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In (1a) *i* is syncopated, *g* is dropped before two consonants (as in *sescenti* < *sexcenti*), and the voiced *z* is lost before *w* giving rise to the compensatory lengthening of the preceding vowel. The process in (1b) can be initiated by assuming syncopation of *e*, but the rest has been a matter of uncertainty. Lindsay (*op.cit.* 547) assumed that *g* was assimilated to *v* (*gv* > *vv*). This view was accepted by Sommer (*art.cit.* 57) and Kent (*op.cit.* 143). In his *Handbuch* (p. 536), Sommer proposed the vague possibility that *g* had been lost giving rise to the compensatory lengthening of *a*.<sup>1</sup>

The following arguments have been given in support of *\*magis-volo*:

- *Magis* is an older form than *mage*, and it is likely that the compound form underlying *māvolo* historically antedates the introduction of *mage*.<sup>2</sup>
- The basic form *\*magis-volo* can be related to independently motivated sound laws. The current view is that the compensatory lengthening of vowels is a consequence of the loss of *s* before voiced consonants.<sup>3</sup> The assumption *māvolo* < *\*mag-volo* is problematic.

The following argument in favour of *\*mage-volo* has been put forward by Sommer:

- In Proto-Italian there was a reluctance against syncopation of vowel in a closed syllable, when preceded by a stressed one. Therefore, *\*mágisteros* did not change into *\*mácsteros*, and *\*séquesteros* did not give *\*séqsteros*. Thus, it is unlikely that *\*mágis-volo* > *\*macs-volo*.<sup>4</sup>

The problem concerning the basic form of *māvolo* is still unsettled, although *\*magis-volo* has gained more popularity. Sommer (*art.cit.* 57) argued eagerly in favour of *\*mage-volo*. In his *Handbuch* he gives *\*magis-volo* as an alternative. In *Sounds of Latin*, Kent mentioned *\*magis-volo* only in a note. In Kent's *Forms of Latin*<sup>5</sup> the basic form *\*magis-volo* is presented as being as conjecturally possible as *\*mage-volo*.

<sup>1</sup> Sommer, *Hb.* 536: »... in letzterem Fall hätte sekundär zusammengeratenes -*gu-* zum Schwund des *g* mit Ersatzdehnung geführt (?... weitere Beispiele fehlen).»

<sup>2</sup> Leumann, *op.cit.* 157: »... doch ist *mage* ... für eine immerhin alte Zusammenrückung kaum in Anspruch zu nehmen.»

<sup>3</sup> See, e.g., Kent, *op.cit.* 145; Niedermann, *op.cit.* 76. We disregard the compensatory lengthening of vowels preceding a nasal.

<sup>4</sup> Sommer, *art.cit.* 38 and 57. The argument is strengthened by cases like *dexter* (< *\*dex(i)teros*) and *sinister*.

<sup>5</sup> Baltimore 1946, 99.

0.2 *The Source of the Problem.* The approaches mentioned above can be characterised as presupposing juxtaposition of *magis* / *mage* and *volo*. At one time — so the argument runs — there were two independent words, *magis* and *volo*, which co-occurred so frequently that they were united into a single word, \**magisvolo*. In time, this word was affected by various phonological processes, sound laws. The result of these processes was *māvolo*. This view, which was first put into scientific form by L. Havet<sup>1</sup>, dates from antiquity. When comparing the language of his contemporaries to that of previous generations, Cicero states among other things the following: *nequire pro non quire, malle pro magis velle, nolle pro non velle . . . dicimus* (*Orat.* 154).<sup>2</sup> Cassiodorus the grammarian gives a more detailed account: [*antiqui*] *primo magis volo dixerunt, postea pluribus elisionibus hoc verbum angustaverunt, ut mage volo, deinde mavolo, quod frequentissimum apud illos est* (*Ex Annaeo Cornuto VII*, 149, 21 ff. Keil).<sup>3</sup> It is needless to point out the differences between the approaches of the ancient and the modern grammarians. Instead, it will be of some interest to realize in what respects the starting-points of these statements coincide with those mentioned in paragraph 0.1. All statements considered so far involve the principle of juxtaposition. My use of the term juxtaposition may require some clarification. Consider the following compounds:

- (2) a. *satisfacio* 'I satisfy', *manūmitto* 'I set at liberty', *sacrōsanctus* 'inviolable', *legislator* 'law-giver', *respublica* 'state', *iusiurandum* 'oath'.  
 b. *vēndo* 'I sell', *vēneo* 'I am sold', *possum* 'I am able', *possideo* 'I possess', *māvolo* 'I prefer'.  
 c. *ignifer* 'fire-bearing', *lucifer* 'light-bringing', *claviger* 'club-bearer' or 'key-bearer', *vestifex* 'tailor' 'cloth-maker'.

At first sight it is clear that the types given in (2a—c) reflect composition patterns coming from different diachronic periods. I shall call the compounds given in (2a) *juxtapositions*. Their parts are very loosely connected. This fact is reflected in the orthography; e.g., the verb SATISFACIO is written sometimes *satisfacio*, sometimes *satis facio*;<sup>4</sup> the second *s* in *satisfacio* is not assimilated

<sup>1</sup> *MSL* 4 (1881) 85.

<sup>2</sup> »We say . . . *nequire* for *non quire*, *malle* for *magis velle*, *nolle* for *non velle* . . .» (Cic. *Orat.* with an English translation by H. M. Hubbell, 1939).

<sup>3</sup> »[The ancients] said first *magis volo* and reduced this word later by several elisions, as *mage volo*, then *mavolo*, which is most frequent among them.»

<sup>4</sup> Cf. Cic. *Fin.* 1, 4 *eis igitur est difficilium satis facere, qui se Latina scripta dicunt contemnere*; 1, 15 *re mihi non aeque satisfacit, et quidem locis pluribus* (ed. by J. S. Reid 1931).

to the following *f* (*\*satisfacio*).<sup>1</sup> The conclusive evidence for the claim that the parts of the compounds mentioned in (2a) are loosely connected comes from morphology (e.g., the gen. sing. of *iusiurandum* is *iurisiurandi*, not *\*iusiurandi*) and syntax (the possibility of tmesis; e.g., *sacroque sanctus* for *et sacrosanctus* or *manu . . . mitto* for *manumitto* <sup>2</sup>).

The second group (2b) is problematic. It is commonly held by historical grammarians that all these compounds originate from juxtapositions:

- (3) a. *vēnum do* > *vēnundo* > *vēndo*.  
 b. *vēnum eo* > *\*vēnumeo* > *vēneo*.  
 c. *potis sum* > *potissum* > *\*potsum* > *possum*.  
 d. *\*potis sideo* > *\*potissideo* > *\*potsideo* > *possideo*.  
 e. See (1).

The diachronic derivation of these compounds is based on the *juxtaposition hypothesis*.

The compounds given in (2c) are 'true compounds' <sup>3</sup>. Their history cannot be traced back to juxtaposed word forms in the sense of (2a) and possibly (2b).

It was pointed out above that the compounds given in (2b (= 3a—e)) are problematic. Usually their origins have been accounted for in terms of the juxtaposition hypothesis. However, there has been some diversity of opinion as to how the underlying juxtaposed forms are to be related to the actual compound forms. More technically, the disagreement is due to the fact that the historical process relating the presumptive input form to the actual output form presupposes phonological processes that are incompatible with certain conditions on phonetic change. In this particular case, the *Condition of Juxtaposition Hypothesis* has been violated:

- (4) If the word (A) can be synchronically analysed into a compound of two (or more) words as meaning units (a + b) and if the phonological shape of the construction (a + b) is such that it can be related to (A) by empirically verified or verifiable sound laws, then (a + b) is to be considered a juxtaposition of two originally independent words.

<sup>1</sup> The phonetic representation of *satisfacio* may very well have been [satiffakio]. The point is, however, in the fact that this phonetic detail did not filter out to the orthography — obviously because the parts of the compound were perceived as loosely connected.

<sup>2</sup> Cf. Plin. *Nat.* 7, 143 *cum resistendi sacroque sanctum repellendi ius non esset*; Cic. *Mil.* 22, 57 *manu vero cur miserit*.

<sup>3</sup> In German literature they are called 'echte Zusammensetzungen' and contrasted with 'Zusammenrückungen' (cf. 2a). See Leumann, *op.cit.* 198, 247.

