

## PARADIGMATIC FACTORS IN THE IRRADIATION OF ALLOMORPHY: THE REANALYSIS OF THE LATIN TYPE *MANUALIS* IN ITALIAN

### Abstract

Latin derivatives in *-alis*, *-are* (infinitive), *-arius*, and *-osus* show a *-u-* between root and suffix if the root is a fourth declension noun: we thus have *manualis* from the fourth declension noun *manus*, but *fiscalis* from the second declension noun *fiscus*. Italian inherited a lot of these Latin bases and derivatives, but not the various declension classes. Since the distribution of *-u-* thus became opaque, Tekavčić 1980 hypothesizes that this allomorphic variation also became unproductive, a conjecture incompatible with the existence of quite a number of neologisms with *-u-* in Italian. A closer examination of the data shows that most neologisms are due either to local analogies based on existing derivatives with the same suffix or to the influence of co-derivatives, i.e. existing derivatives with the same root but a different suffix. In these cases, however, it is only the allomorphy that is determined by the co-derivative, while from a morpho-semantic perspective the derivatives follow the series of words with the same suffix.

### 1. Introduction

It is quite frequent, at least in the more familiar European languages, that an affix seems to be joined to a base not directly but through some intervening „element“. In English, e.g., though the adjectival suffix *-al* is generally attached directly to the base noun, as in *organizational*, in other derivatives one may observe an intervening element such as *-in-* (e.g. *criminal*) or *-u-* (e.g. *habitual*). Such elements have received quite a number of different treatments in the literature, the main points of discordance being their morphemic vs. phonemic status, their proper segmentation and bracketing, their function, and, tightly linked to these different conceptions, terminology.<sup>1</sup> There seems to be more agreement about how such elements arise: as Malkiel 1958 has shown, they may be relics of earlier or foreign morphological systems or the result of reanalysis or contamination.

Once such elements occur in at least one word of a language, one may often observe that they spread to other words of that language, and it is this process of

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<sup>1</sup> The most important contributions to these topics are the following: Malkiel 1958, Tekavčić 1968, Aronoff 1976: 98-114, Szymanek 1985, and Dressler / Merlini 1994: 529-557.

irradiation that will be at the center of the present investigation.<sup>2</sup> In the few occasions when Malkiel touches the problem of the irradiation of such elements, he invariably resorts to analogy as the underlying mechanism, a view that is also explicitly endorsed by Lázaro Carreter 1972 and Becker 1993: 206 (with respect to the linking elements of German compounds). Aronoff 1976: 112, on the other hand, describes English words such as the ones cited above in terms of „rules of allomorphy“, i.e. rules that introduce an empty morpheme in the context of two other morphemes. More recently, Booij 1997 has drawn our attention to the fact that the choice of such elements may also be determined paradigmatically: thus the *-aan-* of the Dutch ethnic adjective *Amerikaans* ‚American‘ is taken from the inhabitant name *Amerikaan* ‚inhabitant of America‘ following a general rule of Dutch according to which ethnic adjectives are formed by joining *-s* to the corresponding inhabitant name. In the following analysis of the fate of the Latin type *manualis* in Italian we will see that both analogical models, i.e. existing words or groups of words with the same suffix, and co-derivatives, i.e. words with the same stem but a different suffix, may play a role in the irradiation of our elements.

## 2. The Latin type *manualis*

The conditions underlying the appearance of *-u-* in Latin derivatives are well-known and quite straightforward: it was applied, roughly, after bases of the fourth declension<sup>3</sup> and before the suffixes *-alis*, *-are* (infinitive ending), *-arius*, and *-osus*. There are only about twenty base nouns that do not pertain to the fourth declension, as well as some sporadic examples of suffixes different from the ones just mentioned, but on the whole the pattern was quite regular and productive.

