

DIACHRONIC PHONOLOGY AS RULE COMPLICATION: A GALICIAN EXAMPLE

John M. LIPSKI

Dept. of Romance Languages, Univ. of Alberta, Canada

Received September 1972

The notion of simplicity and simplification has played a key role in the theory of generative phonology, from its earliest formulations until the present day. In particular, it is in the realm of diachronic phonology that the concept of grammar simplification has been most fully developed. In the first published book-length treatment of diachronic problems from a generative standpoint King (1969) divides all primary change into rule addition, rule loss, rule reordering, and simplification. He further states (p. 64): 'There do not seem to be other major kinds of change that cannot be reduced to one of these four We shall find later that other types of apparently unrelated changes ... often reduce to special cases of simplification'. King then goes on to illustrate his conclusions with a number of examples of these four types of primary change. One possibility which is not fully subsumed under the heading of rule addition,¹ and hence is missing from King's study, is the complication of an already existing rule. This phenomenon, while not as frequent as the cases mentioned by King, does in fact occur, and examples of rule complication may be divided into at least three categories.

If one adheres to the theory of markedness, in particular to the 'marking conventions' proposed by Chomsky and Halle (1968), then a

¹ Bhat (1970: 52) notes that many examples of what King considers to be rule addition could also be construed as rule complication. In a similar vein, one might in fact wonder if *all* types of rule addition are not a form of complication, since the addition of a rule increases the overall complexity and intricacy of the grammar. If this is so, then to the claim of Halle (1962: 64) that children acquiring their language strive for the simplest grammar, one must also add that adults, who can only add rules by way of change (*ibid.*) may in turn complicate these same grammars.

trivial example of rule complication is often provided by any change of a segment from a less highly marked to a more highly marked configuration. This is so since in any rule involving this segment, an additional stipulation will have to be attached to block the 'linking' effect of the appropriate marking convention.

Another more or less trivial example of rule complication occurs when a general phonological change (often itself a form of simplification) affecting an entire system results in the complication of another unrelated rule. For example, during the time periods usually designated as Late Gallo-Romance or Early Old French, *u* was fronted to *ü* during a period in which *k* and *t* were being palatalized before *e* and *i*.² With the fronting of *ü*, the palatalization rule, which previously had to specify the vocalic environment as [+ front], now had to include the additional stipulation [- round], to prevent palatalization before *ü*.

Of more fundamental interest to the theory of diachronic phonology are those cases where a rule is apparently complicated through internal evolution independent of any other systemic changes. It is the purpose of this paper to demonstrate that such cases, albeit rare, do in fact exist, and the remaining pages will be devoted to a description of one such case in the Galician dialects.

Modern-day Galician, considered by most scholars to be the remains of the early language from which Portuguese developed,³ consists of a curious group of dialects resembling both Spanish and Portuguese. Although the modern dialectal differences probably date back to the earliest days, Galician was once virtually indistinguishable from Portuguese, at least in its written documents. López (1916: 145), speaking of this unity, remarks:

'Until the 15th century, Galician and Portuguese traveled in perfect harmony, so that there is no sufficient basis for considering them as different languages or dialects. The documents written up to this period may be called Galician or Portuguese, according to taste, and we prefer to call them Galician-Portuguese. After the arrival of the Catholic kings in Galicia, the Galician language in our area, which was subject to the Castilian monarchs, received a mortal blow, and since then has begun to decay at a frightening rate. The Portuguese conserved the speech received from the Galicians which, polished and augmented, constitutes that which today we call the Portuguese language'.

² See, for example, Pope (1934: 22, 90, 125, 127, etc.).

³ This sentiment is, however, not universal. For example, Paiva Boleo (1951), as well as other scholars, have been convinced that the modern-day dialects of Portugal had their origins in the southern provinces.