Consider the following compounds and their diachronic derivations:

- (5) a. *\*ius-dek-s* > *\*iuz-dek-s* > *iūdex* 'judge'  
 b. *satis-ne* > *\*satisz-ne* > *\*sati-ne* > *\*sati-n* > *satin* 'enough?'  
 c. *quasi* > *quasi* 'as if'  
 d. *quidquid* > *quitquid* > *quicquid* 'whatever'

All these instances can be accounted for by independently motivated sound laws: assimilation, compensatory lengthening, iambic shortening, apocope, etc. Therefore, they are compatible with the condition. On the other hand, it would be absurd to claim that compounds like those in (2c) originate from juxtapositions *\*ignem-ferens*, *\*lucem-ferens*, *\*clavam-* or *\*clavemgerens*, *\*vestis-* or *\*vestium-faks*, etc. These basic forms are not compatible with the condition of juxtaposition hypothesis, since they could not be accounted for by natural sound laws. Although the absurdity of historical processes such as *\*vestium-fak-s* > . . . > *vesti-fek-s* is quite evident, there is a number of explanations, the probability / improbability of which has been determined by the judge's attitude towards the Condition of Juxtaposition Hypothesis. Let us take some examples. There exist two competing solutions to the origin of *potui*, the perfect form of *possum*. The older one, proposed by Corssen<sup>1</sup>, presupposes juxtaposition of *pote* and *fui* 'I have been'<sup>2</sup>. In principle, this solution is on the same lines as that given to *possum* in (3c). It is not, however, compatible with the Condition of Juxtaposition Hypothesis, i.e., there seem to be no natural sound laws to account for the change from *\*potefui* to *potui*. This inadequacy has been overcome in two ways: either by postulating another basic form or by weakening the Condition of Juxtaposition Hypothesis. The latter attitude is represented by Horn<sup>3</sup> and Muller<sup>4</sup>, who consider *\*potefui* (Horn) / *potifui* (Muller) the basic form of *potui*. According to Horn (*op.cit.* 31), the only step of change was the 'Abschwächung' of *-ef-* in *\*pot(ef)ui*. Most grammarians have postulated another basic form. They have argued that *potui* is the perfect form of an old verb *\*poteo* 'I am able'<sup>5</sup>. Both comparative<sup>6</sup> and phonological<sup>7</sup> evidence favours this solution.

<sup>1</sup> *Kritische Beiträge zur Lateinischen Formenlehre* 229.

<sup>2</sup> Cf. Ter. *Phorm.* 535 *hic si pote fuisset exorariet | triduom hoc, promissum fuerat.*

<sup>3</sup> W. Horn, *Sprachkörper und Sprachfunktion.*<sup>2</sup> Leipzig 1923, 31. Horn's treatise is a clear instance of the 'weaker' attitude. His leading principle can be paraphrased in terms of information theory: the more redundant a sound is, the more likely it is to disappear (cf. Horn, *op.cit.* 4).

<sup>4</sup> Fr. Muller Jzn, *Altitalisches Wörterbuch.* Göttingen 1926, 355.

<sup>5</sup> See, e.g., Sommer, *Hb.* 566; Ernout, *op.cit.* 179; Leumann, *op.cit.* 311.

<sup>6</sup> Cf. Osc. *pútiad* 'possit' (= *\*poteat*).

<sup>7</sup> The compatibility with the Condition of Juxtaposition Hypothesis.

A similar case is the basic form of *amābam* 'I loved', *legēbam* 'I read' (impf.), *agēbam* 'I drove', etc. Skutsch<sup>1</sup> bases his explanation on the juxtaposition hypothesis. According to him, the basic forms were \**amāns-fam* 'I was loving', \**legēns-fam* 'I was reading', \**agēns-fam* 'I was driving', etc. (*fam* being the aorist \**bhwam* of *bhewā* 'to be', 'to become').

This explanation is accepted and used by Horn (*op.cit.* 30) as an evidence in favour of his notion of 'Abschwächung'. To give an adequate account for the imperfect forms, the juxtaposition hypothesis must be abandoned. Good reasons for doing so are given by Ernout<sup>2</sup>.

To give one more example: According to Lindsay<sup>3</sup>, it has been claimed by some grammarians that the verb *pando* 'I spread out' comes from the juxtaposition \**patem-do* 'I make opening'. This explanation is, however, incompatible with the Condition of Juxtaposition Hypothesis.

The juxtaposition hypothesis is able to explain the origin of a great number of compounds, but it seems to me that it has been used too stereotypically. As the instances mentioned above suggest, it has been the first resort in obscure cases. The moral that is to be drawn from these instances (viz. *potui* from \**potefui*, *amābam* from \**amāns-fam*, and *pando* from \**patem-do*) is that the juxtaposition hypothesis has turned out to be inadequate.

## 1 A Suggestion for an Alternative Analysis

1.1 *Preliminaries.* The alleged juxtapositions given in (3a—e) involve serious phonological problems which have not yet been solved in a satisfactory way. Sommer (*Hb.* 285) and Muller (*AitWb.* 545) suggest that *vēnundo* (< *vēnum do*) has lost *-un-* by haplology. Leumann (*op.cit.* 198) believes that *vēndere* has been formed analogically in accordance with *vēnire* (cf. *reddo* 'I give back': *redeo* 'I go back'). But where does *vēnire* come from? The established sound laws would yield \**vēnumire* > \**vēnuire* (cf. *circumitus* > *circuitus* 'detour'<sup>4</sup>). It has not been easier to account for the origin of *possideo* — on the contrary. The explanation given to *possideo* in (3d) has been suggested by Walde & Hofmann (II 347). Other explanations are to be found in Sommer (*Hb.* 266) and Leu-

<sup>1</sup> F. Skutsch, *Kleine Schriften*. Leipzig 1914, 287 ff.

<sup>2</sup> *Op.cit.* 157.

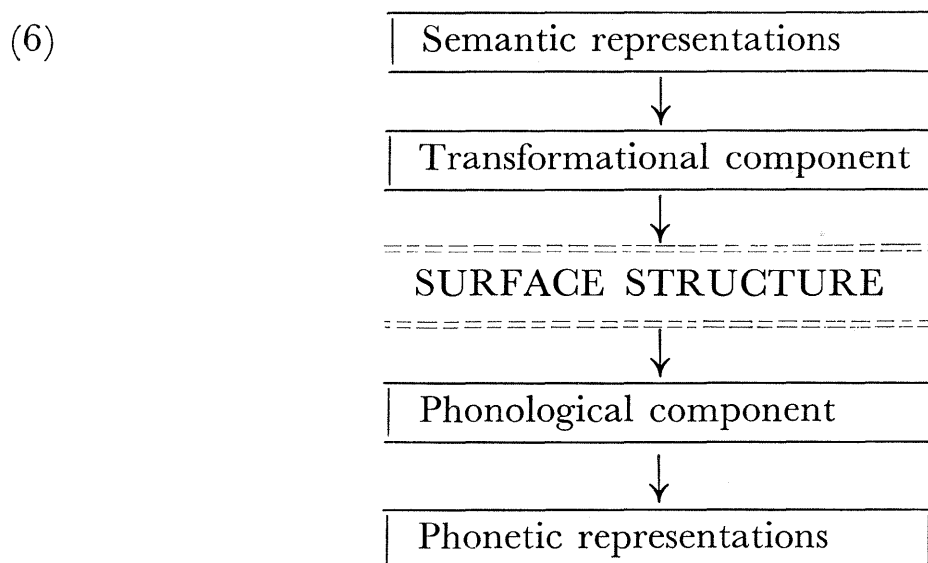
<sup>3</sup> *Op.cit.* 472.

<sup>4</sup> Cf. Liv. 42, 16, 1 *latrones cum brevi circumitu maceriae decurrere ad conficiendum saucium possent*; 31, 39, 15 *brevi circuitu cum in iugum collis evasissent*.



mann (*op.cit.* 102). It seems likely that the juxtaposition hypothesis is unable to give any conclusive solutions to the derivations (diachronic as well as synchronic) of the compounds mentioned above. Apparently, these difficulties are rather of theoretical than material nature. Therefore, it is highly motivated to change the theoretical framework.

So far, we have had very little to say about the verbs POSSUM and MAVOLO. In the sequel, we are going to take up the analysis of these verbs in terms of the transformational generative grammar. We are going to carry out a synchronic analysis of these verbs. I believe, however, that this analysis will not be without diachronic relevance. The organization of a TG-grammar can be presented as follows:<sup>1</sup>



The *semantic representations* defined by the semantic component serve as input to the syntactic transformational component.<sup>2</sup> It is claimed that the semantic

<sup>1</sup> This diagram is a slightly modified version of that presented in J. P. B. Allen & P. van Buren (eds.), *Chomsky: Selected Readings*. Oxford 1971, 106. It reflects the generative semantics position concerning the organization of grammar. The principal motivation for choosing to present the theory of generative semantics instead of the so-called standard theory presented in N. Chomsky, *Aspects of the Theory of Syntax* (Cambr., Mass. 1965) is the fact that the former position seems to be gaining more and more popularity among linguists. — For those confused by the rapid outgrowth of various linguistic schools during the last decade(s) I should recommend the *Overview* of H. Maclay in D. D. Steinberg & L. A. Jakobovits (eds.), *Semantics. An Interdisciplinary Reader in Philosophy, Linguistics and Psychology*. Cambridge 1971, 157—182. The choice of this or that particular TG-framework has no substantial bearing on the discussion to be presented in this paper. Besides the books to be introduced in the following foot-notes, I should recommend these books for further reading: N. Chomsky, 'Current Issues in Linguistic Theory' in J. A. Fodor & J. J. Katz (eds.), *The Structure of Language*. Englewood Cliffs, N. J. 1964; M. Halle, 'Phonology in Generative Grammar', *Word* 18 (1962) 54—72; P. M. Postal, *Aspects of Phonological Theory*. New York 1968.