The nouns of the Latin fourth declension may be grouped into three groups: action nouns, „status nouns“ of the type *consulatus* ‚consulate‘, and a heterogeneous residual group. As table 1, based on Gradenwitz 1904 and Georges 1914, shows, action nouns were by far the largest group and produced the greatest number of derivatives with a *-u-*. The 80 status nouns interestingly did not give rise to any derivative with *-u-*, while more than half of the residual group did so.

| morph. category             | action nouns    | status nouns      | other nouns      |
|-----------------------------|-----------------|-------------------|------------------|
| example                     | <i>latratus</i> | <i>consulatus</i> | <i>mons</i> etc. |
| total number                | 785             | 80                | 59               |
| derivatives with <i>-u-</i> | 77              | 0                 | 35               |

Table 1

<sup>2</sup> A more extensive version of the present analysis will appear in Italian in the proceedings of the annual meeting of the Società di Linguistica Italiana held in Padua in September 1997.

<sup>3</sup> Latinists also speak of „*-u-*stems“, since the nouns of this declension have a *-u-* after the root in all case forms: nom.sg. *manus* ‚hand‘, gen.sg. *manuus*, nom.pl. *manuus*, etc. (*-uu-* here stands for a long vowel.) The *-u-* thus appears before the case endings and the four suffixes *-alis*, *-are*, *-arius*, and *-osus*, but not normally before other derivational suffixes.

Though, as we have seen, the presence of *-u-* in Latin was conditioned by the declension class of the base noun and the presence of one of the four suffixes mentioned above, it is interesting to note that there was also a strong co-variation between the appearance of *-u-* and the presence of a root final /t/ or /s/, due to the fact that the root of all action nouns of the fourth declension ended in /t/ or /s/ and that the residual group was largely due to analogical extension from the action noun group based on semantic, but also formal similarity (as in the classic example of *montuosus* ‚mountainous‘, from *mons*, *-tis* ‚mountain‘, which is held to have been formed on the model of almost synonymous *saltuosus*, from *saltus*, *-uus*).

### 3. Stratigraphic analysis of 152 Italian derivatives with *-u-*

As shown in table 2<sup>4</sup>, many Latin derivatives with *-u-* were borrowed into Italian over the centuries. This stock of latinisms was then extended during the modern times by a number of gallicisms and anglicisms, many of which were not borrowed from Latin but formed by speakers or writers of French or English. And last but not least, there is a considerable number of derivatives, from the very beginning of the Italian language up to the present moment, which must be classified as „neologisms“, i.e. formations on an independent Italian basis.

| century | latinisms | gallicisms | anglicisms | neologisms |
|---------|-----------|------------|------------|------------|
| XIII    | 5         |            |            | 1          |
| XIV     | 32        |            |            | 5          |
| XV      | 5         |            |            |            |
| XVI     | 16        | 2          |            | 5          |
| XVII    | 3         | 1          |            | 2          |
| XVIII   | 5         |            | 1          | 2          |
| XIX     | 8         | 7          |            | 8          |
| XX      |           | 5          | 4          | 35         |

Table 2

It is this last group that is of particular interest to our concerns. How can there be Italian neologisms with a *-u-*, one may wonder, when one of the essential conditioning factors in Latin, the fourth declension, has disappeared in that language? And in fact Tekavčić 1980: §§ 1015.3 and 1040.4, the only diachronic manual that addresses the problem, holds that the choice of *-u-* has become opaque and hence unproductive in

<sup>4</sup> This table was compiled by checking all the Italian descendants from Latin words of the fourth declension in *DELI* and *GDLI*, as well as on a reverse word list based on *Zingarelli*, all available dictionaries of neologisms, and the author's personal collection of neologisms. The only formations that might have gone unnoticed are thus neologisms quoted in *GDLI* whose base does not go back to a Latin word of the fourth declension and which is not included in *Zingarelli* or any of the collections of neologisms.

Italian due to the disappearance of the fourth declension. But this view is clearly at odds with the results displayed in table 2. We will thus have to investigate which factors determine(d) the appearance of *-u-* in Italian neologisms.