The spoken and written languages evolved along divergent paths, with Portuguese becoming somewhat more codified, and Galician retaining more marked dialectal differences, both in writing and in speech. The development of Portuguese and of the Galician dialects share many common elements, however, among the more noteworthy of which are the loss of *l* and *n* in intervocalic position. For example:

Latin	Portuguese	Galician	
<i>tenēre</i>	<i>ter</i>	<i>ter</i>	'to have'
<i>lūnam</i>	<i>lua</i>	<i>lua</i>	'moon'
<i>dolōrem</i>	<i>dor</i>	<i>door</i>	'pain'
<i>colōrem</i>	<i>cor</i>	<i>coor</i>	'color'

This development is of quite ancient origin, and was fully consummated in both Portugal and Galicia before the establishment of the modern literary languages. An examination of the documents of the Portugaliae Monumenta Historica, dating from about 775 to about 1085, undertaken by Sletsjøe (1959), reveals both loss (136, 143 & *passim.*) and retention (131, 142 & *passim.*) of intervocalic *l* and *n* in the area representing present-day Portugal and Galicia. The earliest documents considered properly Galician, dating from the 13th century, already indicate loss of intervocalic *l* and *n* (cf. Freijomil 1935: 87-90).

From this point on, however, the history of *l* and *n* takes on several diverse aspects in Galician and Portuguese, due in part to other developments in these languages. A particularly good illustration of these divergent developments may be obtained by examining the various reflexes of the plurals of nouns and adjectives ending in *-l* or *-n*. In standard Portuguese, the intervocalic *n* which resulted from the addition of the plural suffix *-es* dropped, yielding a nasal diphthong, while the intervocalic *l* in the plurals of words in *l* also dropped yielding in these cases an oral diphthong:

Latin	Portuguese		
<i>canes</i>	<i>cães</i>	[kɛ̃js]	'dogs'
<i>manus</i>	<i>mãos</i>	[mɛ̃ws]	'hands'
<i>tales</i>	<i>tais</i>	[tajs]	'such (pl.)'
<i>animales</i>	<i>animais</i>	[ɛ̃nimájs]	'animals'

In Galician, however, the situation is much more complex. First of all, the loss of intervocalic *n*, while often yielding a diphthong, did not result in the nasalization of either of the two vowels brought in contact. Entwhistle (1962: 289) notes: 'Essentially the whole process is one of denasalization. First, the nasal consonant was replaced by a nasal resonance in the vowel; then, in certain cases the nasal resonance itself disappeared'.

The major source of the complexity of evolution of *-l-* and *-n-* in the Galician dialects stems, however, from separate developments in the language, such as apocope and contraction, which modified the environments containing *-l-* and *-n-* and hence gave rise to a number of seemingly unrelated derivations. In particular, the reflexes of the Latin suffix *-anu* have frequently been employed in attempts at establishing boundaries for the various Galician dialects. In general, Latin *-anu* gave either *-an* [aŋ] or *-ao* [aw] in Galician, and the distribution of these two variants has provided the necessary impetus for the formation of dialectal isoglosses. Unfortunately, due to the sporadic distribution of these and other phenomena among the Galician dialects, an accurate picture is difficult to obtain, and controversy continues even today. García de Diego (1909: 155) gives the following distribution:

'The region of *-an* corresponds principally to the province of Pontevedra; but in the northeast part, in the district of Lalín, the region of *-ao* enters very irregularly. On the contrary, the aforesaid region of *-an* penetrates in a band along the south of Coruña toward Santiago, where it predominates, although *-ao* is not unknown. At this same point it stops, and in San Marco, one league away, *-ao* begins. *-An* reappears in Betanzos and Mariñas, although not covering the entire area, and finally shows up in various bordering points in the West, in parts of Becerreá (Lugo), Viana del Bollo (Orense), etc. In Bergondo (Coruña), both forms are found. Along the frontier of Asturias and León, the new form *-ano* appears, while *-ao* occupies the remainder of Galicia'.

This same distribution is reproduced nearly intact by Freijomil (1935: 15). A slightly altered picture emerges from the extensive field-work undertaken by Zamora Vicente (1953), whose dialect map (p. 75) as well as general observations list the variant *-an* as occurring primarily in the western provinces of Galicia, while *-ao* is restricted to the eastern regions, with considerable vacillation in the center.

