Italian adjective-adjective compounds: between morphology and syntax

Maria Grossmann & Franz Rainer

The present paper is dedicated to Italian adjective-adjective sequences as a borderline phenomenon oscillating between morphology and syntax. AA sequences with a linking vowel *-o-* and a single morphological locus for agreement at the end of the sequence are undoubtedly morphological in nature, while the distinction between asyndetic AA compounds and coordinative AA phrases is a tricky matter, depending solely on semantics. The paper shows how the asyndetic compound-type arose besides the one with a linking vowel, taken over from Neo-Latin in the 17th century and characterises their mutual relationship in present-day Italian in terms of blocking. Some restrictions and ordering preferences in modern Italian are argued to reflect this Neo-Latin origin. And finally, the phenomenon of apocope of the type *imperial-regio*, specific to Italian, is interpreted as an iconic strategy to achieve greater formal integration in asyndetic AA compounds*.

1. The demarcation line between morphology and syntax

Though adjective-adjective (henceforth AA) compounds are anything but infrequent in modern Italian, the only two scholarly works – apart from the valuable comments in Migliorini (1963) – specifically dedicated to this pattern up to now seem to be D'Achille & Grossmann (2009) and D'Achille & Grossmann (forthcoming),[1] where a first synchronic and diachronic sketch has been provided. We would like to continue this research here in accordance with the general theme of the present special issue, digging deeper into one of the manifold problems presented by Italian AA compounds, namely their location at the crossroads between word formation and syntax, between compounding proper and asyndetic coordination.

Some AA sequences in Italian are indisputably morphological in nature. The two AA sequences in (1a-b), for example, are clearly AA compounds, since only the second adjective agrees with the feminine head-noun,[2] while the first one remains uninflected:

(1a) unione [*f. sg.*] economico-monetaria 'economic monetary union'[3]
(1b) bandiera [*f. sg.*] bianco-azzurra 'white-blue flag'

Rivista di Linguistica 21.1 (2009), pp. 71-96 *(ricevuto nel marzo 2009)*

But these same sequences of adjectives, with an identical meaning, can also show agreement on both adjectives, as in (2a-b):

(2a) unione economica monetaria 'economic monetary union'[4]
(2b) bandiera bianca-azzurra 'white-blue flag'

Similar examples could be multiplied almost indefinitely. Here are some more cases of the same type, followed by their Google frequencies (consulted on June 4, 2008):

(3a) sindrome [*f. sg.*] ansioso-depressiva (847) 'anxiety-depression syndrome'
(3b) sindrome ansiosa-depressiva (622)

(4a) zona [*f. sg.*] artigiano-industriale (28) 'trade and industrial area'
(4b) zona artigiana-industriale (7)

(5a) classe [*f. sg.*] medio-alta (10.600) 'middle-upper class'
(5b) classe media-alta (89)

(6a) clinica [*f. sg.*] ostetrico-ginecologica (2.700) 'obstetric-gynecological clinic'
(6b) clinica ostetrica-ginecologica (1.310)

In Italian, agreement on the final adjective only is thus a sufficient, but not a necessary condition for classifying an AA sequence as morphological.

The picture gets even more complicated if we take into consideration AA sequences such as those in (7), where the two adjectives are antonyms:

(7a) docce [*f. pl.*] calde-fredde 'hot-cold showers'
(7b) amata-odiata tv [*f. sg.*] 'beloved-hated TV'

Intuitively, these sequences seem to be even more syntax-like than those of (2a-b). This intuition probably has to do with semantics: While the meaning of the AA sequences in (2a-b) and (3b-6b) is '(both) A_1 and A_2', that in (7a-b) is 'alternatingly A_1 and A_2' or 'A_1 or A_2'. The intuition that these sequences are situated closer to the syntactic pole is also reflected by the orthography. Just as in an indisputably asyndetic sequence like *terzo-quarto* 'third or fourth, lit. third-fourth' (ex. *in terza quarta posizione* [f. sg.] 'in third-fourth position'), instead of the hyphen we sometimes also find a blank, a slash, or a comma:

(8a) docce calde fredde	(9a) l'amata odiata tv	(10a) in terza quarta posizione
(8b) docce calde/fredde	(9b) l'amata/odiata tv	(10b) in terza/quarta posizione
(8c) docce calde, fredde	(9c) l'amata, odiata tv	(10c) in terza, quarta posizione

The slash present in (8b-10b) is normally used in Italian orthography in order to express the disjunction 'or', often in unmistakably syntactic sequences such as (11), where two inflected verbs are conjoined asyndetically:

(11) Qual è l'animale che amate/odiate di più? 'Which animal do you love/hate most?'

The same disjunctive meaning can also be expressed by the blank (see 8a-10a) – a highly polysemous orthographic sign – and the comma (see 8c-10c). The latter normally also indicates that a pause should be made at that point in the utterance. Such a pause, of course, shows that we are dealing with a syntactic, not a morphological sequence.

There are thus orthographic clues that the AA sequences in (7) could be more syntax-like than those in (2). The orthography, in these cases, probably reflects intuitions of conceptual unity on the part of the writers. While the AA compounds in (2) express stable concepts, this is less obvious in the AA sequences of (7). In fact, *caldo-freddo* 'hot-cold' is probably ambiguous in this respect. Said of showers in a health context,[5] for example, it is a stable concept, and it therefore does not come as a surprise that it could also be expressed in Italian with an AA compound where the first adjective remains uninflected: *docce caldo-fredde*. When, however, a camp site offers among its services *docce calde/fredde libere*, i.e. 'free hot/cold showers', 'hot' and 'cold' do not form an integrated concept but are simply coordinated asyndetically. The meaning is 'hot or cold, as the customer prefers'. In this context, therefore, it would be inadequate to substitute the compound *caldo-fredde* for *calde/fredde*. In the case of (7b), it seems even more difficult to think of the AA sequence as a unitary, stable concept: The meaning here is either 'alternatingly beloved and hated' (by the same person) or 'beloved by some, but hated by others'. It is probably no coincidence that the corresponding compound with an invariable first element does not sound very felicitous: *?l'amato-odiata tv*.[6] The morphology/syntax divide thus seems to cut somewhere across the examples in (7), with the same sequence sometimes lying

on the one side of the demarcation line or the other depending on the exact meaning conveyed. Phonologically, this does not seem to make any difference.

As the examples in this introductory section have shown, the morphology/syntax divide seems to be somehow reflected in the orthography. If the two adjectives are written as one word, as in *agrodolce* 'sour-sweet', from *agro* 'sour' and *dolce* 'sweet', there can be no doubt anyway about the compoundhood of the sequence. But generally, AA compounds are written with a hyphen – *agro-dolce*, for example, is a possible, though rarer variant of *agrodolce* – , a sign which unfortunately is ambiguous, since it is also used sometimes to signal asyndetic coordination (witness *in terza-quarta posizione* and similar sequences). Of the other signs which we have seen in (8) to (10), only the comma is unambiguous, signalling a syntactic construction. The slash also normally points to the syntactic nature of the sequence, while the blank is open to both interpretations, though it shows more affinity to syntax than to morphology, while the opposite is the case for the hyphen. There is thus the following orthographic cline at the juncture of the two adjectives: (morphology) written together > hyphen > blank > slash > comma (syntax). But this is only a rough tendency, which does not allow to use orthography as a reliable indicator for judging single cases. However, in a broad statistical study they might constitute interesting clues to compoundhood/phrasehood. In the present study, however, we will not tackle the morphology/syntax problem via orthography, but look at it from several other perspectives, beginning with a closer look at the origin of our compounds.

2. The Neo-Latin origin of AA compounds

Compounding has long been known to arise mainly through the reanalysis of frozen syntactic phrases. One could thus be led to surmise that our Italian AA compounds could also be traced back to asyndetically coordinated adjectives, all the more so since we have seen in 1. that even from a synchronic perspective it is often hard to tell where asyndetic coordination ends and compounding begins.