#### 4. Irradiation from analogical models

We have already seen that in Latin there has been, to a large extent, co-variance between the fourth declension and the presence of a root final /t/ or, less frequently, /s/. A first reasonable guess might thus be that Italians simply substituted this phonological conditioning to the morphological one. A first rough statistic indeed seems to corroborate this suspicion: 68 % of the Italian bases have a /t/ and 25 % an /s/ before the final vowel, while only 7 % have a consonant different from /t/ or /s/ in the same position. One might thus be tempted to formulate an Aronovian „rule of allomorphy“ of the type: „Insert /u/ before the suffixes *-ale*, *-are*, *-ario*, and *-oso* if the base ends in /to/ or /so/.“<sup>5</sup>

| suffix         | normal derivative                  |                                    | derivative with <i>-u-</i>       |                                     |                        |
|----------------|------------------------------------|------------------------------------|----------------------------------|-------------------------------------|------------------------|
|                | 1 loan words                       | 2 neologisms                       | 3 loan words                     | 4 neologisms                        | 5 co-derivatives       |
| <i>X(u)ale</i> |                                    |                                    | <i>attuale</i> XIV               |                                     |                        |
|                |                                    |                                    | <i>contrattuale</i> XIX          |                                     |                        |
|                |                                    |                                    | <i>fattuale</i> XX               |                                     |                        |
|                | <i>dialettale</i> XIX              | <i>interlettale</i> XX             | <i>aspettuale</i> XX             | <i>brevettuale</i> XX               |                        |
|                |                                    |                                    | <i>concettuale</i> XIX           | <i>oggettuale</i> XX                |                        |
|                |                                    |                                    | <i>distrettuale</i> XIV          | <i>progettuale</i> XX               |                        |
|                |                                    |                                    | <i>effettuale</i> XVI            | <i>soggettuale</i> XX               |                        |
|                |                                    |                                    | <i>intellettuale</i> XIV         |                                     |                        |
|                |                                    |                                    | <i>conflittuale</i> XX           | <sup>†</sup> <i>affittuale</i> XVI  | <i>affittuario</i> XVI |
|                | <sup>†</sup> <i>affittale</i> XIV  |                                    | <sup>†</sup> <i>fittuale</i> XVI | <i>relittuale</i> XX                |                        |
| <i>X(u)are</i> |                                    | <i>ciabattare</i> XIX              | <i>attuare</i> XV                |                                     |                        |
|                |                                    | <i>contrattare</i> XVI             |                                  |                                     |                        |
|                | <i>architettare</i> XVI            | <i>banchettare</i> XVI             | <i>effettuare</i> XVI            | <i>eccettuare</i> XIII              |                        |
|                | <i>brevettare</i> XIX              | <sup>†</sup> <i>concettare</i> XVI |                                  | <sup>†</sup> <i>affettuarsi</i> XIV | <i>affettuoso</i> XIV  |
|                | <sup>†</sup> <i>eccettare</i> XIII | <i>difettare</i> XIII              |                                  |                                     |                        |
|                | <i>precettare</i> XVII             | <i>filettare</i> XVIII             |                                  |                                     |                        |
|                | <i>traghettare</i> XVI             | <i>merlettare</i> XIX              |                                  |                                     |                        |
|                |                                    | <i>picchettare</i> XIX             |                                  |                                     |                        |
|                |                                    | <i>sorbettare</i> XVIII            |                                  |                                     |                        |
|                | <i>complottare</i> XIX             | <i>biscottare</i> XVI              |                                  |                                     |                        |
|                |                                    | <i>cazzottare</i> XVIII            |                                  |                                     |                        |

<sup>5</sup> 90 % of the Italian bases end in *-o/* (which goes back to the Latin acc. ending *-u(m)*).

|  |  |                                  |                                   |  |  |
|--|--|----------------------------------|-----------------------------------|--|--|
|  |  | <i>pizzicottare</i> XIX          |                                   |  |  |
|  |  | <i>fluttare</i> XX               | <i>fluttuare</i> XIV              |  |  |
|  |  | <i>fruttare</i> XIII             | <sup>†</sup> <i>fruttuare</i> XIV |  |  |
|  |  | <sup>†</sup> <i>luttare</i> XIII |                                   |  |  |

Table 3

A closer inspection of the data however reveals that such a solution would be too simplistic. Let us look, e.g., at the behaviour of Italian bases ending in /tto/ before the suffixes *-ale* and *-are*, as displayed in table 3. Our rule of allomorphy would predict that they should all uniformly have a *-u-*, at least all the neologisms. But this is manifestly not the case. We may observe, on the contrary, that the presence of *-u-* is dependent on the suffix: while most neologisms in *-ale* have a *-u-*, those in *-are* overwhelmingly do not show this insert.<sup>6</sup> One would thus at least have to modify the rule of allomorphy in the following way: „Insert *-u-* before the suffix *-ale* if the base ends in *-/to/* or *-/so/*“.