The most exhaustive study of the phonological and morphological developments which separate the Galician dialects is offered by Carballo Calero (1969). Carballo arrives at a four-way dialectal classification on the basis of a large number of phonological factors; those

relevant to the purpose of this paper include the reflexes of Latin *-anu* and *-ana*, and the plurals of words in *-l* and *-n*. As defined by Carballo (p. 11), Galicia may be roughly divided into four dialect zones:

Dialect A: eastern

Dialect B: central

Dialect C: northwest

Dialect D: southwest.

These dialects exhibit the following reflexes of the Latin endings given above:⁴

Latin	<i>germano</i> 'brother'	<i>germana</i> 'sister'	<i>canes</i> 'dogs'	<i>animales</i> 'animals'
Dialect A	<i>irmao</i>	<i>irmá</i>	<i>cais</i>	<i>animais</i>
Dialect B	<i>irmao</i>	<i>irmá</i>	<i>cas</i>	<i>animás</i>
Dialect C	<i>irmá</i>	<i>irmá</i>	<i>cas</i>	<i>animás</i>
Dialect D	<i>irman</i>	<i>irman</i>	<i>cans</i>	<i>animás</i>

The only other study of the Galician dialects which even approaches Carballo's in detail and comprehensiveness is that of Schneider (1938: esp. 120–28), whose observations largely confirm those of Carballo. However, Schneider restricts himself to a rather small geographical region, and also refrains from discussing in any detail the development of intervocalic *l* in Galician. Therefore, Carballo's study is of the greatest overall value in the following presentation.

Given the above data, it should be possible to reconstruct some of the historical developments which led to the rather unusual distribution shown in the table. As a general observation, one may note that the final *e* of such forms as *cane* and *animale* fell very early, probably around the 8th century (cf. Grandgent 1934: 102). This is confirmed, for example, by the fact that the later loss of intervocalic *l* and *n* in Portuguese and Galician did not affect these words, which preserve their final *n* or *l*. Before the apocope of final *e* in Vulgar Latin, the

⁴ Actually, even this distribution is somewhat of an oversimplification, since many Galician speakers exhibit a non-uniform treatment of the words in various classes, showing one alternation for some words, another alternation for other forms, etc. This is due, however, to the inevitable mixing of dialects within a relatively small geographical area, and does not undermine the existence of defining dialectal characteristics.

pluralization of most nouns and adjectives⁵ was probably effected by a simple rule such as:

$$\text{pl} \rightarrow \text{s} \quad (1)$$

After the eventual restructuring caused by apocope, however, the conditions on pluralization had to be restated as follows:

$$\text{pl} \rightarrow \left\{ \begin{array}{l} \text{s/V} \text{ — } \# \\ \text{es/C} \text{ — } \# \end{array} \right\} \quad (2)$$

This is a rather trivial example of rule complication, common to many early Romance languages, and caused by an unrelated systematic change, namely the apocope of a final vowel. An individual examination of the four dialects mentioned above yields however, even more striking instances of phonological modification than those affecting Vulgar Latin.

Dialect A represents the most straightforward evolution, paralleling in most respects, except for the formation of nasal vowels, the development of standard Portuguese. Compare:

Latin	<i>germano</i>	<i>germana</i>	<i>canes</i>	<i>animales</i>
Portuguese	<i>irmão</i>	<i>irmã</i>	<i>cães</i>	<i>animais</i>
Dialect A	<i>irmao</i>	<i>irmá</i>	<i>cais</i>	<i>animais</i>

With the advent of the rule dropping intervocalic l and n, the pluralization condition could remain unchanged by having the n- and l-deletion rule apply after pluralization (although synchronically restructuring has probably taken place). A late phonetic rule then reduced the resulting hiatus to a diphthong, by changing the unstressed i to a glide, a condition currently productive both in Portuguese and Galician:

	/kan/	/animal/
Pluralization:	kánis	animális
n- and l-deletion:	káis	animáis
Glide formation:	kajs	animájs

⁵ Disregarding for the moment such exceptional forms as *lapis*, etc.