According to D'Achille (see D'Achille & Grossmann forthcoming), some colour adjectives like *verde giallo* 'green-yellow' or *chiaroscuro* 'clear-dark' may well have arisen through the reanalysis of corresponding syntactic phrases, but the bulk of AA compounds has clearly entered the Italian language from above, i.e. as loan-translations of corresponding Neo-Latin compounds. Contrary to the standard situ-

ation of morphological change described in handbooks, where compounding, according to Givón's aphorism, is explained as "yesterday's syntax", in our Italian case compounds constituted the starting point, while the evolution towards more syntactic AA sequences came only in a second step, as we shall see.

Classical Latin had no AA compounds of our type, i.e. with a first member ending in *-o* (compounds of the type *Gallo-Græci* were nouns).[7] As Hatcher (1951:70ff.) has shown in her pioneering study, Latin adjectival compounds of the type *ethico-politicus* 'ethical-political' were launched by German scholars in the middle of the 16th century. The oldest formation on record is *comico-tragicus* 'comical-tragical' from 1540, but by the end of the century this innovative type of compound consisting of two adjectives related to appellative nouns – *comœdia* 'comedy' and *tragœdia* 'tragedy', in our case – was already well established. A second source of coordinative Neo-Latin AA compounds (see p. 60ff.) were the names of dictionaries of the type *Lexicon Græco-Latinum* 'Greek-Latin Dictionary', which were themselves modelled after Classical Latin formations like *Gallo-Græci* 'Greeks from Gaule', where the first member was related to the origin (*Gallus* 'inhabitant of Gaule') and the second one to the eventual place of settlement. This determinative pattern – the first member modifies the second – had probably already received a coordinative reading by the middle of the 16th century, when such expressions came to be applied to bilingual editions (*Anthologicum graeco-latinum* 'Greek-Latin anthology', etc.), but at the latest this was the case at the end of the century (*Mercurius Gallo-Belgicus* 'French-Belgian newsletter', etc.). At the beginning of the 17th century, Hatcher also observed first extensions to adjectives derived from names of persons, such as *Tychonico-Kepleriana* [*nova*] 'new findings of Tycho [Brahe] and Kepler'. Thus, in the first half of the 17th century, the appellative, the geographic and the deanthroponymic pattern can be considered as fully established in Neo-Latin. The only major innovation of the 17th century consisted in the medical type *sterno-clavicularis* 'sternal-clavicular', where the place of the first member was occupied not by an adjective, but by a noun (in our example, *sternum* 'sternum', instead of *sternalis* 'sternal').

The reason for substituting the noun stem is convincingly sought by Hatcher (1951:127, 129) in the fact that many medical adjectives pertained to the third declension, which has *-i-* as its thematic vowel (cf. *sternal-i-s*), not *-o-*, and therefore could not serve as first member of our type of compounds, which seems to have been restricted to first elements with a thematic vowel *-o-* from the start.[8] Thus, *sternali-*

clavicularis was odd for this reason, and *sternalo-clavicularis*, a barbarism utterly unthinkable from the pen of a Humanist. The solution eventually adopted was to use the corresponding noun stem instead, which had the advantage of presenting a thematic vowel *-o-* most of the time (the pattern was later on also extended to nouns of other declensions, witness *aorto-* 'aortal', corresponding to *aorta* 'id.', or *pubo-* 'pubic', corresponding to *pubis* 'id.').[9]

This was the situation in Neo-Latin in the 17th century, when our compound pattern was adopted by all major European languages. As Hatcher (1951:133ff.) has already pointed out, due to intra- and extralinguistic reasons, this process of adaptation led to partly different results in the single European languages. In this paper, however, we will essentially limit our attention to Italian.

3. The reinterpretation of the linking vowel -o-

In Neo-Latin, the *-o-* of the first member of an AA compound clearly had the function of a linking vowel. Though formally it coincides with the dative or ablative singular suffix of adjectives in *-us*, its function is different, namely to signal the juncture of the compound. This linking vowel status is still evident in a French compound like *physico-mathématique* 'physical-mathematical', where the first adjective is clearly formally distinct from the corresponding free form *physique*, but Italian, as Hatcher (1951:137) has already pointed out, was in a different position, since the first member of Neo-Latin compounds of our type happened to coincide with the unmarked form of the corresponding Italian adjective. Latin *physicus*, for example, corresponds to *fisico* in Italian. Due to this coincidence,[10] the first member of a compound such as *fisico-matematico*, a calque of Neo-Latin *physico-mathematicus*, if viewed against the background of Italian grammar, looked like the unmarked form of *fisico*, not like a combination of an adjectival stem *fisic-* and a linking vowel *-o-*.

In most early loan-translations and analogical formations of AA compounds of this type in Italian, the *-o-* remained unchanged, as examples with only final inflection show. According to the present state of our documentation, Italian began taking over the Neo-Latin pattern in the middle of the 17th century.[11] Our oldest example comes from the subtitle of F. Sbarra's tragedy *La tirannide dell'interesse*. Interestingly, the form of the AA sequence seems to have been highly variable from one edition to the next,[12] which certainly is to be interpreted as a sign of the uneasiness of the typographers with this new

type of construction. Here are all the variants of the subtitle 'political-moral tragedy' which we have been able to find in on-line catalogues:[13]

tragedia [f. sg.] *politico morale*. Venezia: Pezzana 1653
tragedia politicomorale. Lucca: Marescandoli 1653
tragedia politico-morale. Lucca 1653 (seconda impressione)
tragedia politicomorale. Venezia: Pezzana 1658
tragedia politicamorale. Venezia: Pezzana 1662
tragedia politicomorale. Roma: Fei 1664
tragedia politica morale. Venezia: Pezzana 1668

Some additional early attestations are the following:

Montanari G. *Pensieri* [m. pl.] *fisico-matematici* ecc. Bologna: Manolessi 1667 'Physical-mathematical thoughts'

Boccone S. *Osservazioni naturali, ove si contengono materie* [f. pl.] *medico-fisiche* ecc. Bologna: Manolessi 1684 'Observations on nature, which contain medical-physical subjects'

Nicolicchia M.-A. *Uso, ed abuso del tabacco, o sia disertazione* [f. sg.] *fisico-medico-morale* ecc. Palermo: Cortese 1710 'Use, and abuse of tobacco, a physical-medical-moral dissertation'

As we have already seen in the example of the subtitle of Sbarra's tragedy, from the very beginning Italian writers or typographers seem to have been uneasy with this new pattern and tried to adapt it to the genius of the language, mainly by treating the two adjectives as asyndetically conjoined, with agreement on *both* adjectives. "In such examples of compounds by juxtaposition", Hatcher (1951:137) writes, "there is revealed, obviously, a desire to transform the Latin pattern adopted into a genuinely Italian one." However, this treatment has always remained less frequent than the alternative with a linking vowel *-o-* after the Neo-Latin model. Here are some relevant older examples with double agreement (the first one is from Migliorini 1960:487):

Torriano G. *Della lingua* [f. sg.] *Toscana-Romana* ecc. London: Martin / Allestrye 1657 'On the Tuscan-Roman language'

Sbarra F. *La tirannide dell'interesse, tragedia* [f. sg.] *politicamorale*. Venezia: Pezzana 1662 (*politica morale* in 1668, as we have seen)

Coronelli V. & G.A. Parisotti. *Isola* [f. sg.] *di Roda geografica-storica, antica, e moderna*, ecc. Venezia: Rialto 1688 'The island of Rhodes, geographical-historical, ancient and modern'

Fanzago F.L. *Trattati* [m. pl.] *teorici-pratici e medicina legale*. Diss. Padova 1808[14] 'Theoretical-practical treatises and legal medicine'

In cases such as these, one may wonder what was the exact status of the AA sequence. Do we really have to do with compounds, and not rather with cases of asyndetic coordination? Generally, it seems to us, the desire to integrate the two adjectives into one unitary, though internally complex concept seems quite obvious. The variation here is therefore more a formal – morphological and orthographical – , than a conceptual phenomenon.