But even this restricted version turns out to be too powerful, as the data in table 4 show.<sup>7</sup> In fact, all the roots of table 4 end in /ss/ and should thus show *-u-* according to our revised version of the rule of allomorphy. Though this is the case for the large majority of the neologisms, closer scrutiny reveals that the presence of *-u-* seems to be determined not just by the root-final consonant but by the phonic form of the root starting from the stressed vowel. Thus, while the bases in *-/esso/* consistently take the *-u-* after the model of *sessuale*, those where /ss/ is preceded by a vowel different from /e/ seem to avoid the insert. We must thus conclude that the presence of *-u-* in Italian neologisms is not determined by some general rule of allomorphy, but obeys a host of very parochial generalizations taking in consideration the suffix and the phonic material of the root from the stressed vowel rightwards. The irradiation of *-u-*, in other words, is mainly to be accounted for by local analogy.

|     | <i>Xsale</i>                         |                        | <i>Xsuale</i>       |                        |
|-----|--------------------------------------|------------------------|---------------------|------------------------|
|     | 1 loan words                         | 2 neologisms           | 3 loanwords         | 4 neologisms           |
| /e/ |                                      |                        | <i>sessuale</i> XIX | <i>accessuale</i> XX   |
|     |                                      |                        |                     | <i>accessuale</i> XX   |
|     |                                      |                        |                     | <i>congressuale</i> XX |
|     | <sup>†</sup> <i>processale</i> XVIII |                        |                     | <i>processuale</i> XIX |
| /i/ | <i>abissale</i> XIX                  |                        |                     |                        |
|     | <i>affissale</i> XX                  | <i>interfissale</i> XX |                     |                        |
| /o/ | <i>colossale</i> XVIII               |                        |                     |                        |
|     | <i>paradossale</i> XVI               |                        |                     |                        |

Table 4

<sup>6</sup> The counter-examples to this generalization have a special explanation, which however need not concern us here.

<sup>7</sup> The first column of table 4 shows the vowel immediately preceding root-final /ss/.

Analogy here is mainly based on formal resemblance, as we have seen. Between *sessuale* 'sexual' and the group of neologisms *accessuale* 'concerning seizures', *ascessuale* 'concerning abscesses', *congressuale* 'concerning congresses', *processuale* 'concerning trials', and even among the four neologisms, there is no semantic resemblance whatsoever, but they share the sequence /ess/ and the suffix *-ale*. Only in very few cases can one find a semantic base for the analogy besides the formal one. A case in point would be the recent nonce-formation *contornuale* 'contextual', derived from *contorno* 'context' after the model of the synonymous couple *contestuale* / *contesto*. But even here the fact that both bases begin with *con-* may have been helpful.

Why, one might ask, did and do speakers and writers of Italian resort to such parochial analogical strategies and not to a more general phonological conditioning as conjectured above? The reason for this is simple: Italian inherited from Latin not only many derivatives with *-u-* based on Latin fourth declension nouns, but also many derivatives without *-u-* based on formally similar bases from other Latin declensions, such as *fatale* (XIV; Latin *fatalis*, from *fatum* 'fate'), *digitale* (XVI; Latin *digitalis*, from *digitus*, *-i* 'finger'), *capitale* (XIV; Latin *capitalis*, from *caput*, *-itis* 'head'), etc. Any sweeping generalization of the kind „Insert *-u-* after roots ending in /t/“ was thus impossible: speakers and writers had and have to take into consideration more phonic material in order to identify groups of bases homogeneous with respect to the presence or absence of *-u-*.