<sup>2</sup> Allen & van Buren (eds.), *op.cit.* 105—6.

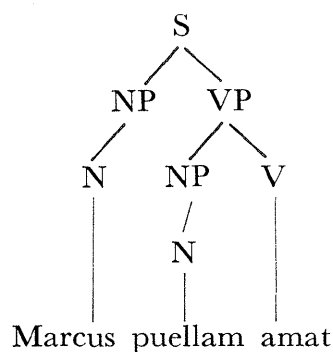
base or the logical structure of sentences is common to all human languages, i.e., semantics is language-independent. Syntax, on the other hand, is language-specific, i.e., the semantic representation SR can be manifested by different syntactic devices in different languages.<sup>1</sup> The *transformational component* is a system of transformations mapping phrase-markers onto phrase-markers.<sup>2</sup> Transformations may be characterized as well-formedness constraints on *syntactic structures* generated by the grammar. Thus, each particular member of the sequence of phrase-markers  $P_1 \dots P_n$  (where  $P_n$  is a surface structure) represents a well-formed syntactic structure.<sup>3</sup> The output of the syntactic transformational component is called a *surface structure*. It consists of units of two types, *segments* and *boundaries* (or *junctures*).<sup>4</sup> The surface structure of the sentence *Marcus puellam amat* can be presented, roughly, as follows:

(7) / # marko + s # puella + m # am + ā + t # /.

The elements /marko/, /puella/, and /am/ are lexical formatives. Each of them belongs to various categories that determine its abstract underlying form, the syntactic functions it can fulfill, and its semantic properties. For example, the formative /puella/ 'girl' belongs to the category of elements with initial voiceless stops, to the category 'noun', to the category 'animate', to

<sup>1</sup> In his review of M. Wandruszka, *Sprachen: vergleichbar und unvergleichlich* (München 1959) in *Journal of Linguistics* 7 (1971) 268—276, E. König gives an instructive account in transformational terms of the fact that it is possible to say in English both *She swam across the river* and *She crossed the river swimming*, in German both *Sie schwamm durch den Fluss* and *Sie durchquerte den Fluss schwimmend*, but in French only *Elle traverse le fleuve en nageant*.

<sup>2</sup> In generative grammar all representations of a sentence are in the form of phrase-markers. A phrase-marker can be visualized as a tree-diagram, the nodes of which are labeled with symbols representing various syntactic categories such as *S(entence)*, *N(oun)*, *P(hrase)*, *V(erb)*, etc. For example, the sentence *Marcus puellam amat* 'Marcus loves the girl' is represented by a phrase-marker as follows:



<sup>3</sup> For more details, see G. Lakoff, 'On generative semantics'. In Steinberg & Jakobovits (eds.), *op.cit.* 232—3.

<sup>4</sup> N. Chomsky & M. Halle, *The Sound Pattern of English*. New York 1968, 364.

the category 'female', etc. This information is presented in the lexicon.<sup>1</sup> In general, the lexical entry contains all information that cannot be accounted for by general rule.<sup>2</sup> The elements /s/, /m/, /t/ are the phonological shapes of the grammatical formatives introduced by transformational rules. The phonological representation /# marko + s #/ consists of six segments, viz. /m/, /a/, /r/, /k/, /o/, /s/, and three boundaries, viz. /#/ , /+/, /#/ . Segments are bundles of distinctive phonological features which characterize language-independent properties of sounds such as consonantality, syllabicity, voicing, frontness, etc.<sup>3</sup> Distinctive features are binary: a given segment either has a certain property (+) or has not (—). Orthographic symbols like /m/, /a/, /r/, etc. are used as informal abbreviations for certain bundles of features.<sup>4</sup> Boundaries are feature complexes, too.<sup>5</sup> For the sake of brevity, we are going to use mnemonic symbols: /#/ represents *word boundary*, /+/, represents *formative* or *'suffix' boundary*.<sup>6</sup>

Surface structure is the input to the phonological component. Phonological rules relate, e.g., the surface structure (7) to the phonetic representation (8):

(8) [márkus puéllam ámat]

Phonological rules are *ordered*. For example, in the synchronic derivation of *lapis* 'stone', they are applied in the following order: 1. voicing assimilation; 2. articulatory assimilation; 3. final degemination:

(9) /lapid + s/  
 lapit + s (Voicing Assimilation)  
 lapis + s (Articulatory Assimilation)  
 lapis + (Final Degemination)  
 [lapis] (Phonetic representation).

Phonological rules are of the form  $a \rightarrow b / c$  (read: *a* goes to *b* in environment *c*). For example, the voicing assimilation rule can be formulated as follows:

<sup>1</sup> Cf. Chomsky & Halle, *op.cit.* 7.

<sup>2</sup> Cf. Chomsky, *Aspects* 87–8; Chomsky & Halle, *op.cit.* 295–8.

<sup>3</sup> For a detailed presentation of distinctive features, see Chomsky & Halle, *op.cit.* 298–329.

<sup>4</sup> In this paper, we are going to use, wherever possible, letters of the alphabet in place of complexes of features. The features to be used will be, we hope, self-explanatory. Phonological representations and their non-terminal derivations will be enclosed with solidi, e.g. /puella/. Phonetic representations are enclosed with square brackets, e.g. [puélla].

<sup>5</sup> See Chomsky & Halle, *op.cit.* 66–7 and 364–371.

<sup>6</sup> One more boundary symbol will be used below, viz. /=/ that represents *compound* or *'prefix' boundary*.

$$(10) [+ \text{obstruent}] \rightarrow [\alpha \text{voice}] / - \left[ \begin{array}{l} + \text{obstruent} \\ \alpha \text{ voice} \end{array} \right]$$

(i.e., an obstruent takes on the voicing value of the immediately following obstruent; it is voiceless if the following obstruent is voiceless, it is voiced if the following obstruent is voiced.<sup>1</sup>) Final degemination can be expressed in terms of the following rule:

$$(11) C_i C_i \rightarrow C_i / - \# \text{ (C = consonant)}$$

We shall first consider the synchronic derivation of the verb POSSUM (par. 1.2), whereupon the verb MAVOLO will be the object for a closer examination (par. 1.3—1.5).

1.2 The paradigm *possum, potes, potest, possumus, potestis, possunt* suggests that the verb consists of the copula and an element /pot/ 'able' which is changed to [pos] by the articulatory assimilation rule:

$$(12) \text{A dental stop is assimilated to the following consonant.}$$

Under the traditional analysis of the verb SUM the root is asserted to be *es*.<sup>2</sup> For the present discussion, I shall accept the analysis proposed by Foley<sup>3</sup> who claims that the root of SUM is /s/ that the *e* is a prothetic vowel whose presence can be accounted for by rule

$$(13) \emptyset \rightarrow e / \# - s + C$$

(i.e., word-initial /s/ gets the prothetic *e* if /s/ is followed by a formative boundary (+) and consonant (C)).

The synchronic derivation of the forms *possum* and *potest* are as follows:

$$(14) \begin{array}{ll} /pot \# s + u + m/ & ^4 /pot \# s + t/ \\ & pot \# es + t \text{ (Rule 13)} \\ pos \# s + u + m & \text{(Rule 12)} \\ [possum] & [potest] \text{ (Phonetic representation).} \end{array}$$

<sup>1</sup> R. D. King, *Historical Linguistics and Generative Grammar*. Englewood Cliffs, N. J. 1969, 43. — On rule formalism, see R. T. Harms, *Introduction to Phonological Theory*. Englewood Cliffs, N. J. 1968, 57—83.

<sup>2</sup> E.g. Leumann, *op.cit.* 310. See also C. Watkins, *Indogermanische Grammatik III/1: Formenlehre*. Heidelberg 1969, 150.

<sup>3</sup> J. Foley, 'Prothesis in the Latin verb *sum*', *Language* 41 (1965) 59—64. The prothesis rule as presented in (13) is from J. Foley, 'Latin second singular imperative', *Canadian Journal of Linguistics* 11 (1966) 118.

<sup>4</sup> I shall omit the derivation of *u* in /s + u + m/ as irrelevant to the present discussion; see Foley, *Lge* 1965, 61.

According to this analysis, the verb POSSUM consists of two underlying elements, /pot/ 'able' and /s/ 'be', which are combined syntactically.

In archaic Latin, it was perfectly possible to say either *potis sum*, *potis es*, *potis est*, etc. or *possum*, *potes*, *potest*, etc.<sup>1</sup> Let us take an example from Plautus:

- (15) a. poplo quoilubet plus satis dare *potis sunt* (*Poen.* 227).  
 b. non *possunt* mihi minaciis tuis hísce oculi ecfodiri (*Mil.* 374).