That this is the case is strongly suggested by the behaviour of the concept 'historical-critical' (said of a certain method of inquiry), which was well established by the 17th century. In Latin, scholars used the compound *historico-criticus*, as in the title of the following book:

Bose J.A. *In periocham Flavii Josephi de Jesu Christo exercitatio* [f. sg.] *historico-critica* etc. Jena: Nisius 1668 'Historical-critical exercise on Joseph Flavius' short note on Jesus Christ'

Now, if we study the use of this concept in titles of Italian books of the 18th and 19th century with the help of Google Books and various on-line catalogues, we see that the precise Italian equivalent *storico-critico/a/i/he* has always been favoured, but we also find *storicocritico* (only in the masculine singular), written together, as well as quite a lot of alternative realisations with double agreement, either with a hyphen (*storica-critica* etc.) or with a blank (*storica critica* etc.).

4. The rivalry between compounds with a linking vowel and asyndetic ones

As we have seen in 3., Italian compounds of the type *fisico-matematico* have been reinterpreted as asyndetic AA sequences right from the beginning, but this asyndetic pattern has always remained less frequent than the one with a linking vowel. Let us see now what the rivalry between the two types of compound looks like in present-day Italian.

Our treatment will be based on the *la Repubblica* corpus. This corpus,[15] described in Baroni *et al*. (2004), comprises all texts published by the Italian newspaper *la Repubblica* between 1985 and 2000. It contains some 330 million tokens, of which some 65.000 are AA compounds (including compounds with more than two members), corresponding to some 13.000 types. 65% of these occur only once, which shows the high productivity of AA compounds at least in newspaper Italian. Our statistics in this section is based on a subcorpus of these compounds which excludes those containing shortened

members of the type *catto-* 'Catholic' and adjectives derived from proper names, as well as colour adjectives. This sub-corpus includes AA compounds with 233 different first members.[16] Phrases with masculine singular head-nouns have been discarded, since in that case the *-o* of the first adjective can be interpreted in principle either as a linking vowel or as an inflectional ending. The count in this section is by tokens, since we are particularly interested in the phenomenon of blocking (on blocking, see Rainer 1988), where token frequency plays an essential role. In the following sections of this article, on the contrary, we will count types.

The mean ratio in this sub-corpus between compounds with single and double agreement is 23.88 to 1, that is, it is 23.88 times more likely that an AA compound is of the Neo-Latin type with a linking vowel than of the asyndetic type. This figure confirms the predominance in modern Italian of the Neo-Latin type over the asyndetic one. However, a closer look at the data reveals that this high ratio is essentially due to the overwhelming predominance of the Neo-Latin type in compounds with very frequent first members. Table 1 displays the figures for the 80 most frequent first members of the sub-corpus. As one can see, *politico* 'political' is the most frequent adjective in the first position of AA compounds, with no less than 3.647 occurrences. Of these compounds, 3.604 show single, but only 43 double agreement, which is tantamount to a ratio of 83.81 to 1, far above the average of 23.88. At the other end of the table, the 11 adjectives with *cronico* 'chronic' in first position show a ratio of 4.50 to 1, far below the average of 23.88. Overall, there is a clear correlation between the frequency of the first member and and the ratio between single and double agreement: The more frequent the first member, the higher the relative number of compounds with single agreement, or, to put it the other way round, the less frequent the first member, the bigger the chance to get asyndetic compounds with double agreement. This correlation does not hold for every single adjective, but statistically the correlation is sound.[17]

Now, how is the rivalry between the pattern with single and double agreement to be described properly? The most plausible assumption seems to be that the Neo-Latin type blocks the asyndetic one. The more frequent a certain first member is in AA compounds of the Neo-Latin type, the stronger the blocking force it exerts on the rival asyndetic compound. A compound such as *fisico-matematico/a/i/he*, whose linking vowel *-o-* goes back to Neo-Latin *physico-mathematicus*, more or less effectively blocks the asyndetic AA counterparts *fisica-matematica*, *fisici-matematici* and *fisiche-matematiche*. The correlation between frequency and the blocking effect, as we have seen,

Table 1. Single and double agreement

ADJECTIVE	SINGLE	DOUBLE	RATIO	ADJECTIVE	SINGLE	DOUBLE	RATIO
politico	3604	43	83.81	ironico	33	1	33.00
tecnico	1519	22	69.05	finanziario	32	18	1.78
economico	1395	36	38.75	geografico	32	1	32.00
storico	639	3	213.00	letterario	31	2	15.50
medico	442	2	221.00	estetico	29	1	29.00
cristiano	275	4	68.75	terroristico	27	4	6.75
etico	253	1	253.00	epico	26	0	—
giuridico	233	5	46.60	mitico	24	0	—
igienico	227	2	113.50	romantico	24	0	—
laico	218	4	54.50	teologico	23	3	7.67
etnico	170	3	56.67	mondano	23	2	11.50
cattolico	145	7	20.71	religioso	22	4	5.50
chimico	126	9	14.00	caldo	21	1	21.00
pubblico	113	8	14.23	gastronomico	21	1	21.00
burocratico	107	5	21.40	ecologico	19	1	19.00
fisico	98	4	24.50	sinfonico	19	1	19.00
turistico	95	7	13.57	islamico	18	1	18.00
scientifico	95	1	95.00	televisivo	17	1	17.00
classico	93	1	93.00	gotico	16	2	8.00
ideologico	82	6	13.67	aristocratico	16	1	16.00
erotico	82	4	20.50	logistico	16	1	16.00
democratico	81	2	40.50	democristiano	15	3	5.00
artistico	81	1	81.00	scenico	15	1	15.00
filosofico	72	3	24.00	assicurativo	14	3	4.67
amministrativo	69	5	13.80	clinico	14	1	14.00
comico	65	1	65.00	grafico	14	1	14.00
teorico	58	2	29.00	pratico	14	1	14.00
lirico	56	0	—	giudiziario	13	4	3.25
diplomatico	55	4	13.75	filologico	13	2	6.50
mistico	50	2	25.00	patriottico	13	2	6.50
magico	46	0	—	ostetrico	13	1	13.00
affaristico	45	2	22.50	energetico	12	2	6.00
critico	44	0	—	calcistico	12	1	12.00
tossico	40	2	20.00	ginnico	12	1	12.00
agricolo	38	7	5.43	bancario	11	10	1.10
didattico	38	3	12.67	ansioso	11	4	2.75
tecnologico	37	4	9.25	esotico	11	1	11.00
psicologico	35	3	11.67	organizzativo	11	1	11.00
logico	35	0	—	social democratico	9	8	1.13
sportivo	34	2	17.00	cronico	9	2	4.50

is borne out by our statistics. But this blocking effect is not absolute. This is perfectly in line with what we know about blocking in general, which is hardly ever absolute. Nor is the fact exceptional that the blocking compounds, in our case, are themselves formed according to a productive rule. The productivity of a morphological pattern in fact does not preclude the storage of products of that pattern, and it is the stored formations which exert the blocking force. The best way to describe what is actually going on is probably to say that speakers (writers) tend to choose the pattern which in their mental lexicon is the most frequent with a given first adjective. The process, in other words, seems to be fundamentally usage based (cf. Tomasello 2003) and analogical (cf. Skousen & Lonsdale 2002) in nature.

5. Restrictions on AA compounding of the Neo-Latin type

Both the asyndetic pattern and the pattern with a linking vowel *-o-*, as we have seen, are synchronically productive. There is, however, one big difference in the range of applicability between the two. While the asyndetic pattern is in principle applicable across the board, to any type of adjective, the pattern with a linking vowel has remained limited essentially to first adjectives of the *-o* class. This is, as we have seen in 2., a heritage of Neo-Latin.