Analogy, however, is not enough to explain *all* neologisms. In the remaining part of this paper, we will address the question which other mechanisms were and are operative in the irradiation of *-u-*.

## 5. Irradiation from co-derivatives

Some neologisms seem to owe their *-u-* to the fact that some co-derivative, i.e. a derivative with the same stem but a different suffix, also has one. The arguments for the need of this additional mechanism are subtle and not always totally conclusive, but on the whole it would seem to me that the need for such an additional device is indisputable.

A first kind of argument is based on lexicographic practice. Italian lexicographers sometimes felt the need to justify the presence of *-u-* in certain derivatives, and in these comments they also resort to irradiation from co-derivatives. By explaining the nonce-formation *intellettuoso* 'lit. intellectual' as a derogatory variant of *intellettuale* 'intellectual', Migliorini 1963, for example, seems to want to establish a direct relationship between these co-derivatives. Other lexicographers are more explicit. *GDLI*, e.g., notes with respect to C.E. Gadda's neologism *puntuare* 'to gain in precision', derived from *punto* 'point': „per influsso di *puntuale*“ [i.e. influenced by *puntuale* 'precise']. And in the *Novissimo Dardano* (Rome: Curcio) *sessuato* 'sexuate' is said to be derived from  *Sesso* 'sex' „con sovrapposizione di *sessuale*“ [i.e. with superposition of *sessuale* 'sexual']. The latter explanation is certainly incorrect from an historical perspective, since *sessuato* is a loan-translation of either French *sexué* or English *sexuate*, where the *-u-* is already present, but it is nevertheless interesting as an intuition of a native speaker.

The Italian lexicographers quoted in the last paragraph seem to have had in mind a kind of double derivation for words like *puntuare* or *sessuato*: while from a morpho-semantic point of view they are said to derive from their bases *punto* and *sessu* according to the general model of verbs in *-are* and adjectives in *-ato*, their allomorphic shape is attributed to the influence of the co-derivatives *puntuale* and *sessuale*. In other words, we would have here cases of paradigmatically determined allomorphy in the sense of Booij 1997.

This is not, however, the only possible interpretation. Scholars uneasy with this idea of double derivation might want to argue that these Italian words are directly derived from their co-derivatives, both semantically and formally. And, indeed, one can also find on some occasions comments pointing in that direction in Italian dictionaries. Under *puntuario*,<sup>8</sup> e.g., an obsolete synonym of *puntuale*, *GDLI* writes: „Deriva da *puntuale*, con cambio di suff.“ [Derives from *puntuale*, with suffix change]. Sceptics could also point to the fact that affix-substitution is a relatively common process both in inflection and in word-formation.<sup>8</sup> It has been argued, e.g., that analogical levelling of the type Old French *je claime* ‚I cry out‘/ *nous clamons* ‚we cry out‘, *j'aime* ‚I love‘/ *nous amons* ‚we love‘ to Modern French *je clame* / *nous clamons*, *j'aime* / *nous aimons* should be analysed as based on affix-substitutions of the type *Xons* > *Xe* and *Xe* > *Xons*. And Faitelson-Weiser 1981: 214-5 has pointed to an interesting case in the derivational system of Mexican Spanish, where the irradiation of allomorphic *-c-*, which is inserted between bases of a certain phonic shape and the suffix, from diminutives in *-ito* to augmentatives in *-ote* can be shown to be due to the fact that *-ito* and *-ote* are in a productive antonymic relationship in that variety of Spanish, which allows speakers to form a corresponding derivative in *-ote* to almost any derivative in *-ito*. In the same fashion, one might be tempted to derive *puntuare* from *puntuale* by substituting *-are* to *-ale*, and similarly in the other cases.

Though I agree that affix-substitution is much more widespread than is generally believed, I do not think that it is the right solution for our Italian cases, at least not for the great majority of them. If *XA* is derived from *XB* by substituting *A* for *B*, then normally there is independent evidence that derivatives of the form *XA* should stand in a direct relationship to derivatives of the type *XB*. In inflectional paradigms, e.g., the development of mutual relationships among the different slots is only to be expected. And in the Spanish case the existence of a direct antonymic relationship between diminutives in *-ito* and augmentatives in *-ote* is proved, among other things, by their frequent co-occurrence in texts. No such independent evidence, however, is available for our Italian derivatives.