According to the principles of generative grammar, *potis sunt* and *possunt* are both derived from the same abstract structure that represents their meaning. The superficial difference between them is that *potis* occurs absolutely as an independent word,<sup>2</sup> whereas *\*pot* cannot occur absolutely.<sup>3</sup> This fact can be accounted for by assuming a constraint, according to which the sequence /is/ is added to the formative /pot/ if it is going to occur absolutely. This constraint can be presented formally as the rule

- (16)  $\emptyset \rightarrow \text{is} / \text{CVC} - \#$ .

The function of /is/ in the grammar of, e.g., Plautus is immediately revealed by rule (16). /is/ is an element which is added to certain formatives, the phonological representations of which in the lexicon consist of a CVC (consonant — vowel — consonant) sequence. Examples of this kind of lexical formatives are — in addition to /pot/ — /sat/, /nim/, and /mag/.<sup>4</sup>

That *potis* is an indeclinable word in the grammars of Plautus, Terence, Lucrece, etc. is seen, e.g., in the fact that it is used in the singular as well as in the plural. In (15a), the form is *potis sunt*, not *\*potēs sunt* which would have been ungrammatical for Plautus. *Potis* has an alternative form *pote* which is

<sup>1</sup> *Potis* is found three times in Virgil (*Aen.* 3, 671; 9, 796; 11, 148). Notice that Virgil was *amantissimus vetustatis* (cf. Quint. 1, 7, 18).

<sup>2</sup> *Potis* is able to occur absolutely without the copula, e.g., Plaut. *Epid.* 227 *at tributus quom imperatus est, negant pendi potis* (sc. *esse*). It can as well be juxtaposed to the copula, e.g., *CIL* I<sup>2</sup> 581<sub>27</sub> *potisit*; Plaut. *Mil.* 384 *potisset* (by haplology from *potis(es)set*; see Sommer, *Hb.* 532).

<sup>3</sup> It is also to be noted that there is a 'prefixed' adjective *compos* (gen. *compotis*) 'having the control of' in Latin (e.g., *compos animi* 'of a sane mind'; Ter. *Adelph.* 310), but not *\*pos* (gen. *\*potis*).

<sup>4</sup> The form *fortassis* (for *fortasse* 'perhaps') can be taken as an indirect evidence for the reality of rule (16). Its apparent exceptionality is reflected by the infrequency of its occurrence (it is found in Plautus only 2 times), *Asin.* 493, *Bacch.* 671 [see F. Leo, *Plautinische Forschungen*.<sup>2</sup> Berlin 1912, 300 note 1]; according to *TLL* VI: 1, 1143, 29—32, *fortassis* is to be read in Cicero 6 times: *Cluent.* 144; 201; *Sest.* 12; *Balb.* 61; *Verr.* 3, 107; *ad Q.fr.* 2, 2, 1; editions and manuscripts seem to avoid *fortassis* [cf. H. Sjögren, *Commentationes Tullianae*. Uppsaliae 1910, 128—9]; it is not found in Caesar) as well as its incompatibility with the environment CVC — # of rule (16); cf. Char. *Gramm.* I, 185, 14—6 Keil: *et consuetudine quidem obtinuit ut fortasse libentius diceretur quam fortassis, quoniam fortassis auribus nostris absurdus videtur*.

generally regarded as the neuter form of an old adjective \**potis*, -e.<sup>1</sup> The indeclinability of *pote* becomes apparent from its 'personal' (cf. Walde & Hofmann II 347) use: Ter. *Phorm.* 535: *pote fuisset*.

In conclusion of the synchronic analysis of the verb POSSUM I present very informally a partial derivation of *potis est*:

- (17) / # pot # s + t #/  
       # potis # s + t # (Rule 16)  
       # potis # es + t # (Rule 13)

The derivation procedure of the form *potest* depends on a number of factors which require further study. As yet we have to content ourselves with the somewhat trivial suggestion that the lexical entry /pot/ contains information of the optionality of rule (16).

Why did the word *potis* suddenly disappear from the classical texts? Notice that *potis* did not occur with any other words besides the copula SUM. In the grammar of Plautus, rule (16) had been optional. After that, the lexical entry /pot/ contained an inherent feature which blocked the application of rule (16).<sup>2</sup>

1.3 The underlying lexical representations of *potis* 'able', *nimis* 'too much', *satis* 'enough', and *magis* 'more' are defined by rule (16) as /pot/, /nim/, /sat/, and /mag/. The form *fortassis* gives, as we suggested above, some indirect evidence for the reality of this rule. The lexical representations /nim/ and /sat/ are evidenced also by forms such as *nim-ius* and *sat-ius*. Moreover, the fact that *satis* is often found in the form *sat* indicates that rule (16) applied optionally to /sat/. *Sat* occurs also in the compound *satago* 'I have enough to do, I bustle about' and its derivatives.<sup>3</sup>

<sup>1</sup> Lindsay, *op.cit.* 546; Walde & Hofmann II 347; Leumann, *op.cit.* 310; Kieckers II 319 (cf. Niedermann, *op.cit.* 106). — The status of *potis* is not always expressed clearly by the grammarians; cf. Lindsay, *op.cit.* 546: »*pote* is properly the Neuter of *potis*, e.g. *pote est* (class. *potest*), it is possible, but the Masc. (and Fem.) and Neut. forms are used of any gender and of any number, e.g. *potis est*, it is possible, Ter. *Phorm.* 379 . . .»; C. Bailey (ed.), *Titi Lucreti Cari De Rerum Natura II*. Oxford 1947, 673: »*potis* . . . is used by Lucr. indifferently with masc., fem., or neuter substantives. He also uses the neuter form *pote* in iii. 1079 . . .»; Leumann, *ibid.*; Walde & Hofmann, *ibid.* Synchronically, the form *pote* did not represent any 'neuter' form. It was just a variant of the indeclinable word *potis*.

<sup>2</sup> The instances of *potis* in Lucrece (1, 452; 2, 912, 1096; 3, 468, 1069; 4, 611, 803, 1242; 5, 1, 560, 719) and Virgil (*Aen.* 3, 671; 9, 796; 11, 148) have an archaic flavour. Perhaps we could say that rule (16) had become 'stylistic' with regard to /pot/.

<sup>3</sup> Cf. Pacuv. *Trag.* 72; Ter. *Heaut.* 225; *satago* is surely a compound in Quint. 6, 3, 54 where Domitius Afer says of Mallius Sura: *non agit, sed satagit* 'he's active in fussing' (*Afer enim venuste Mallium Suram, multum in agendo decursantem, salientem, manus iactantem, togam deicientem et repONENTem, non agere, dixit, sed satagere*).

The underlying forms of *magnus*, *maior* (phonetically [majjor] ), and *maximus* are roughly, /mag + nus/, /mag + jōs/, and /mag + simus/.<sup>1</sup> Rule (16) gets additional motivation from the fact that these forms are instances of the pattern *mag* + *Suffix*. From the synchronic point of view, it is not, however, self-evident that *māvolo* is derived from an underlying /magwolo/.<sup>2</sup> It is not impossible to think that, after rule (16) has applied to /mag/, *magis* and *volo* are joined into a word group (juxtaposition) by the same rule that generates, e.g., *magister* 'leader' and *sinister* 'left' (the underlying forms of which are /mag + is + teros/ and /sin + is + teros/). Moreover, it is possible to add a deminutive suffix to the comparative suffix,<sup>3</sup> e.g., *nitidius-culus* 'somewhat more shining' (Plaut. *Pseud.* 220), *unctius-culus* 'somewhat unctuous' (Plaut. *Pseud.* 221), *tardius-culus* 'somewhat slow' (Ter. *Heaut.* 515), *minus-culus* 'rather small' (Plaut. *Trin.* 888; Cato, *Agr.* 12; Cic. *Att.* 14, 13, 5), *frigidius-culus* 'somewhat frigid' (Gell. 3, 10, 16). However, this device is used quite infrequently.

The assumption that *māvolo* is derived also synchronically from /magiswolo/ presupposes application of the syncope rule. Therefore, we have to examine the conditions under which vowel syncope can take place. After that, we have to decide whether syncope is a phonologically natural link in the synchronic process from /magiswolo/ to [māwolo].

The vowel to be syncopeated must be short. The /i/ in /magiswolo/ is compatible with this condition.

The consonant sequence resulting from syncope must not be phonotactically ungrammatical (e.g., *conf(a)cio* → \**confcio*).<sup>4</sup> The resulting consonant sequence

<sup>1</sup> See (25).

<sup>2</sup> We shall render the semivowel *v* as /w/ in phonological and [w] in phonetic representations.

<sup>3</sup> The *-is* in *magis* is historically the zero grade variant (acc. sing. neuter) of the comparative suffix; J. Schmidt, 'Das primäre comparativsuffix', *KZ* 26 (1883) 385; Sommer, *art.cit.* 56, 58; Lindsay, *op.cit.* 404.