For adjectives of the other inflectional classes, except indeclinables of course, asyndetic compounding is normally the only option available in Italian. As can be seen in the examples (12) and (13), there has to be double agreement with adjectives of the class *-a* / *-i* / *-e* and the class *-e* / *-i*. It is not possible to insert the linking vowel *-o-* (see 12b-13b), nor may the first adjective remain invariable (12c-13c):[18]

(12a) corrente [*f. sg.*] marxista-leninista 'Marxist-Leninist wing'
(12b) *corrente marxisto-leninista
(12c) *correnti [*f. pl.*] marxista-leniniste
(12d) correnti marxiste-leniniste

(13a) circolo [*m. sg.*] culturale-politico 'cultural-political circle'
(13b) *circolo culturalo-politico
(13c) *circoli [*m. pl.*] culturale-politici
(13d) circoli culturali-politici

The situation described by the examples (12) and (13) characterises the regular usage in present-day Italian. All relevant examples of our sub-corpus (some 80 examples for the adjectives in *-e*, and about a

dozen for those in *-ista*) behave in this way, except for a small number of exceptional cases to which we will turn below. It is important to stress this point, since Serianni and Castelvecchi, in their 1989 prescriptive Italian grammar, claim that the opposite is true. According to them, the first adjective should always remain invariable, irrespective of whether it ends in *-o* or in *-e* (they do not take into consideration adjectives in *-a*):

> Gli aggettivi composti con due aggettivi […] mutano nella flessione grammaticale la sola vocale terminale del secondo aggettivo. Il primo resta invariato, al maschile in *-o* per gli aggettivi della prima classe […]; nella forma ambigenere in *-e* per gli aggettivi della seconda classe: *verdeazzurro* → 'sfumature verdeazzurre'. (p. 197)[19]

Now, while we have seen that in the case of adjectives in *-o* invariability is indeed the preferred option, in the case of adjectives in *-e* and *-ista* double agreement is *obligatory*, apart from a few exceptions.

In the case of the *-a* / *-i* / *-e* class, as we have said, double agreement is the norm. This fact is further illustrated by the following examples from our corpus (all head-nouns are *m. pl.*):

(14) gruppi franchisti-antisemiti 'Francoist-antisemitic groups'
ideologi leninisti-stalinisti 'Leninist-Stalinist ideologists'
regimi marxisti-comunisti 'Marxist-Communist regimes'
giocatori milanisti-forzaitalisti 'Forza Italia-sympathising AC Milan players'
partiti orangisti-protestanti 'Orangist-Protestant parties'
banditi trotzkisti-buchariniani 'Trotzkist-Bucharinian bandits'

Outside adjectives in *-ista*, however, there are some exceptions to the rule. One such exceptional case is *belga* 'Belgian' (m. pl. *belgi*, f. pl. *belghe*). Here we find as a first element either *belgo-*,[20] with a linking vowel *-o-*, or, more marginally, invariable *belga*, both in the singular and in the plural:

(15a) coproduzione [*f. sg.*] belga-americana 'Belgian-American coproduction'
(15b) coproduzione belgo-americana
(15c) coproduzioni [*f. pl.*] belga-americane
(15d) coproduzioni belgo-americane
(15e) coproduzioni belghe-americane

The variant with a linking vowel *-o-* (see 15b and 15d) is probably due to French influence in this case (compare French *belgo-américain*). French, contrary to Italian, has extended the linking vowel *-o-* beyond adjectives originally pertaining to the Latin *-o-* declension (compare French *intellectualo-mondain* 'intellectual-chic', as opposed to Italian **intellettualo-mondano*), which is of course a consequence of the disappearance of this inflectional class in French. What is more surprising is the fact (see 15c) that for some speakers (writers) *belga* can also remain unaltered in first position, contrary to the adjectives in *-ista*. Other native speakers reject this construction.

There also seems to be some wavering with adjectives in *-ita*. Thus, one can find on the Internet both *rivalità* [f. pl.] *sciite-sunnite* 'Shiite-Sunni rivalries', with double agreement, and *rivalità* [f. sg.] *sciito-sunnita* 'Shiite-Sunni rivalry', with a linking element. Similarly, *amicizia* [f. sg.] *sunnito-sciita* 'Sunni-Shiite friendship', *religione* [f. sg.] *maronito-cristiana* 'Maronite-Christian religion', etc. It is probable that this usage is also due to French influence, where *chiito-*, *maronito-*, *sunnito-* etc. are common as first members of AA compounds. Alternatively, it could derive from ethnic adjectives of the *belgo-* type discussed above.

The situation is somewhat different with adjectives in *-e*. Serianni and Castelvecchi give a literary example – cited above – where *verde* 'green' remains unchanged. From our newspaper corpus, we can only add two more adjectives which are treated this way:

(16) ritratti [*m. pl.*] dolce-amari 'sweet-bitter portraits'
chiese [*f. pl.*] valdese-metodiste 'Waldo-Methodist churches'[21]

But note that, according to the Internet, even in these cases double agreement is by far the preferred option:

(17)	verde-azzurri (5)	verdi-azzurri (> 1.000) 'green-blue'
	verde-grigi (6)	verdi-grigi (> 300) 'green-grey'
	dolce-amari (184)	dolci-amari (ca. 1.000) 'sweet-bitter'

Here are some additional relevant examples from our newspaper corpus (all head-nouns are m. pl.):

(18) partiti conservatori-moderati 'conservative-moderate parties'
piatti dolci-salati 'sweet-salty dishes'
soggetti giovani-adulti 'young-adult subjects'
gruppi industriali-editoriali 'industrial-editorial groups'
contrasti legali-amministrativi 'legal-administrative contrasts'

politici liberali-cosmopoliti 'liberal-cosmopolitan politicians'
imperativi militari-politici 'military-political imperatives'
pezzi minori-maggiori 'minor-major pieces'
milanisti presenti-assenti 'present-absent supporters of AC Milan'

Our generalisation that adjectives in *-e* in productive usage take double agreement can thus be upheld. Cases with an invariable first adjective are exceptions (on the special case of apocope, see 7.), confined essentially to a small group of bi-syllabic adjectives of the common vocabulary.

The behaviour of Italian AA compounds with respect to agreement as we have just described it raises an interesting question. Does Italian syntax have to take into consideration information about inflection classes in order to correctly predict the distribution of gender and plural markers? At first glance, this seems to be the case, since adjectives in *-o* on the one hand and *-a* and *-e* on the other behave differently. Now, general linguistic wisdom ("lexical integrity") says that syntactic rules do not have that power: Agreement rules may refer to syntactic features like MASC, FEM, SG, PL, etc., but not to inflection classes, which are a purely internal affair of morphology. And it seems indeed possible to interpret the Italian data in a way compatible with this general stance. On the one hand, we have an asyndetic AA pattern, close to syntax, with two[22] morphological loci for agreement, one at the end of each adjective (as long as it isn't indeclinable). For first adjectives in *-ista* and *-e*, this is the only productive pattern available. It is also available for first adjectives in *-o*, but for this class of adjectives Italian word-formation also provides a second, more frequent pattern with a linking vowel *-o-*, situated at the end of the first adjective and therefore impeding agreement there. Syntax, with this kind of AA compound, is faced with only one compound-final morphological locus. The competition between the two compound patterns with first adjectives in *-o* is rather complex, as we have seen, but this competition has to be described at the lexical level or at the level of word formation. The agreement rule impartially accepts any outcome of this competition and, accordingly, transfers the features of the head noun to one or more morphological loci.