Up to a point, the evolution of dialect B proceeds like that of Dialect A. An innovation is presented, however, in the reduction of the diphthongs resulting from the loss of n and l in the plural: *animais* > *animás*, *cais* > *cás*, etc. Once these diphthongs reduced (a process by no means general to the entire language), restructuring would take place, since it was no longer possible to derive the correct plural forms by application of (2) and the rule of n- and l-deletion.⁶ The correct formulation of the pluralization process in dialect B thus becomes:

$$\text{pl} \rightarrow \left\{ \begin{array}{l} \text{s/V} \text{ — } \# \\ \text{es}/\{ \text{r} \} \text{ — } \# \end{array} \right\} \quad (3)$$

Plus the additional contingency:

$$\left\{ \begin{array}{l} \text{n} \\ \text{l} \end{array} \right\} \rightarrow \text{s/ — } \# \text{] pl.} \quad (4)$$

This is a non-trivial example of rule complication caused by an independent development, since it casts a measure of doubt on the relative role of simplicity in phonological change. The reduction of the diphthongs in the plural forms was a rather minor and sporadic change (which may perhaps be construed as a simplification in its own right) affecting only a small class of forms. As a result of this change, however, a rather substantial increase in the complexity of the pluralization process ensued, as reflected by (3) and (4). Thus not only did a minor change result in complication of the pluralization condition, but this complexity has persisted until the present time.

The evolution of the class of forms under consideration in dialect C evidently closely paralleled the developments in dialect B, as shown above, with an additional innovation reducing, in many instances, the

⁶ Trying to save the analysis by positing a rule of diphthong reduction to be ordered after the rule of n- and l-deletion meets with several obstacles, since the process of diphthong reduction was not phonetically general (cf. *mais* 'more'), nor even general during pluralization (*pais* 'fathers, parents', *nais* 'mothers'). In fact, to adequately state a rule of diphthong reduction operating synchronically along with rules of n- and l-deletion, the former rule would have to be formulated so as to apply only to those diphthongs resulting from the loss of intervocalic n or l during pluralization, which is a highly complex and rather unlikely rule. Furthermore, while the rules of n- and l-reduction were once active processes in Galician, there is no evidence pointing to the synchronic retention of these rules.

diphthong -ao to -a. There is thus a merger of the reflexes of Latin -anu and -ana, for example, *germanu*, *germana* > *irmá*.

It is in dialect D, however, that the most unusual developments are displayed. An inspection of such forms as *irman* (<*germanu*, *germana*) indicates that in certain instances final -a and -o were also apocopated, at least after n.⁷ That this apocope was a relatively early development is revealed by the preservation of the final n in these words. With the advent of the rule deleting intervocalic n and l, the plurals of the words in l evidently underwent the normal development; e.g. *animales* > **animais* > *animás*. For some reason, however,⁸ the plural of words in n was eventually formed merely by adding -s, i.e. *canes* > *cans* instead of **cais*. This failure to undergo the usual development is reflected as a rather marked increase in complexity of the pluralization condition, for from (2), dialect D developed the condition:

$$\text{pl} \rightarrow \left\{ \begin{array}{l} s / \left\{ \begin{array}{l} \text{V} \\ \text{n} \end{array} \right\} \text{ — } \# \\ \text{es} / \left\{ \begin{array}{l} \text{l} \\ \text{r} \\ \text{s} \end{array} \right\} \text{ — } \# \end{array} \right\} \quad (5)$$

This development is particularly interesting, since it apparently provides an example of a rule becoming significantly more complex through a more nearly internal evolution. This last statement should perhaps be clarified a bit, however, since as it stands it implies a rather strange causal relation between rules and languages. It is of course not the rules *per se* which do the changing; rather, the language changes, for whatever reason, and these changes are reflected as changes in the rule component of the grammars of those individuals speaking the language. The terms 'rule complication' or 'rule simplification' are therefore misleading, since there is no reason to suppose that the metatheoretical structure to which the notion of phonological rule belongs is in any way responsible in a causal manner for changes affecting a language. Consequently, when speaking of the shift, in a Galician dialect, from (2) to (5), as an example of rule complication, it is meant that the language,

⁷ This may also have occurred in some Portuguese dialects. See, for example, Nunes (1902: 40 & *passim*).