<sup>4</sup> W. M. Lindsay (*T. Macci Plauti Comoediae*, tomus II. Oxonii 1966 [1905]) claims that the word *vidulus* is to be syncopeated in Plaut. *Rud.* 1106 *quid id ad uid[u]lum pertinet, seruae sint istae an liberae?*; 1127 *cedo modo mihi istum uid[u]lum, Gripe*; 1130 *estne hic uid[u]lus ubi cistellam tuam inesse aiebas?* (see, however, *Addenda et corrigenda* ix, ad 1130: »fort. vidulus estne hic»). The same is suggested by E. A. Sonnenschein (*T. Macci Plauti Rudens*, ed. minor, Oxford 1961 [1901], 124 (ad 936) ) who adds 999 (cf. Lindsay, *ed.cit.* ad 999: »vix vidlum»). Leo, *op.cit.* 264–5, gives metrical arguments against the syncopeated forms. He does, however, admit that, in principle, syncope in *vid(u)lus* would be possible (»Synkopiertes *vidulus* ist an sich denkbar . . .»). Leo could have strengthened his argument by denying the possibility of syncope in *vidulus* on account that the consonant sequence \**dl* which would have resulted from syncope would have been phonotactically ungrammatical and changed to *ll* automatically (cf. \**sed-la* > *sella*; *grad-la* > *gralla*; *ad-loquor* > *alloquor*; Niedermann, *op.cit.* 147). This process would have yielded a legion of homonyms. Had the *u* in *vid(u)lus* been syncopeated the phonetic output would have been \**villus*. In Vulgar Latin and Romance languages, there are only few in-

must not trigger out phonological processes, the output of which would destroy associative relations between various forms of the same word (e.g., *pectus-is* → *\*pectis-is* → *\*pecs-is* → *\*pexis* (pro *pectoris* 'of the breast')).<sup>1</sup> /magswolo/ can be related to independently motivated rules. Also this condition is met by /magiswolo/.

The vowel to be syncopated must be contiguous to /r/, /l/, /m/, /n/, /w/, /j/.<sup>2</sup> Although the conditions under which vowel syncope took place differed at different periods, this segmental environment can be regarded as most natural and persistent. During the history of the language a few exceptions such as *frigidaria* 'provision-room' (Lucil. 317 Marx), *compostus* 'put together' (Lucil. 84 M.; Verg. *Aen.* 1, 249), *depostus* 'put down' (Lucil. 105 M.), etc. can be picked out.<sup>3</sup> The segmental environment of /i/ in /magiswolo/ is not very favourable for syncope. However, this is no conclusive evidence against the underlying form /magiswolo/.

The vowel to be syncopated must occur in an open syllable.<sup>4</sup> This constraint can also be regarded as underlying the first condition according to which the vowel to be syncopated must be short.<sup>5</sup> Again there are a few exceptional instances. Forms such as *surpta* (for *surrepta* 'stolen') in Plaut. *Rud.* 1105; *sortus* (for *surrectus* 'arisen') in Livius Andronicus (see Paul. Fest. 423 I Th.) are accidental and analogical creations. In the forms *iūstus* 'upright' (< *\*jów(e)-stos*) and *faustus* 'favourable' (< *\*fáv(e)stos*) /e/ is preceded by /w/.<sup>6</sup> The

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stances of words resulting from the syncopation  $dVl > *d\emptyset l$  (where V = vowel and  $\emptyset$  = zero); e.g., *mod(u)lus* Fr. *moule* (< *molle* < *modle*); Prov. *motle*; Sp. *molde* (< metathesis *modle*). This can be regarded as an evidence for the claim that the consonant sequence *\*dl* did not meet the condition according to which the consonant sequence resulting from syncope must not be phonotactically ungrammatical nor trigger out processes which would yield homonyms. (The consonant sequence *\*tl* was ungrammatical, too. It was made grammatical by applying the rule which changed *\*tl* to *cl*; e.g., the 'instrumental' suffix *\*-tlom* was changed to *-clom* (> *-culum*); this rule was operative during the whole Latinity; cf. App. Pr. 5 *vetulus*, *non veclus*; 6 *vitulus*, *non viclus*; 167 *capitulum*, *non capiclum*).

<sup>1</sup> Cf. H. Rix, 'Die lateinische Synkope als historisches und phonologisches Problem', *Kratylos* 11 (1966) 163–4. The notion of associative relation is, however, rather indeterminate. The change *māvolo* > *mālo* has not, obviously, destroyed the associative relations between *mālo* and, e.g., *māvultis*.

<sup>2</sup> Cf. Rix, *art.cit.* 156.

<sup>3</sup> Syncope of a vowel between two identical stops, as in *repperi* (< *\*repeperi*), *rettuli* (< *\*rete-tuli*), and *reccidi* (< *\*rececidi*), is facilitated by the Latin tendency to drop one or two neighbouring syllables of like sound; see Lindsay, *op.cit.* 179.

<sup>4</sup> Sommer, *art.cit.* 38, 57; Niedermann, *op.cit.* 38; Rix, *art.cit.* 156.

<sup>5</sup> Arguments in favour of this claim are to be found in R. A. Zirin, *The Phonological Basis of Latin Prosody*. The Hague & Paris 1970, 65–80.

<sup>6</sup> Moreover, the consonant group *s[voiceless stop]* seems to be rather favourable for syncopation, especially when preceding a stressed vowel, see Rix, *art.cit.* 156. — Niedermann, *op.cit.* 38, considers *auspex* 'bird-watcher' an analogical form: *au-ceps* 'fowler' (< *\*avi-ceps*) / [X]-*spex*.



segmental environment of /i/ in /magiswolo/ in conjunction with its position in the syllable form a very strong evidence against the underlying form /magiswolo/. It is also to be noted that *magister* is not syncopated.

The vowel to be syncopated must be unstressed.<sup>1</sup> In historical Latin, the stress rule assigns stress to the penultimate syllable of polysyllabic words if that syllable has the canonical form (C)VC<sup>2</sup> and to the antepenultimate syllable if the penultimate contains a short vowel followed by at most one consonant. According to the penultima law, /magiswolo/ is stressed /magís-wolo/. From synchronic point of view, this renders it entirely impossible to assume that /i/ is syncopated.

The three above paragraphs from a conjunct evidence against the synchronic derivation of *māvolo* from the underlying form /magiswolo/. Moreover, it is possible to show that the assumption of the underlying form /magiswolo/ leads to a paradoxical situation. Let us consider the following sentences:

- (18) a. liberare vos a Philippo iam diu *magis vultis* quam audetis (Liv. 32, 21, 36).<sup>3</sup>  
 b. Charopus renuntiari iubet, ita crederet, ut suae potius omnia quam illius potestatis essent. cum *magis vellet* credere quam auderet . . . , auctoritate motus Charopi experiri spem oblatam statuit (Liv. 32, 11, 4—5).<sup>4</sup>
- (19) a. et vobis restituendi vos in amicitiam societatemque nostram fortuna oblata est, nisi perire cum Philippo quam vincere cum Romanis *mavultis* (Liv. 31, 31, 20).<sup>5</sup>

It is possible to give two other explanations which are both more probable from the synchronic point of view: (1) We can admit with Rix that vowels may be syncopated when preceding *s* [voiceless stop]. (2) The underlying /awispeks/ is to be syllabified /a.wi.speks/, because there is a strong juncture between /awi/ 'bird' and /speks/ 'watcher'; cf. /lekti.sternium/ 'meal of the gods' (not /lectis.ternium/), /ad.esse/ 'to be present' (not /a.desse/), /prae.stringere/ 'to strangle' (not /praes.tringere/), etc., see Niedermann, *op.cit.* 183.

<sup>1</sup> Lindsay, *op.cit.* 170; Sommer, *Hb.* 133.

<sup>2</sup> According to Zirin's analysis (*op.cit.* 72), this formula represents a syllable containing a long vowel or a short vowel followed by two or more consonants. This is implied also by the traditional notion of 'strong' syllable.

<sup>3</sup> »For a long time you have wished, but not dared, to free yourselves from Philip» (E. T. Sage, *Livy with an English translation*, vol. IX. London & Camb., Mass. 1953 [1936], 221).

<sup>4</sup> »Charopus ordered the message back to be that he should trust him, but only so far as to keep the control of the situation in his own hands rather than in the shepherd's. Wishing, rather than venturing, to trust him . . . , he was persuaded by the assurances of Charopus and determined to use the change presented to him . . . » (Sage, *tr.cit.* 183).

<sup>5</sup> ». . . and to you, accordingly, is offered the opportunity of reinstating yourselves in our alliance friendship, unless you prefer perishing with Philip to conquering with the Romans» (Sage, *tr.cit.* 95).