6. Ordering preferences

In section 2. we saw that in Neo-Latin AA compounds the first position was reserved for adjectives of the *-o* declension. In the pre-

sent section, we will investigate how far this restriction is still relevant to present-day Italian. We have to keep in mind, of course, that, contrary to Neo-Latin, Italian has two compound-types, one – the offspring of the Neo-Latin pattern – with a linking vowel *-o-* and final agreement only, and an asyndetic pattern with double agreement, which constitutes essentially an Italian innovation. Asyndetic compounds are also sporadically attested in Neo-Latin, as we have seen, but these examples could themselves have been influenced by vernacular languages.

As far as the traditional pattern with linking vowel *-o-* is concerned, the first position is by definition occupied by an adjective from the *-o* class – with very few exceptions, as we have seen in 5. – , which means that if the other adjective pertains to the *-e* class, it must necessarily go into the second position: *posizioni* [f. pl.] *etico-morali* 'ethical-moral positions' / **moralo-etiche*, etc. If, for some reason, one wants to put *morale* in the first position, one has to resort to the asyndetic pattern (*posizioni morali-etiche*, etc.) or to apocope (see 7.). In our sub-corpus described in 5. – but counting types this time – about half of the compounds which contain at least one adjective of the *-e* class follow the Neo-Latin pattern, which means that they show a sequence *AoAe* (or, in the plural, *AoAi*).[23]

In the complementary set, however, i.e. that of asyndetic AA compounds, we observe a clear preference of the adjectives of the *-e* class for the first position, the ratio being approximately 2 to 1 (510 adjectives of the *-e* class in first position vs. 234 in second position). This preference for the first position must probably be interpreted as a compensatory strategy: One motive for choosing the asyndetic pattern, in fact, seems to be precisely the desire to place an adjective of the *-e* class in first position.[24] The main reason seems to be that the adjective is felt to convey the more important concept, from the subjective point of view of the speaker (writer), and the first position is dominant in Italian AA compounds (an in depth study of the semantics and pragmatics of AA compounds must be left for another occasion). Another, compelling, reason for putting an adjective of the *-e* class in first position is, of course, the fact that both adjectives pertain to this class (a total of 147 compounds up to letter G): *imprese* [f. pl.] *esportatrici-importatrici* 'exporting-importing firms', *imprese importatrici-esportatrici* 'importing-exporting firms', etc.

As this last example shows, the order of constituents is free in principle, which does not mean, however, that each ordering has the same probability of occurrence. Apart from pragmatic considerations like the one alluded to above (the more important concept tends to be

placed in first position), there also seems to be a prosodically motivated preference for placing the shorter adjective in first position, in accordance with Behagel's law (cf. Behagel 1909): in our 147 *AeAe* compounds, 27,5% of the adjectives have an equal number of syllables, but in 64,5% of the cases it is the first adjective which is shorter, while only in 8% it is the second one (cf. *ruolo* [m. sg.] *culturale-sociale* 'cultural-social role', with the prosodic structure *σσσσ-σσσ*).

But there is yet another important factor which influences the order of the constituents in AA compounds. It is obvious that the choice is, to some extent, usage-based, i.e. lexically driven. For a certain adjective *a*, speakers (writers) *ceteris paribus* tend to prefer the order which, in the speech community and hence in their mental lexicon, occurs most often with that adjective. In our whole sub-corpus, for example, *etico* 'ethical' is placed in first position in 62 AA compounds (counting types), but only twice in second position (the head-nouns are *f. sg*., where not indicated otherwise):

(19a) scelta etico-artistica 'ethical-artistic choice'
scuola etico-cristiana 'ethical-Christian school'
formazione etico-culturale 'ethical-cultural education'
coscienza etico-estetica 'ethical-esthetic consciousness'
connotazione etico-sociale 'ethical-social connotation'

(19b) mandato [*m. sg.*] politico-etico 'political-ethical task'
enciclopedia scientifico-etica 'scientific-ethical encyclopedia'

And even the order of the examples in (19b) is less common than the inverse order, according to Google, where *politico-etico* is outweighed by *etico-politico* at a ratio of 1 to 8, and *scientifico-etica* by *etico-scientifica*, at a ratio of 1 to 3.[25] The significance of these figures is highlighted by a comparison with a closely related adjective like *estetico* 'esthetic', whose position in AA compounds is much less strictly predetermined (32 times in first position vs. 18 times in second position).

All things considered, the order of constituents thus appears to be determined by a variety of factors which may reinforce or hinder each other. In cases like the one of the *etico* compounds, which contain an adjective with a long tradition in AA compounding,[26] speakers (writers) seem to rely mainly on usage, on analogy. Where the burden of tradition is less heavy, pragmatic and prosodic factors come into play. There is a tendency to place the more important concept first, and to place short adjectives before longer ones. These factors may prompt speakers (writers) to choose asyndetic compounding over the pattern

with a linking vowel *-o-*, which rules out adjectives other than those in *-o* in first position (apart from minor exceptions). On the other hand, the choice of the dominant pattern with the linking vowel automatically reduces the possibility of taking into consideration pragmatic or prosodic factors. There is no fixed hierarchy as to the relative weight of these different factors which influence the order of constituents, which is why we find a great deal of variation between speakers (writers) or even within one and the same text. But the statistical hints which we have provided prove that the choice isn't random either.[27]

The paramount importance of tradition and immediate models can also be seen by comparing different domains of usage. The quantitative indications given in this section are average numbers across the whole sub-corpus. If we look at the data more closely, however, we discover, for example, that the language of medicine behaves quite differently. This conservative language for specific purposes has retained the Neo-Latin situation more faithfully than, for example, the language of the press. As we have already mentioned in 2., the medical Latin of the 17th century circumvented the use of adjectives of the third declension in first position by using the nominal base plus a linking vowel *-o-*. Browne (1684), for example, already used adjectives of the type *sacrolumbalis*[28] 'sacral-lumbar' (p. 40) or *sternothyroides* 'sternal-thyroid' (p. 26), whose first member corresponds respectively to *sacralis* 'sacral' (< *sacrum* 'id.') and *sternalis* 'sternal' (< *sternum* 'id.'). This strategy is still predominant in the medical terminology of present-day Italian, as numerous examples like those in (20) show:

(20) ano-rettale ← anale 'anal' + rettale 'rectal'
carpo-radiale ← carpale 'carpal' + radiale 'radial'
cerebro-spinale ← cerebrale 'cerebral' + spinale 'spinal'
cervico-dorsale ← cervicale 'cervical' + dorsale 'dorsal'
costo-addominale ← costale 'costal' + addominale 'abdominal'

Of the roughly 100 medical adjectives of our newspaper corpus with a first member in *-ale*, only the 7 examples of (21) do not show the abbreviated form in *-o-*:

(21) tema [*m. sg.*] anale-fecale 'anal-faecal topic'
zona [*f. sg.*] frontale-parietale 'frontal-parietal area'
organi [*m. pl.*] genitali-escrementizi 'genital-excremental organs'
via [*f. sg.*] locale-inalatoria 'local-inhalatory form'
valutazione [*f. sg.*] ormonale-immunologica 'hormonal-immunological assessment'
grasso [*m. sg.*] viscerale-addominale 'visceral-abdominal fat'

In all these cases, by the way, the corresponding shortened variant in *-o- – ano-*, *fronto-*, *genito-*, *loco-*, *ormono-*, and *viscero- –* are also possible, or even more common. What the examples in (21) show is that the asyndetic pattern has also crept into the language of medicine, but to a much lesser extent than into the general language.

7. Apocope

One semiotic disadvantage of the asyndetic pattern with respect to the Neo-Latin one is that the semantic unity and stability of the concept expressed by means of the two adjectives has no direct formal expression, apart from the hyphen. It is therefore possible that one formal innovation of Italian, first attested in the second half of the 18th century,[29] namely the apocope of adjectives in *-e* in first position, was an iconic strategy meant to signal conceptual unity by a formal marker (apocope), analogous in function to the *-o-* of the Neo-Latin type. In that manner the "syntactoid" asyndetic pattern was made to look more morphological. Such a functional interpretation of the origin of apocope in AA compounds is certainly difficult to prove (or disprove), but it does not sound unlikely.