⁸ Perhaps to avoid merger with the plurals of the words in -l, although the change of confusion was very slight. This is unlikely, however, in view of the wholesale mergers in dialects B and C, as well as the merger of -anu and -ana in dialect D itself.

which may be formalized as a set of generative rules, changed in such a fashion as to render more complex the formal representation of one or more of these rules.

A further development in dialect D reduced the diphthongs in the plurals of the words in -l, as in dialects B and C, resulting in the following eventual pluralization condition:

$$\text{pl} \rightarrow \left\{ \begin{array}{l} s / \left\{ \begin{array}{l} \text{V} \\ \text{n} \end{array} \right\} \text{ — } \# \\ \text{es} / \left\{ \begin{array}{l} \text{r} \\ \text{s} \end{array} \right\} \text{ — } \# \end{array} \right\} \quad (6)$$

plus the added stipulation:

$$\text{l} \rightarrow s / \text{V — } \# \text{] pl.} \quad (7)$$

More interesting than the development of the pluralization condition in dialect D, however, is the evolution in this dialect of the rule dropping intervocalic l and n. It is most reasonable to suppose that this rule initially applied, in dialect D, to all instances of intervocalic n and l. This is indicated, for example, by the complete regularity in this dialect of the loss of intervocalic l, as well as by the loss of intervocalic n in all positions other than before the plural morpheme. It is further indicated by the completely regular behavior of intervocalic n in contiguous dialects, in both Galicia and Portugal, as well as by the fact that there is no documentation of variation in this or other Galician-Portuguese dialects during the time in which this rule came into effect. We may therefore assume that dialect D once shared with its neighbors a simple rule such as:

$$\left\{ \begin{array}{l} \text{l} \\ \text{n} \end{array} \right\} \rightarrow \phi / \text{V — } \text{V} \quad (8)$$

However, with the restriction, in dialect D, involving the plurals of words ending in n, this rule had to be stated as two disjoint rules, with the second rule being of an exceedingly complex nature:

$$\text{l} \rightarrow \phi / \text{V — } \text{V} \quad (9)$$

$$\text{n} \rightarrow \phi / \text{V — } \text{V except in the envir. V — Vs\#] pl.} \quad (10)$$

Although it will probably never be possible to determine with any certainty the reasons behind the unusual developments in dialect D, one is free to speculate. When intervocalic *n* fell in Galician and Portuguese, it nasalized the preceding vowel. In Portuguese, this often resulted in a nasal diphthong, while in Galician the vowels were subsequently denasalized. Consider the results, however, if the half-nasalized diphthong of the plural of a word in *-n* were reduced to a single vowel, similar to the plurals of the words in *-l*, before the nasal resonance had been lost in the first vowel. For example: *canes* > **cãis* > **cās* [kās]. It might very well be the case that instead of denasalizing the vowel to yield **cas*, as did the other Galician dialects, the speakers of dialect D chose to analyze a form such as **cās* as /kans/. This analysis would not be exceedingly difficult under the circumstances, for a nasal vowel ordinarily prenasalizes a following obstruent, thus creating a nasal 'transition sound' homorganic with the following consonant. This is commonly observed in Portuguese; e.g. *tempo* [tém pu] 'time', *indo* [ĩⁿ du] 'going', etc. If forms like **cās* existed in dialect D, they would then be realized as [kãⁿs], and if the homorganic *n* were inserted before the vowel was eventually denasalized, the modern forms would result.⁹ Such a development is of course purely speculative, but it is not without parallel in the immediately neighboring dialects of Portugal, and may therefore be in some measure correct. At any rate, the important point to be kept in mind is that this development resulted not only in a complication of the pluralization condition, but also in a restriction and complication of the rule of *n*- and *l*-deletion.

