} & o \\
\varepsilon & oe & \mathbf{o} \\
a & & \mathbf{\alpha} \\
\end{array}
$$

Thus, both the French and the Portuguese *VN* subsystems exhibit a reduction in the number of their members; this is also true of most of the languages described by Trubetzkoy in his study of the correlation of nasality (see above, p. 124, n. 105). In this sense, the reduction of the French and Portuguese *VN* subsystems in the course of their evolution seems to reflect a general tendency and to be attributable to physical characteristics of nasalized vowels. Most linguists agree that the more subtle vocalic oppositions are hindered by nasal resonance—a phenomenon usually attributed to the damping of the nasal cavities. House and Stevens have explained this damping in physical terms:

The total damping in the human nasal tract is greater than that in the vocal tract because the nasal tract contains constricted passages and has large surface areas of soft tissue as its walls.[11]

Delattre's synthetic speech experiments have led him to the conclusion that "le premier facteur de la nasalité vocalique est sans contredit *l'extrême faiblesse du premier formant...."*[12] Malmberg has pointed out the importance of Delattre's discovery for diachronic studies and in particular for the evolution of the French nasal vowels:

> D'une façon générale, la structure formantielle du spectre nasal est moins nettement différenciée et les différentes qualités vocaliques par conséquent moins faciles à distinguer auditivement. Rien que de très normal en conséquence, que, depuis le moyen âge, le nombre des voyelles nasales s'est successivement réduit jusqu'au résultat de la langue moderne qui est un système à quatre. Rien d'anormal non plus dans le fait que la réduction a eu lieu sur le plan des distinctions d'ouverture, le [ɛ̃] primitif se confondant avec le [ã]...et les [ĩ] et [ỹ] s'ouvrant respectivement en [ɛ̃] et [œ̃]. La place du formant I sur l'échelle des fréquences est en grande partie responsable des différences dites d'ouvertures. Par conséquent, plus ce formant est faible, plus les distinctions de timbre dans cette dimension tendent à se confondre.[13]

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[11]"Analog Studies of the Nasalization of Vowels," p. 221. A similar view is expressed by Thomas Tarnóczy, "Resonance Data Concerning Nasals, Laterals and Trills,"*Word* 4 (1948), 73: "Passing thru complicated and narrow passages, the 'free air'—i.e. the air the current of which is not transformed into acoustic energy—will cause noises owing to friction."

[12]"Les Attributs," p. 106.

[13]"La Structure phonétique de quelques langues romanes," *Orbis* 11 (1962), 145.

In the Central Chinese dialect of Siang-tang, however, the *VN* and *VC* subsystems have the same number of degrees of aperture, but only unrounded vowels are nasalized:
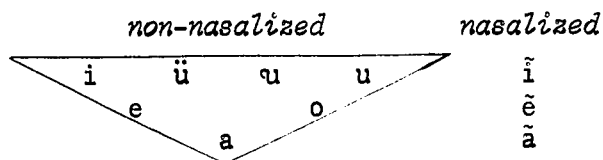
See Troubetzkoy, *Principles of Phonology*, p. 120.

On the other hand, as pointed out Chapter IV, and as shown by the experiments conducted by House and Stevens, no acoustic characteristic of the nasal vowels or physiological feature of the speech apparatus can account for the lowerings that have marked the evolution of the French nasal vowels. The data and their interpretation presented in Chapters V and VI demonstrate that the changes that have affected the French VN subsystem can be accounted for in terms of language-specific pressures, e.g., linguistic pressures and in some cases socio-cultural factors. It is therefore in terms of the intersection of general tendencies due to the articulatory and acoustic nature of nasalized vowels, and of language-specific pressures that the evolution of the French and the Portuguese nasal vowels can be accounted for. The imbalance created in the French vocalic system by the palatalization of /u/ [to /ü/) was followed by developments leading to a more economical system. The same imbalance did not exist in Portuguese since the number of vowels remained the same in the front and back series, and the reduction of the Portuguese VN subsystem entailed only the mergers [ẽ]-[ɛ̃] and [õ]-[ɔ̃] in terms of the physiological requirement posited by House and Stevens, as well as the subsequent phonetic raising of [ã] according to the principle of equidistance.