Besides the ones quoted above, the following examples should also probably be considered to contain a *-u-* that originated from a co-derivative. As we have already seen in table 3, verbs in *-are* derived from bases in *-etto/* normally do not take *-u-*. The only exception to this rule is Old Italian *affettuarsi* ‚to fall in love‘: morpho-semanticly, it is derived from *affetto* ‚love‘, but the *-u-* certainly comes from the co-derivative *affettuoso* ‚loving‘. The verbal nonce-formation *rituare* ‚to respond with stereotyped phrases‘ (*GDLI*), derived from *rito* ‚rite‘, probably owes its *-u-* to the co-

<sup>8</sup> Cf., among others, Marle 1985, Becker 1990 and 1993, Ford / Singh / Martohardjono 1997.

derivative *rituale* 'ritual', even though one cannot totally exclude the possibility that its shape might be the result of a formal analogy to the couple *sito* 'place' / *situare* 'to locate'. The case where the irradiation of the *-u-* from a co-derivative is most obvious, however, is the long series of neologistic derivatives from  *Sesso* 'sex': contrary to what we observe in English *sexology* and similar terms in other European languages, Italian *sessuologia* shows a *-u-*, which must have irradiated from the co-derivative *sessuale* 'sexual' since there is no other Italian derivative in *-ology* with a *-u-* that might have served as an analogical model. The same behaviour, by the way, may be observed in most other neologisms on the basis of  *Sesso*: *sessuofobia*, *sessuomania*, *sessuomorfo*, *sessuofilico*, etc. What distinguishes the  *Sesso*-case from the others is that the irradiation of *-u-* goes even beyond the limits of the four suffixes *-ale*, *-are*, *-ario*, and *-oso*. It seems that Italian speakers have extracted a stem allomorph *sessu-* from *sessuale* which is now applicable before all suffixes beginning with a back vowel.<sup>9</sup>

The different behaviour of Italian and other European languages with respect to the irradiation of the *-u-* inside the sex-family suggests that it is not possible to formulate sufficient conditions under which such paradigmatic irradiation of allomorphy takes place. The same conclusion is also prompted by opposing to  *Sesso* / *sessuale* / *sessuologia* other Italian couples like *congresso* 'congress' / *congressuale* / *congressomania*, *istinto* 'instinct' / *istintuale* / *istintolatra*, *reddito* 'income' / *reddituario* / *redditometro*, etc., where no irradiation of *-u-* may be observed under comparable circumstances. The best one can do, it seems, is to formulate necessary conditions for this kind of paradigmatic irradiation. Just as in analogical levelling, some kind of higher-order paradigmatic organization of morphological categories seems to be a precondition for paradigmatic irradiation to take place. In the case of our *-u-*, there is an incipient paradigmatic network in the sense that the 152 Italian derivatives with *-u-* are not distributed randomly, but over about ninety Italian nouns and four suffixes.

## 6. Conclusion

This study of the irradiation of *-u-* in Italian has shown that it cannot be totally accounted for by analogy alone. As we have seen, allomorphy may also spread from co-derivatives.<sup>10</sup> Since we have argued against an affix-substitution account of the Italian facts, we have to conclude that the creation of a neologism may, if the word is integrated into a certain type of paradigmatic network, follow two models at the same time, one for the morpho-semantic side and one for the allomorphy.

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<sup>9</sup> The limitation to back vowels is necessary in the light of *sessismo* 'sexism' and similar derivatives.

<sup>10</sup> Things are even more complicated, since other Italian neologisms with *-u-* can only be explained as „virtual latinisms“: Italian writers and speakers in several cases seem to have inserted a *-u-* only because they knew that the base noun originated from a Latin noun of the fourth declension and that derivatives from such nouns were supposed to have a *-u-*. Still another, marginal, source for *-u-* not treated here is contamination.



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