If one accepts the fact that instances of rule complication occur, and the preceding paragraphs strongly suggest that they do, it might be wondered how such changes come to take place. If generative phonology had not adopted the criterion of simplicity as one of its cornerstones, this question might never be raised, but in any event a few general remarks may be made. One very common way for rules to apparently change in complexity or generality is in the transmission of sounds from one area to another. King (1969), however, considers that rules will always simplify during borrowing, thus he says (p. 91) '... a rule is borrowed with the same or greater generality, but not with lessened generality ... it seems a priori unlikely in our theory that a

⁹ Interestingly enough, Entwistle (1962: 307) notes, concerning the development of *n* in Galician: 'either the Galician vowel is denasalized, or the nasal element may be reconstituted'.

rule would become less general as it is transmitted from one dialect to another'. If this were true in the case of the Galician dialects, we should be forced to assume that the most complex developments had originated in dialect D, and therefore dialect borrowing would be irrelevant in determining their causes.

King's assumption about borrowing has been questioned, however, by Bhat (1970: 54), who cites some evidence from dialects of south India. In Telugu, [k] has become [c] before front vowels; in neighboring Tamil and Malayam, this same palatalization also occurs, except when the front vowel is followed by a retroflex sound, while in a dialect of Tulu bordering on the latter dialect, palatalization before front vowels does not occur when the vowel is followed by a retroflex sound or *r*. In order to uphold the claim that rules are simplified during borrowing, Bhat remarks: 'the change should have started from a tiny dialect of Tulu (about a thousand speakers), did not spread to other dialects of Tulu, but to the neighbouring Malayalam language (20 million people), and then to Tamil (34 million people) and lastly to Telugu (36 million people)'. The implications are obvious. Thus, it may be that the developments in southwestern Galicia are directly attributable to dialect borrowing. The only difficulty with this assumption is that all the neighboring dialects, both in Galicia and in Portugal, show a regular development of intervocalic *l* and *n*, thus giving no indication of how, or from where, dialect borrowing could have taken place.

Another possibility which comes to mind is the phenomenon which Kiparsky (1965) has termed 'imperfect learning'. That imperfect learning should lead to grammar complication is, however, explicitly denied by Kiparsky (p. 2-13): 'it is ... necessary that imperfect learning from fortuitous ignorance should not increase complexity'. Even if one does not accept Kiparsky's statement, it is difficult to imagine how imperfect learning through 'fortuitous ignorance' could have played a role in the Galician dialects, since the plurals of words in *-n* and *-l* are both common and well-distributed, accounting, in fact, for many of the most common nouns and adjectives.

Another line of research has been suggested in a more recent study by Kiparsky (1971). In dealing with cases of apparent grammar complication, Kiparsky has considered a number of *paradigm conditions*, which may be in part responsible for morphologically conditioned sound changes. In the course of the discussion (pp. 596-611), Kiparsky suggests several general principles which may override formal simplicity

criteria in determining the direction of sound change, among them:

- (a) Allomorphy tends to be minimized in a paradigm.
 (b) Morphological material which is predictable on the surface tends to be more susceptible to loss than morphological material which is not predictable on the surface.

It is not clear how these suggested principles may be applied to the Galician dialects under consideration. Surely (a) is directly violated in all cases, especially in dialect D, which is reflected by the increased complexity within the pluralization paradigm. It is also not immediately apparent how (b) could be employed, although one could perhaps argue that the speakers of dialect D sought to avoid a potential merger between plurals of words in -l and -n. As mentioned previously, this suggestion gets little credence from the other mergers occurring in the Galician dialects, as well as from the fact that in dialect D itself, intervocalic l and n unconditionally dropped in morpheme-internal position.

As an alternative to the above suggestions, which attempt to *explain* instances of grammar complication, one may choose instead to follow the well-known aphorism of Postal (1968: 283): '... there is no more reason for languages to change than there is for automobiles to add fins one year and remove them the next, for jackets to have three buttons one year and two the next, etc.'. If one takes Postal's comments at face value, it would appear that there should be at least as many examples in the history of sound changes of grammar complication as there are of grammar simplification. While a reexamination of sound changes without the prior criterion of simplicity may reveal this to be true, such an assumption would seriously undermine the claims of generative phonology that simplicity is a prime motivating force in the construction of linguistic theories.