- b. in vestro arbitrio suum ornatum quam in legis *malunt* esse (Liv. 34, 7, 13).<sup>1</sup>

The sentences in (18) and (19) contain interesting variation between the 'full' form *magis volo* and the 'syncopated' form *māvolo*. This variation must not be overlooked in synchronic analysis (and it is probable that this holds true in diachronic analysis, too). The 'full' form and the 'syncopated' form are certainly not in free variation. In (18a), Livy says *magis vultis quam audetis*, because the intonation in *\*mavultis quam audetis* would probably have sounded strange.<sup>2</sup> The sentences in (18) and (19) differ from each other in their 'information structure'.<sup>3</sup> Utterance can be regarded as consisting of two fundamental thematic parts, viz. the 'theme' (the thing already known and spoken about) and the 'rheme' (what is said about the theme). The theme has minimal utterance dynamity, the rheme the maximal one. The center of intonation is always located on the rheme.<sup>4</sup> In (18a), the 'new' element in the text — the rheme — is the contrast between *vultis* and *audetis*. The center of intonation is located on them (especially on *vultis*): *magis vultis quam audetis*. The same holds true in (18b) as well. The theme is *credere*, the rheme (*magis*) *vellet (quam) auderet*. In this context, the intonation *\*magis vellet credere quam auderet* would be absurd. In (19a), on the other hand, the theme is *mavultis* and the rheme *perire (cum Philippo quam) vincere (cum Romanis)*. The center of intonation is located on *perire* and *vincere*. In (19b), the main stress is on *vestro* and *legis*.

These examples show that the choice between the 'full' form and the 'syncopated' form depends on the intonation pattern of the utterance. When the main stress is assigned to *volo*, *magis* is not syncopated: *magis volo*. When the main stress is not assigned to *volo* (i.e., when *volo* is not the rheme), *magis* and *volo* are united into the word group /magiswolo/ with a single stress: /magiswolo/. The paradox arises from this. The assumption of the underlying form /magiswolo/ presupposes that /i/ is syncopated, when stressed, and not syncopated when unstressed. Given that the general conditions on syncope are

<sup>1</sup> »They prefer to have their finery under your control and not the law's; ...» (Sage, *tr.cit.* 439).

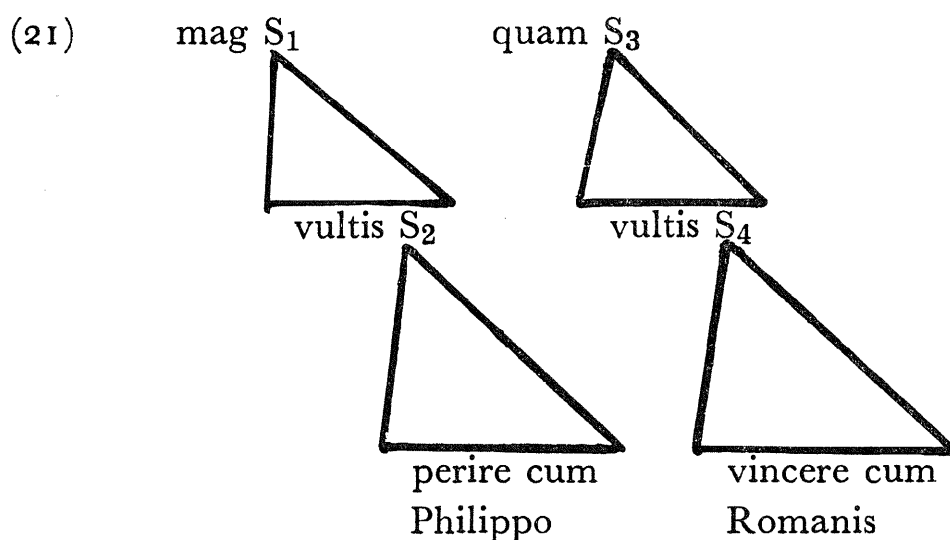
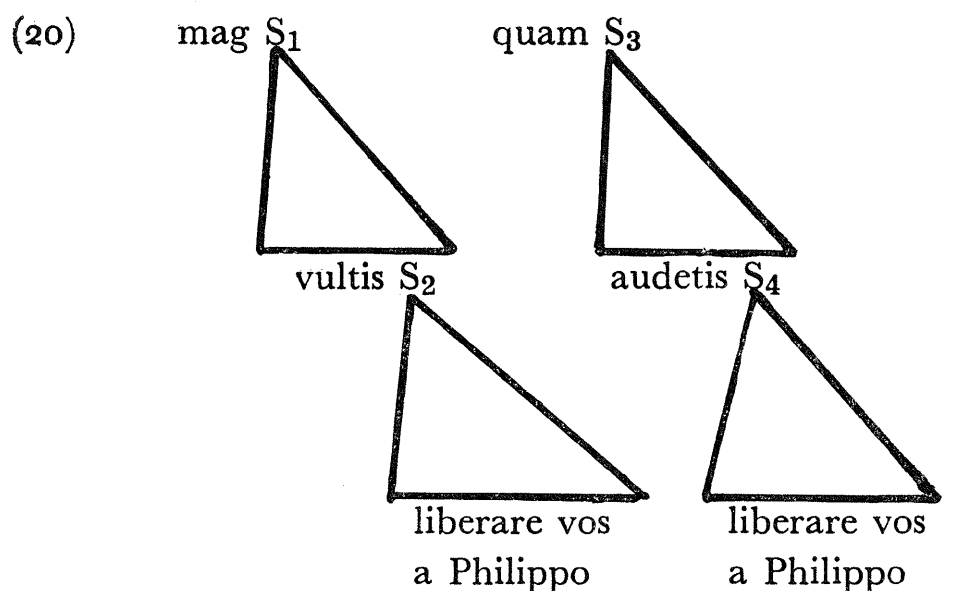
<sup>2</sup> The oddity of this sentence is comparable to the oddity of the English sentence *\*Joan's taken more from you than Bill's from me*. Notice that the sentence *Joan's taken some from you* is grammatical. Cf. H. V. King, 'On Blocking the Rules for Contraction in English', *Linguistic Inquiry* 1 (1970) 134.

<sup>3</sup> This term has been borrowed from M. A. K. Halliday, 'Language Structure and Language Function' in J. Lyons (ed.), *New Horizons in Linguistics*. Pelican Books 1970, 162–4.

<sup>4</sup> See F. Daneš, 'Sentence Intonation from a Functional Point of View', *Word* 16 (1960) 45–6.

met, this is exactly the opposite of what we should expect. Vowels in pretonic position are apt to be syncopated, as can be seen in the fact that, e.g., \**propiter* has changed to *propter*, when functioning as a preposition.<sup>1</sup>

1.4 In the beginning of section 1.3 we made the empirical hypothesis that *māvolo* is derived synchronically from /magiswolo/. It is evidenced by the above considerations that this hypothesis must be abandoned. Instead, we are entitled to assume that *māvolo* comes from the underlying form /magwolo/. Let us try to present the difference between (18a) and (19a) in terms of diagrams (phrase-markers). The irrelevant nodes have been omitted.



<sup>1</sup> Cf. Sommer, *art.cit.* 5: »... der Vokalverlust in *propter* ist ... dem Umstande zuzuschreiben, dass es häufig *proklitisch* als Präposition verwandt wurde, und die Proklise war ebenfalls geeignet, Synkopierung hervorzurufen ... » (cf. *idem* 41).

Diagrams (20) and (21) represent quite informally the sentence structure of (18a) and (19a), respectively.  $S_2$  and  $S_4$  are called *embedded* sentences.<sup>1</sup>  $S_1$  is the *matrix* sentence of  $S_2$ , and  $S_3$  that of  $S_4$ . In (18a (= 20)), the embedded sentences are anaphoric, i.e.,  $S_2 = S_4$ . Therefore, there is no need to repeat  $S_4$  in the surface structure. The predicates of the matrix sentences  $S_1$  and  $S_3$  contain the new information: wishing is being contrasted to venturing. The contrastive stress is assigned to *vúltis*.<sup>2</sup> In (19a (= 21)), on the other hand, the matrix sentences  $S_1$  and  $S_3$  are anaphoric. The embedded sentences  $S_2$  and  $S_4$  contain the new information. Therefore, the center of intonation is located on  $S_2$ .

Let us observe the morpheme group /mag wolo/ on the basis of the above considerations. We shall restrict ourselves to the internal stress relations between these two formatives and disregard the fact that, e.g., the phrase *quam in legis malunt esse* in (19b) forms a single 'word', the center of which is *legis* that bears the primary stress. In sentences such as (18) the stress is assigned to the verb *vólo*. In addition, /mag/ is realized as *magis*. We shall see that both of these things result from the same source. In (22a), this situation is visualized by presenting the (incomplete) input and the output of the process relating the underlying forms of 'I prefer, you prefer, etc.' to their actual phonetic forms. In sentences such as (19) the primary stress is assigned to the most important constituents of the embedded sentences. At the sentence stress level, *māvultis* and *mā(vo)lunt* can be regarded as clitics. When the constituents /mag/ and /wolo/ are singled out of the context, it can be seen that /mag/ receives a relatively stronger stress than /wolo/. This situation is visualized in (22b).