Be that as it may, the fact remains that in present-day Italian adjectives of the *-e* class which end in a sonorant often show apocope in the first position of AA compounds. Serianni & Castelvecchi (1989:32) call this kind of apocope common, though not obligatory ("usuale, pur non potendo dirsi obbligatoria"). This characterisation corresponds well to the situation which we find in our newspaper corpus – in this section we take into consideration the entire corpus – , where compounds with apocope are more common than those without at a ratio of roughly 2 to 1. The distribution of apocope in the corpus is not homogeneous, nor is the rationale behind the observable asymmetries obvious.

Apocope is most common with adjectives which have a lateral before the final *-e*. It is most frequent with adjectives ending in *-ale* (see 22a), less so with *-are* (see 22b), rare with *-tore* (see 22c), and almost completely absent with *-bile*. This could be simply due to the low frequency of adjectives in *-tore* and *-bile* in first position, but note that not even Google furnishes an example of apocopated *variabil-sereno* 'changeable-fine' besides *variabile-sereno*, a concept very frequent in weather forecasts, or of *contabil-patrimoniale* 'related to book-keeping and property' besides common *contabile-patrimoniale*.[30]

(22a) stampa [*f. sg.*] clerical-conservatrice 'clerical-conservative press'
centro [*m. sg.*] cultural-teologico 'cultural-theological centre'

(22b) vacanze [*f. pl.*] balnear-culturali 'balnear-cultural holidays'
gestione [*f. sg.*] clientelar-paternalistica 'clientelistic-paternalistic management'

(22c) blocco [*m. sg.*] conservator-comunista 'Conservative-Communist block'

A second kind of asymmetry concerns the lexical distribution of apocope. It turns out that it is more common with some lexemes than with others (see Table 2, which displays the numbers for the 30 most frequent adjectives in first position). The strong preference for apocope with political adjectives such as *nazionale*, *liberale* or *radicale* could be due, at least in part, to the influence of foreign models of the type *nationalsozialisch* 'National Socialist'. In the case of *imperiale*, the prototype *imperial-regio* 'imperial-royal' could have played a role. Sometimes, apocope seems to convey a playful overtone, for example in *vizietto sentimental-intellettuale* 'sentimental-intellectual

Table 2: The frequency of apocope in AA compounds

ADJECTIVE	APOCOPE		ADJECTIVE	APOCOPE	
	yes	**no**		**yes**	**no**
culturale	83	37	professionale	11	8
nazionale	69	8	intellettuale	13	6
militare	48	22	imprenditoriale	11	5
liberale	53	15	teatrale	11	5
industriale	35	22	elettorale	14	1
sociale	39	16	fiscale	9	6
musicale	35	10	immobiliare	8	7
sentimentale	36	7	assistenziale	8	6
popolare	30	6	imperiale	13	1
sessuale	33	1	criminale	9	4
radicale	32	3	spettacolare	12	1
commerciale	16	10	morale	4	8
familiare	21	4	istituzionale	6	5
sindacale	20	3	aziendale	9	2
editoriale	13	9	parlamentare	4	6

vice' as opposed to the more neutral *rapporto sentimentale-intellettuale* 'sentimental-intellectual relationship'. But these are hardly more than educated guesses, for the moment being.

Apocope is most frequent with adjectives ending in a lateral + *-e*, but it also occurs in other, phonologically related contexts. Instead of *-e*, we also find occasionally *-o* (see 23a) or *-io* (see 23 b) after the lateral:

(23a) eventi [*m. pl.*] cinefil-mondani 'cinephile-chic events' (< cinefilo)
filisteismo [*m. sg.*] piccol-borghese 'petty bourgeois philistinism' (< piccolo)

(23b) lobby [*f. pl.*] finanziar-bancarie 'financial-banking lobbies' (< finanziario)
complesso [*m. sg.*] miliardar-industriale 'billionaire-industrial complex' (< miliardario)
anomalia [*f. sg.*] proprietar-politica 'proprietary-political anomaly' (< proprietario)
querelles [*f. pl.*] salottier-mondane '"salonish"-chic quarrels' (< salottiero)
meccanismo [*m. sg.*] utilitar-affaristico 'utilitarian-business related mechanism' (< utilitario or utilitaristico)

The examples in (23a-b) show that apocope is best described as an output-oriented process. What all the examples have in common is that the resulting adjectives end in a lateral, while the deleted segment or segments can vary from a phonological point of view. This output-oriented character is also confirmed by the examples in (24), where the deletion of the suffix results in an adjective ending in /l/, the most highly valued final consonant in first position:

(24) ideologia [*f. sg.*] capital-qualunquista 'Capitalistic-Qualunquistic ideology' (< capitalista)
litorale [*m. sg.*] friul-giuliano 'Friuli-Giulia coast' (< friulano)

In our newspaper corpus, besides laterals, also the nasal /n/ may lead to apocope, though far less frequently, especially with adjectives derived from personal and place names (all in all, there are some 80 of them):

(25) crociata [*f. sg.*] divin-ecologica 'divine-ecological crusade' (< divino)
evento [*m. sg.*] mondan-culturale 'chic cultural event' (< mondano)
sogni [*m. pl.*] democristian-comunisti 'Christian Democrat-Communist dreams' (< democristiano)

destra [*f. sg.*] berlusconian-bossiana 'Berlusconi-Bossi right' (< berlusconiano)
epoca [*f. sg.*] craxian-forlaniana 'Craxi-Forlani period' (< craxiano)
cinema [*m. sg.*] african-americano 'African-American cinema' (< africano)
regista [*m. sg.*] brasilian-argentino 'Brazilian-Argentinian director' (< brasiliano)

Among apocopated first members ending in /n/, there are also some which make apparent the output-oriented nature of the process (adjectives are shortened in a way to make them end in a sonorant):

(26) inciucio [*m. sg.*] berluscon-dalemiano 'Berlusconi-D'Alema imbroglio' (< berlusconiano)
vicende [*f. pl.*] fanfan-forlaniane 'Fanfani-Forlani affairs' (< fanfaniano)

A last question to ask is how this output-oriented process of apocope might have arisen. Already at the beginning we surmised that there might have been some iconic motivation, namely to express conceptual unity by greater formal cohesion. In the second half of the 18th century, when the first apocopated AA compounds are attested, the apocope of *-e* after laterals was common in literary style. So, in 1776, more or less at the time when *imperial-regio* is first attested, Pietro Metastasio published odes with the title *La deliziosa imperial residenza di Schönbrunn* 'The delicious imperial residence of Schönbrunn' (Vienna: Ghelen), where in modern Italian we would have to say *residenza imperiale*. At its beginnings, apocope thus seems to have been a stylistic variant with a literary flavour. But when this kind of apocope was eventually abandoned even in literary Italian, it survived in conventionalised AA compounds and, starting from cases like *imperial-regio*, was then extended to other adjectives with phonologically similar first members, most notably those ending in a nasal or in vowels other than *-e*. In the course of this process, apocope also seems to have been reinterpreted as output-oriented, eventually licensing compounds such as *capital-qualunquista*, *friul-giuliano* or *fanfan-forlaniano*. The existence, in the standard language, of expressions such as *pian piano* 'softly softly' besides *piano piano* or *pochin pochino* 'a tiny bit' besides *pochino pochino* may have been helpful.[31]

8. Final remarks

Hitherto, AA compounds have been a neglected topic in Italian word formation, though they present a lot of interesting and far from trivial characteristics worth studying. In the present paper, we had to limit ourselves to some aspects related to their Janus-faced nature at the crossroads of compounding and syntax. We have proposed a distinction between two types of AA compounds, a pattern with a linking vowel *-o-* at the end of the first adjective and an asyndetic pattern with double inflection. We have studied – essentially following Hatcher (1951) on this point – how these two patterns arose, and what their synchronic relationship is like. The rise of the asyndetic type seems to have been due to the desire to adapt the Neo-Latin pattern to the genius of the vernacular language, using asyndetic coordination, a device available in syntax, as a means for expressing unitary concepts consisting of two adjectives. This asyndetic pattern also allowed placement in first position of adjectives other than those of the *-o* class, thus greatly enhancing the flexibility of AA compounding. But at the same time, we surmised that speakers eventually incorporated the originally stylistic rule of apocope into AA compounding in order to make the asyndetic pattern more morphology-like, in accordance with the high degree of integration that characterises AA compounds from a conceptual point of view.