Postal's remarks may indeed be applicable to the developments in southwestern Galician, but before chalking up these changes to an arbitrary 'nonfunctional stylistic change', we should perhaps briefly consider an alternative suggested by the speculative reconstructions presented above. If the plurals of words in -n did in fact evolve as, for example, *canes* > **cāis* > **cās*, then at the point where vowels were being denasalized, speakers had a choice as to whether or not the transitional nasal sound between the vowel and the following consonant was to be retained. This choice would be purely localized, affecting only a relatively few forms, although the results of the choice could have more far-reaching effects on the overall simplicity of the grammar, as out-

lined above. One might therefore speculate further that in the case of a purely localized choice of phonetic realizations, the ordinary native speaker will make his decision without regard for global considerations of simplicity, although such global considerations may play a role in later developments. These remarks are naturally at present only hypothetical, but they should be able to be tested by observation and investigation of other sound changes.

In summary, it has been claimed that the evolution of phonological rules is not a monotonic function in the direction of greater simplicity and generality, but rather that rules may also become more complex. The examples presented in this paper do not stand alone: the case cited by Bhat is also an instance of rule complication. Schürr (1956) has presented evidence that in some Italian dialects diphthongization of the lower mid vowels was once general in all stressed positions, and later restricted to unchecked syllables.¹⁰ If one examines other sound changes without the commitment of simplicity, further examples of rule complication may come to light. It is suspected that at least some additional factors must exist to check the criterion of simplicity in sound change, for otherwise all languages would slide dizzily down the path to childlike babbling, the 'simplest' speech patterns.

References

- Bhat, D.N.S., 1970. Review of King (1969). *Indian Linguist.* 31, 49–57.
 Carballo Calero, R., 1969. Sobre os dialectos do galego. *Grial* 23, 1–15.
 Chomsky, N. and M. Halle, 1968. *The sound pattern of English*. New York: Harper & Row.
 Entwhistle, W.J., 1962. *The Spanish language, together with Portuguese, Catalan and Basque*. 2nd. ed., London: Faber & Faber.
 Freijomil, A.C.F., 1935. *El idioma gallega*. Barcelona: Martin.
 Garcia de Diego, V., 1909. *Elementos de gramatica historica gallega*. Burgos.
 Grandgent, C.H., 1934. An introduction to Vulgar Latin. New York: Hafner.
 Halle, M., 1962. Phonology in a generative grammar. *Word* 18, 54–72.
 King, R.D., 1969. *Historical linguistics and generative grammar*. Englewood Cliffs, N.J.: Prentice-Hall.
 Kiparsky, P., 1965. Phonological change. Cambridge: M.I.T. (Unpublished Ph. D. dissertation.)
 Kiparsky, P., 1971. Historical linguistics. In: W.O. Dingwall (ed.), *A survey of linguistic science*. Baltimore: Univ. of Maryland, pp. 576–649.

¹⁰ Romeo (1968) also claims that in the early stages of Portuguese and Provençal, the lower mid vowels first diphthongized and later remonophthongized, which would be a rather complex development. One may object to Romeo's conclusions, however, on the grounds that they are based on a purely theoretic model and are not substantiated by documentary evidence.

- López, A., 1916. Gallego y Portugues. *Bol. Real.Acad. Gallega*, 103, 145-47.
- Nunes, J.J., 1902. Dialectos algarvios. *Rev. Lusitana* 7, 33-55.
- Paiva Boleo, M. de, 1951. Dialectologia e historia da língua: isoglossas portuguesas. *Bol. Filol.* (Lisbon) 12, 1-44.
- Pope, M.K., 1934. *From Latin to modern French*. Manchester University Press.
- Postal, P.M., 1968. *Aspects of phonological theory*. New York: Harper & Row.
- Romeo, L., 1968. The economy of diphthongization in Early Romance. The Hague: Mouton.
- Schneider, H., 1938. Studien zum Galizischen des Limiabeckens. *Volkstum Kult. Rom.* 11, 69-281.
- Schürr, F., 1956. La diphthongaison romane. *Rev. Linguist. Rom.* 20, 107-44 and 161-248.
- Sløtsjõe, L., 1959. *Le développement de l et n en ancien portugais*. Oslo.
- Zamora Vicente, A., 1953. De geografía dialectal: -ao, -an en Gallego. *Nueva Rev. Filol. Hispánica* 7, 73-80.