(22)	<i>Input</i>	<i>Output</i>
a.	/mag wólo/	— — — [magis wólo]
	/mag wís/	— — — [magis wís]
	/mag wúlt/	— — — [magis wúlt]
	/mag wólumus/	— — — [magis wólumus]
	/mag wúltis/	— — — [magis wúltis]
	/mag wólunt/	— — — [magis wólunt]

<sup>1</sup> On embedding, see D. Bolinger, *Aspects of Language*. New York, etc. 1968, 76—7.

<sup>2</sup> Cf. I. Lehiste, *Suprasegmentals*. Cambridge, Mass. 1970, 151: »Contrastive stress occurs in sequences of sentences with parallel constituents that are filled with different morphemes. — — — Contrastive stress is used to distinguish a particular morpheme from other morphemes that may occur in the same position.»

<i>Input</i>	— — —	<i>Output</i>
b. /mág wolo/	— — —	[má(wo)lo]
/mág wis/	— — —	[máwis]
/mág wult/	— — —	[máwult]
/mag wólumus/	— — —	[mā(wó)lumus]
/mag wúltis/	— — —	[māwúltis]
/mág wolunt/	— — —	[má(wo)lunt]

The input forms in (22) have been specified incompletely. They do not indicate the reason why the stress does (or can) not shift to /mag/ in (22a). Nor do they indicate the reason why /mag/ becomes [magis] in (22a), but not in (22b). We can describe this phenomenon in terms of junctures. We shall suppose that the juncture between /mag/ and /wolo/ in (22a) is dissimilar to that in (22b). These junctures can be characterized in terms of their behaviour with respect to stress placement:<sup>1</sup> The juncture in (22a) prevents the shift of stress to /mag/. We shall identify this 'strong' juncture as the # boundary (word boundary). The juncture in (22b), on the other hand, does not prevent the shift of stress to /mag/. We shall identify this 'weak' juncture as the compound or 'prefix' boundary =.

Now, it can easily be seen that the # juncture is the source for both the *is* in *magis* and the constant stress in the first syllable of the verb *volo*: Rule (16) predicts that /mag/ becomes [magis] before the # boundary. The Latin stress rule does not apply across the # boundary, whereas it does apply across the = boundary, as can be seen in the following cases:

- (23) a. /# dé = fero #/ — — — [défero] 'I bring down'  
 b. /# de # féro #/ — — — [deféro] 'of the wild'<sup>2</sup>

This situation is quite similar in (22). As an example, we present a partial derivation of the forms *magis volo* and *māvolo*:

- (24) /# mag # wolo #/    b. /# mag = wolo #/

<sup>1</sup> Chomsky & Halle, *op.cit.* 371: »Suppose that we place boundaries in the natural hierarchy #, =, +. It is then possible to formulate many phonological rules in such a way that they apply only within the domain of a given boundary, but not across any other boundary that takes precedence over it in the hierarchy. Thus in certain languages the stress placement rule can be thought of as applying in the environment # X #, where X contains no word boundary but may contain the other boundaries, + or =, which are lower in hierarchy.»

<sup>2</sup> On the graphemic level, the phonological # juncture is realized as word space (cf. *defero* and *de fero*). However, *de* is proclitic.

# mag # wólo #	# mág = wolo #	(Stress placement) <sup>1</sup>
# magis # wólo #		(Rule 16)
-----	-----	
-----	-----	
[magis wólo]	[máwolo]	(Phonetic representation).

1.5 In (24b), only partial derivation of the phonetic representation [máwolo] was put forth. In this section, we shall present the rest of this derivation. The phonological difficulties we have to deal with are essentially of the same nature as in the diachronic process (1b).

It may be in order to consider first the behaviour of /g/ before /j/. Observe the following instances of the word MAGNUS:

- (25) a. positive: *magnus* 'big'  
 b. comparative: *maior* [majjor] 'bigger'  
 c. *magis* 'more'  
 d. superlative: *maximus* [maksimus] 'biggest'

The underlying forms of (25a) and (25d) are /mag + nus/ and /mag + simus/, respectively. The 'surface' form *magis* is predicted by rule (16). We have to assume that the underlying form of [majjor] is /mag + jos/.<sup>2</sup> It can be related to [majjor] by rule

- (26)  $g \rightarrow j / \text{---} j$

which assimilates /g/ to the following /j/. This is the most popular — although not the only — explanation.<sup>3</sup> The glides /j/ and /w/ form a natural class in the phonological theory.<sup>4</sup> Therefore, it is to be expected that they behave

<sup>1</sup> The stress placement is strongly oversimplified in this derivation. It should have been presented as a cyclic rule (see Chomsky & Halle, *op.cit.* 26—43 and 59—162). As I have no clear idea of the details of the syntactic derivation of comparative structures, I have omitted this side of the topic. The exact status of / mag / in the surface structure (e.g. in regard to its bracketing) is, for the time being, not very clear, either.

<sup>2</sup> Opinions concerning the phonological status of *j* in Latin differ greatly. Let us give only two examples of opposite opinions: D. H. Kelly, 'Distinctive Feature Analysis in Latin Phonology', *AJPh* 88 (1967) 74, considers *j* a phoneme. Ž. Muljačić, *Fonologia generale e fonologia della lingua italiana*, Bologna 1969, 508, regards *j* as a non-vocalic variant of the /i/ phoneme.

The solution given above presupposes that *j* is a systematic phoneme in Latin. Note that /gi/ in *magis* does not change to \**mais*.

<sup>3</sup> See, e.g., Kent, *Sounds* 120; Sommer, *Hb.* 217. — Lindsay, *op.cit.* 292, suggests \**mahior* > *major* (cf. O. Ind. *māhīyas-*). According to A. Ernout & A. Meillet, *Dictionnaire étymologique de la langue latine*, Paris 1932, 550, the comparative form comes from the \**mē* or \**mō-* stem.

<sup>4</sup> In terms of distinctive features /j/ and /w/ are both  $\left[ \begin{array}{l} \text{--- consonantal} \\ \text{--- vocalic} \end{array} \right]$ .

similarly in similar environments. Lindsay (*op.cit.* 547) and Kent (*Sounds* 143) postulate a parallel sound law that can be presented as a phonological rule as follows:

$$(27) \quad g \rightarrow w / \text{---} w$$

/g/ is assimilated to the following /w/. Rules (26) and (27) could be combined to the following effect:

$$(28) \quad /g/ \text{ is assimilated to following glides.}$$

The derivation of *māvolo* could be carried out by applying rule (28) to /magwolo/. Unfortunately, a rule such as (28) does not explain very much. It seems to me, however, that the behaviour of /g/ before glides could be related to a more general phonological process. Consider the following instances of the word NIX:

- (29) a. *nix* [niks] 'snow'  
 b. *nivis* 'of the snow'  
 c. *ninguit* 'it is snowing'.

The morphophonemic alternations in this word are best accounted for by assuming the underlying forms /nig<sup>w</sup>s/, /nig<sup>w</sup>is/, /ning<sup>w</sup>it/, respectively. The form [niks] in (29a) is the output of the rule which delabialized labiovelars before obstruents. *Ninguit* has preserved its labiovelar after /n/. The form *nivis* must be accounted for by postulating rule

$$(30) \quad g^w \rightarrow w / V \text{---} V$$

which changes /g<sup>w</sup>/ to /w/ between vowels. Notice that the underlying form of *nivis* cannot be /nig<sup>w</sup>is/, because rule (28) would yield the incorrect form \**nīvis*.<sup>1</sup> Rule (30) does not explain very much, either. Intuitively, rules (26),

<sup>1</sup> The phonological status of the labiovelars has been one of the perennial controversies in Latin phonology. There is no need for reviewing the comparatively rich literature on this topic. Suffice it to say that the most recent discussor of this matter, R. A. Zirin (*The Phonological Basis of Latin Prosody* 1970) interprets the graphemes *qu* and *gu* as a sequence of two phonemes. Although I agree to a great extent with his criticism directed towards the earlier discussions of this matter, I am not convinced of the diphonemic status of the labiovelars. In my review of Zirin (to appear in *Gymnasium* 1972), I have presented some critical notes on his arguments. This paper can be regarded as an entirely new argument in favour of the monophonemic interpretation of the labiovelars. Because the underlying /magwolo/ yields the correct [māwolo], but the underlying /nig<sup>w</sup>is/ (according to the diphonemic interpretation) yields the incorrect \*[nīwis], the phonologist is compelled to postulate another underlying form for *nivis*.<sup>2</sup> It is beyond any reasonable doubt that it is /nig<sup>w</sup>is/. This analysis entails the monophonemic interpretation of the labiovelars.