Addresses of the Authors:

Maria Grossmann, Dipartimento di Culture comparate, Facoltà di Lettere e filosofia, Università dell'Aquila, 67100 L'Aquila, Italy <maria.grossmann@cc.univaq.it>

Franz Rainer, Institut für Romanische Sprachen, Wirtschaftsuniversität Wien, Nordbergstrasse 15, 1090 Wien, Austria <franz.rainer@wu-wien.ac.at>

Notes

* The present paper is part of the PRIN 2005 project *CompoNet*. We would like to thank Paolo D'Achille, Livio Gaeta, Michele Loporcaro and Anna M. Thornton for helpful comments, and Jeanne Clegg for the stylistic revision.

[1] AA compounds have not been studied very much in the other Romance languages either. The most detailed studies are those dedicated to French: Dautry (1976), Gross (1988), Schweickard (1990), Pochard (1996), Noailly (1999:43-51) and Goes (2008). On Spanish, see Rainer (1993:278-284).

[2] For the readers who do not know enough Italian, the gender and number of the head-noun will be indicated in square brackets. Italian adjectives agree with their head-noun in gender (MASCULINE/FEMININE) and number (SINGULAR/PLURAL). There are four adjective classes. The largest class (ex. *bianco* 'white') is that of adjectives which have a distinct inflectional suffix for each feature combination: *-o* for {MASC, SG}, *-a* for {FEM, SG}, *-i* for {MASC, PL}, *-e* for {FEM, PL}. The second largest class (ex. *morale* 'moral') shows no gender distinction: for both genders, in fact, {SG} is realised as *-e*, {PL} as *-i*. The remaining set of adjectives is divided between one group which has a threefold declension (ex. *belga* 'Belgian'), with *-a* for {SG}, both masculine and feminine, *-i* for {MASC, PL} and *-e* for {FEM, PL}, and a group of indeclinable adjectives (ex. *pari* 'even'). This information should allow the reader unfamiliar with Italian grammar to follow the argument of the rest of the paper without interlinear glosses.

[3] The English glosses of the AA sequences are literal translations throughout this paper.

[4] The official designation, by the way, seems to be *Unione economica e monetaria*, with the conjunction *e* 'and' between the two adjectives.

[5] Compare: "Hydrotherapy, ice baths, hot/cold showers: the fountains of youth?" (Internet).

[6] The respective number of occurrences in Google is 10.300 for *amata odiata tv* (in all its orthographic variants) vs. 0 for *amato-odiata tv*. There are only five relevant examples of *amato-odiata* on the Internet, referring to other head nouns.

[7] D'Achille draws the attention to the isolated compound *sacrosanctus* 'sacrosanct', which existed already in Classical Latin and has been attested in Italian since 1309. But it does not seem to have had any direct influence on the rise of AA compounds in Italian from the 17th century onwards.

[8] Neo-Latin AA compounds with a first member of the third declension are exceedingly rare. In *dulc-amarus*, significantly, the stem vowel has been dropped (*dulc-i-s* > *dulc-*): Dornau, C. *Dulc-amarum h.e. de dulcedine ex amaritie crucis* etc. Bethaniæ: Dörfferus 1608. The only really relevant example is the following one, from the middle of the 19th century, which could well be a calque on the basis of a corresponding vernacular example: *abdominis discus viridi-cyaneus* (Annals of natural history 1838:454). The following examples must be discarded, since we have to do with asyndetic compounds whose ending *-i* of the first member expresses the ablative: Rechperger de Rechcronn, Johann Christoph *Jus universum, gemelia sub centuria canonico-morali-politica binoque erotemate civili-theologico clausum…* Viennæ: Schlegel 1699; *De Medici prudentia morali-politica dissertationes XXVI*. Oeniponti: Wagner 1710; Mayer, Chr. *Basis Palatina* etc. Mannheimii: typogr. Electorali-Aulica 1763; Nympach, M. *Moderante numine* […] *in Thuringia electorali-Saxonica* […]. Erfurthi: Rizschelius s.a.

[9] Another, very rare expedient was the simple asyndetic juxtaposition of the two adjectives, which we have already encountered in the preceding note. Here is one more example: Beutel T. *Electorale Saxonicum perpetuo viridans densissimum et celsissimum cedretum* etc. Dresdæ: Bergen 1671. Hatcher (1951:127) quotes two such cases, with a first member of the *-o-* declension, one from 1613 (*Dissertationes physicæ-medicæ*; p. 127) and one from 1677 (*Musæ recentiores sacræ-morales*; p. 187). This strategy became very popular in Italian, as we have already seen in 1. It is possible that some Neo-Latin examples have been influenced by the vernacular usage.

[10] From a diachronic perspective, this is of course no coincidence: Vulgar Latin final *-ŭ* became *-o* in Italian by the normal action of the sound laws.

[11] Migliorini (1960:487) quotes C. C. Scaletti's *Scuola mecanico-speculativo-pratica* (Bologna: Pisarri) as the oldest example of an AA compound in Italian. But this work, according to all catalogues we have consulted, was not published in 1611, as Migliorini writes, but in 1711!

[12] Since we are unable to control all these editions directly, we should not exclude the possibility, of course, that part of the variation is due to the on-line catalogues which we have consulted!

[13] The compound itself is certainly a loan-translation of Neo-Latin *politico-moralis*, though we could not locate it in Latin before 1669 (cf. Intorcetta P. *Sinarum scientia politico-moralis*. Goa).

[14] Note that the *Giornale de' letterati d'Italia* of 1708 already refers to a work *Trattati teorici-pratici* ecc. by Teodoro Nadasti, which however we were unable to locate.

[15] See http://sslmitdev-online.sslmit.unibo.it/corpora/corpus.php?path=name=Repubblica.

[16] AA sequences with *aereo*, *medio*, *piccolo*, *prossimo* and *vecchio* in first position were excluded for different reasons.

[17] If we calculate the mean ratio by groups of ten, discarding the zeros, the first eight groups show the following ratios: 146.16 > 36.67 > 31.26 > 15.83 > 15.84 > 16.47 > 7.41 > 5.88.

[18] One can find on the Internet occasional examples of the kind provided here with an asterisk, but they are exceedingly rare. Another option for first members of the class *-e*/*-i* is, of course, apocope; cf. 7.

[19] Translation: "Compound adjectives with two adjectives […] when inflected only change the final vowel of the second adjective. The first one remains unchanged, taking masculine *-o* in the case of the adjectives of the first class […]; *-e* in the case of the adjectives of the second class: *verdeazzurro* 'green-blue' → *sfumature verdeazzurre* 'green-blue nuances'."

[20] Schweickard (2002), *s.v. Belgio*, only contains one example of *belgio-olandese* from 1833, with an allomorph *belgio-* no longer in use.

[21] There is no relevant example on the Internet, but many of *valdesi-metodiste*, with double agreement, as well as *valdo-metodiste*, with a shortened first member. The *hapax* in (16) therefore could well be due to a typo.

[22] In the case of compounds with more than two members, the number of morphological loci increases accordingly, of course.

[23] The count is based only on compounds beginning with the letters A to G, which include 1.513 adjectives of the *-e* class; 759 of them occur in a pattern of the type *AoAe*. AA compounds predicated of masculine singular head-nouns, though potentially ambiguous between the two types of compounds, were included in this group, as well as compounds with shortened first members such as *catto-comunista*, shorthand for *cattolico-comunista* 'Catholic-Communist'.

[24] The first such case, by the way, is attested already as early as 1617: *favola morale-politica* 'moral-political fable' (Hatcher 1951:137).

[25] In these two cases, therefore, the ordering with the shorter adjective in first position is the more frequent one. One may wonder whether this reflects a prosodic preference for the shorter adjective to go into the first position also in the case of adjectives of the *-o* class. A count of AA compounds with double agreement and two adjectives of the *-o* class indeed indicates a slight preference for this ordering: In 90 randomly selected compounds, A_1 and A_2 are of equal length, in 95 A_1 is shorter and in 62 A_2 is shorter.

[26] The first Italian AA compounds with *etico* in first position are already attested in the 17th century; cf. *Consulto etico-legale sopra le scritture ultimamente pubblicate per parte del signor dottore Moneglia: nella controversia da lui mossa al signor dottore Ramazzini*. Frankfurt 1682. The compound, of course, is a loan-translation from Neo-Latin; cf. Gruterus Janus *Florilegium Ethico-Politicum* etc. Frankfurt 1610.

[27] The most difficult obstacle for a broad statistical assessment of these hypotheses is the operationalisation of the pragmatic condition. In some examples, such as *industrie bieticole-saccarifere* 'sugar beet and sugar industries' or *pittura seicentesca-ottocentesca* 'paintings from the 17th-19th centuries', there is a logical ordering independent of individual speakers' intentions, but in other cases it is much more difficult to pin down the reason why one adjective has been given precedence over another one.

[28] Most authors prefer the dissimilated variant *lumbaris*.

[29] Cf. *Il trionfo d'amore: azione teatrale rappresentata in musica nella imperial regia corte in occasione delle felicissime nozze delle sacre reali maestà di Giuseppe II. d'Austria; e di Maria Gioseffa di Baviera re, e regina de' Roman: l'anno MDCCLXV*. Milano: Cairoli. *Imperial regio* is the translation of German *kaiserlich-königlich* 'imperial-royal'. The unapocopated form *imperiale regio* is first attested more or less at the same time; cf. *Piano, e regole per il buon governo della congregazione de' creditori della Regia Ducal Camera di Milano uniti sotto la protezione di Sua Maestà Imperiale Regia, ed approvate con cesareo reale dispaccio delli 29. gennaio 1753*. Milano: Malatesta.

[30] There is one occurrence, however, of *contabil-giudiziaria* 'id.-judicial' in a blog.

[31] The most detailed description of apocope in Italian we know of is provided by Vogel *et al*. (1983). As these authors have shown, apocope is pervasive in Italian, but subject to a great variety of conditioning factors. The apocope in AA compounds, by the way, is not touched upon. Nor does Scalise (1983:299; 1994:159) mention apocope in AA compounds in his general rule of final vowel deletion in Italian compounding, which does not describe our data correctly.

Bibliographical References

Baroni Marco, Silvia Bernardini, Federica Comastri, Lorenzo Piccioni, Alessandra Volpi, Guy Aston & Marco Mazzoleni 2004. Introducing the *la Repubblica* corpus: a large, annotated, TEI(XML)-compliant corpus of newspaper Italian. In Lino Maria Teresa, Maria Francisca Xavier, Fátima Ferreira, Rute Costa & Raquel Silva (eds.). *Proceedings of the 4th LREC (Lisbon, Portugal, 2004)*. Paris: ELRA. 1771-1774.

Behagel Otto 1909. Beziehung zwischen Umfang und Reihenfolge von Satzgliedern. *Indogermanische Forschungen* 25. 110-142.

Browne John 1684. *Myographia nova* etc. London: Redmayne.

D'Achille Paolo & Maria Grossmann, 2009. Stabilità e instabilità dei composti aggettivo + aggettivo in italiano. In Lombardi Vallauri Edoardo & Lunella Mereu (eds.). *Spazi linguistici. Studi in onore di Raffaele Simone*. Roma: Bulzoni. 143-171.

D'Achille Paolo & Maria Grossmann forthcoming. I composti aggettivo + aggettivo in italiano. In Maria Iliescu, Heidi Siller & Paul Danler (eds.). *Actes du XXVe Congrès International de Linguistique et Philologie Romanes (3-8 sept. 2007, Innsbruck)*. Tübingen: Niemeyer.

Dautry Jean-Jacques 1976. Étude de certains types de composés en français contemporain. *La banque des mots* 11. 25-54.

Goes Jan 2008. L'adjectif composé en français et en néerlandais. In Amiot Dany (ed.). *La composition dans une perspective typologique*. Arras: Artois Presses Université. 115-141.

GROSS Maurice 1988. Adjectifs composés. In BLANCHE-BENVENISTE Claire, André CHERVEL & Maurice GROSS (eds.). *Grammaire et histoire de la grammaire. Hommage à la mémoire de Jean Stefanini*. Aix-en-Provence: Publications de l'Université de Provence. 211-233.

HATCHER Anna Granville 1951. *Modern English Word-Formation and Neo-Latin. A Study of the origins of English (French, Italian, German) Copulative Compounds*. Baltimore: Johns Hopkins Press.

MIGLIORINI Bruno 1960. *Storia della lingua italiana*. Firenze: Sansoni.

MIGLIORINI Bruno 1963[3] [1941[1]]. I prefissoidi (il tipo *aeromobile*, *radiodiffusione*). In ID. *Saggi sulla lingua del Novecento*. Firenze: Sansoni. 9-60 (First vers. 1935. Il tipo *radiodiffusione* nell'italiano contemporaneo. *Archivio Glottologico Italiano* 27. 13-39).

NOAILLY Michèle 1999. *L'adjectif en français*. Paris: Ophrys.

POCHARD Jean-Charles 1996. Préfixation adjectivale ou nominale: suffixation en 'o'. Des pseudo-préfixes aux quasi-préfixes. In RÉMI-GIRAUD Sylvianne & Louis PANIER (eds.). *La polysémie ou l'empire des sens. Lexique, discours, représentations*. Lyon: Presses Universitaires de Lyon. 219-239.

RAINER Franz 1988. Towards a theory of blocking: the case of Italian and German quality nouns. In BOOIJ Geert & Jaap VAN MARLE (eds.). *Yearbook of Morphology 1988*. Dordrecht: Foris. 155-185.

RAINER Franz 1993. *Spanische Wortbildungslehre*. Tübingen: Niemeyer.

SCALISE Sergio 1983. *Morfologia lessicale*. Padova: CLESP.

SCALISE Sergio 1994. *Morfologia*. Bologna: il Mulino.

SCHWEICKARD Wolfgang 1990. Remarques sur l'emploi des adjectifs géographiques composés du type 'canado-allemand' en français. In *Actes du XVI Congrès International des Sciences Onomastiques*. Québec: Presses de l'Université Laval. 527-535.

SCHWEICKARD Wolfgang 2002. *Deonomasticon Italicum. Dizionario storico dei derivati da nomi geografici e da nomi di persona. Vol. I: Derivati da nomi geografici: A-E*. Tübingen: Niemeyer.

SERIANNI Luca & Alberto CASTELVECCHI 1989. *Grammatica italiana. Italiano comune e lingua letteraria*. Torino: UTET.

SKOUSEN Royal & Deryle LONSDALE (eds.) 2002. *An Exemplar-Based Approach to Language*. Amsterdam / Philadelphia: Benjamins.

TOMASELLO Michael 2003. *Constructing a Language. A Usage-Based Theory of Language Acquisition*. Harvard: Harvard University Press.

VOGEL Irene, Marina DRIGO, Alessandro MOSER & Irene ZANNIER 1983. La cancellazione di vocale in italiano. *Studi di grammatica italiana* 12. 191-230.