In the diachronic dimension situations of this kind form no compelling evidence for or

(27), and (30) seem to describe very similar processes. It is therefore highly motivated to replace them by one rule that is capable of characterizing the common denominator of these rules:

$$(31) \left. \begin{array}{l} \text{a. } g \rightarrow j / V \text{ — } jV \text{ (26)} \\ \text{b. } g \rightarrow w / V \text{ — } wV \text{ (27)} \\ \text{c. } g^w \rightarrow w / V \text{ — } V \text{ (30)} \end{array} \right\} (28) \left\{ \begin{array}{l} \text{[The rule characterizing the com-} \\ \text{mon denominator of (26), (27), and} \\ \text{(30) ]} \end{array} \right.$$

We shall assume that the common denominator is the fricativization of the voiced velar stop, when it is exposed to a 'sufficient dose of glideness'.

$$(32) \left. \begin{array}{l} \text{a. } \left[ \begin{array}{l} gw \rightarrow \gamma w \\ gj \rightarrow \gamma j \\ g^w \rightarrow \gamma^w \end{array} \right] \\ \text{b. } \left[ \begin{array}{l} gw \rightarrow \gamma w \\ gj \rightarrow \gamma j \\ g^w \rightarrow \gamma^w \end{array} \right] \\ \text{c. } \left[ \begin{array}{l} gw \rightarrow \gamma w \\ gj \rightarrow \gamma j \\ g^w \rightarrow \gamma^w \end{array} \right] \end{array} \right\} / V \text{ — } V$$

As we can see in (32a—c), the conditions on the 'sufficient dose of glideness' are met if

- (33) a. /g/ is followed by a glide.  
 b. /g/ contains the phonological feature [ + round].

Rule (32) is expressed in terms of distinctive features as follows:

$$(34) \left[ \begin{array}{l} + \text{ consonantal} \\ + \text{ high} \\ + \text{ voice} \\ - \text{ continuant} \end{array} \right] \rightarrow [- \text{ cont.}] / [- \text{ cons.}] \left[ \begin{array}{l} - \\ \alpha \text{ round} \end{array} \right] \left[ \begin{array}{l} - \text{ cons.} \\ \alpha \text{ vocalic} \end{array} \right]$$

Rule (34) states that /g/ is changed to /γ/ in the following cases:<sup>1</sup>

against alternative solutions. For example, when Solmsen (*op.cit.* 57) pointed out that »aus *māgvolo māgvīs* konnte nach den lautgesetzen nichts anderes als \**māvolo \*māvis* werden, vgl. *flōvius brēvis lēvis* u.a.», Sommer (*art.cit.* 57) could give the laconic answer: »Andere Zeiten, andere Lautgesetze». Cf. Leumann, *op.cit.* 157.

<sup>1</sup> The condition (33a—b) on the 'sufficient dose of glideness' and rule (34) describe correctly the Latin data. However, as it has been pointed out to me by T. Viljamaa, condition (33b) precludes the theoretical possibility that /g<sup>j</sup>/ → /γ<sup>j</sup>/ (although there are actually no palatalized consonants in Latin). Therefore, condition (33b) has to be modified so that this relevant generalization can be caught. Labialization (rounding) and palatalization can be characterized acoustically as a deviation from the normal (plain) tonality of the primary articulation. Labialization is characterized acoustically as flattening. It is a lowering of the tonality feature (generally manifested by a downward shift of the higher formants). Palatalization is characterized acoustically by sharpening. It is a rising of the tonality feature (manifested in a slight rise of the higher formants); cf. Harms, *op.cit.* 31; Muljačić, *op.cit.* 138—9, 142; R. Jakobson, C. G. M. Fant & M. Halle, *Preliminaries to Speech Analysis*. Cambridge, Mass. 1963 [1951], 31. In terms of acoustically defined phonological features, labialized consonants are [+ flat], palatalized consonants are [+ sharp]. The class of consonants that are either [+ flat] or [+ sharp] is characterized





that a voiced fricative disappears before a (voiced) consonant and the preceding vowel — in case it is short — is lengthened, or

$$(38) \quad V \begin{bmatrix} + \text{ cons} \\ + \text{ cont} \\ + \text{ vce} \end{bmatrix} C \rightarrow \bar{V} \emptyset C.$$

Rule (38) precedes rule (37) in the phonological component.

Now, we are able to derive *nīvis*, *māvolo*, and *traho*:

$$(39) \quad \begin{array}{lll} /nig^{wis}/ & /magwolo/ & /traxo/ \\ ni\gamma^{wis} & ma\gamma wolo & \text{(Rule 34)} \\ & m\bar{a}wolo & \text{(Rule 38)} \\ ni6^{wis} & traho & \text{(Rule 37)} \\ [niwis] & [m\bar{a}wolo] & [tra(h)o] \text{ (Phonetic representation)} \end{array}$$

It is impossible to determine the phonetic value of /h/ in Latin. Some grammarians presume that /h/ was phonetically zero, some, on the other hand, suggest that /h/ was realized as a weak aspiration.<sup>1</sup> The voiced /6/ was realized directly as zero. Thus, /ni6<sup>wis</sup>/ → /ni<sup>Ø</sup>wis/ → [niwis].

## 2 Conclusions and Historical Implications

The main argument of this paper is that *māvolo* cannot be derived *synchronically* from /magiswolo/, since this underlying form is incompatible with syncope conditions. Moreover, from the synchronic point of view, it would be difficult to explain why *magister* is not syncopated. The diachronic facts are not, however, immediately recoverable from the results of a synchronic analysis. Linguistic change may be considered a reorganization of (a part of) the grammar. The forms *magis*, *nimis*, *potis*, and *satis*, which were analyzed as derived — in classical Latin — from the underlying forms /mag/, /nim/, /pot/, and /sat/ by the application of rule (16) are genetically heterogenous. Their diachronic underlying forms are not recoverable from the synchronic analysis.

<sup>1</sup> Niedermann (*op.cit.* 12): »h, das in klassischer Zeit so wie heute im Französischen stumm war . . .»; Sommer (*Hb.* 192): ». . . es ist fraglich ob es [sc. h im Inlaut] bei Beginn der literarischen Periode überhaupt noch einen phonetischen Wert . . . besass.»

Kent (*Sounds* 56): »H . . . was in classical Latin a weak breathing like h in English . . .»; Pisani (*op.cit.* 53): »h . . . era una lieve aspirazione, poco udibile in principio e ancor meno nel mezzo di parola . . .».

*Nimis* comes historically from the root \**mei-* 'to make smaller': *ne-mīs* 'not too little'.<sup>1</sup> *Potis* is historically related to Gr. *πόσις* and Skt. *pātis* 'master, husband'. This original substantive was adjectivized later: \**potis,-e* (attested only indirectly by the comparative forms *potior* 'better' and *potius* 'rather'). *Satis* is originally a substantive meaning 'sufficiency'.<sup>2</sup>

The synchronic facts provided by this investigation cannot suggest any positive solutions to the diachronic problem of the basic form of *māvolo*. Nevertheless, — to say the least — it can narrow the range of alternative diachronic solutions by bringing forward some pieces of negative evidence and by throwing light on some phonological problems. According to the current opinion, the historical basic form of *māvolo* is \**magisvolo* (see (1a)). This is highly improbable. From the synchronic point of view, the arguments against the underlying form /magiswolo/ were as follows: (a) The segmental environment of /i/ is unfavourable for syncope. (b) /i/ is in a closed syllable, which does not favour syncope. (c) The Latin stress rule assigns the stress to /i/. It is impossible for a stressed vowel to be syncope. Arguments (a) — (b) are valid also diachronically. Argument (c) is ruled out by the alleged initial stress of pre-literary Latin. The phonological naturalness conditions on syncope presented in par 1.3 must be regarded as valid in every diachronic period of Latin language, and any historical grammarian overrunning them must bear the burden of justifying his deviation from the phonological naturalness defined by these conditions. It seems to me that the phonologically unnatural \**magisvolo* has been justified by the fact that the process relating \**mag(e)volo* to *māvolo* has been regarded as still more unnatural.<sup>3</sup> Par. 1.5 was devoted to this phonological problem. It was found that the process relating /magwolo/ to [māwolo] was essentially the compensatory lengthening of /a/ before a voiced velar fricative. The reanalysis of the behaviour of voiced velar stops as well as the reinterpretation of the compensatory lengthening of vowels enable us to challenge the negative justification of the basic form \**magisvolo*. With a view to the phonological naturalness, it turns out that the basic form \**magevolo* in (1 b) is more natural — if we accept the juxtaposition hypothesis. However, there are compounds like *vēneo* 'I am

<sup>1</sup> See Sommer, *art.cit.* 95—6; Leumann, *op.cit.* 96. The suggestions of Muller, *AitWb.* 287 (\**nem-* 'to take') and of F. A. Wood, 'Notes on Latin Etymologies', *CPh* 7 (1912) 313 (\**nim*, \**neim* 'strong, powerful') are generally rejected.

<sup>2</sup> See Lindsay, *op.cit.* 558.

<sup>3</sup> Cf. Sommer, *Hb.* 536.

sold', *possideo* 'I possess', *mando* 'I entrust',<sup>1</sup> etc., which may turn out to be no juxtapositions at all. And it might be the case that *māvolo* will be one of them.

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<sup>1</sup> On *mando*, see Muller, *AitWb.* 255; E. Wölfflin, *ALL* 13 (1904) 49; Walde & Hofmann II 25.