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Derivational Relators in Italian

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Abstract: The present paper addresses the categorial content of affixes forming a set of denominal adjectives in Italian, arguing that they are substantially the derivational counterpart of oblique case/adpositions. Specifically, we argue that they act as elementary relators, following Manzini and Franco, who characterized oblique cases and prepositions as general relators expressing the relations *is-included* ($\subseteq$)/*includes* ($\supseteq$), or, in other words, their content is what Belvin and den Dikken dubbed "zonal inclusion".

1. Introduction: Background and Aims

In a series of recent papers, Manzini and Franco (2016), Franco and Manzini (2017a, 2017b) argued that datives and genitives are part-whole/inclusion predicates (see Belvin and den Dikken 1997), notated ($\subseteq$). Consider the data provided for Italian in (1).

(1) a. Ho dato le mele   **a** Gianni.
         I gave the apples **to** Gianni
         'I gave the apples to Gianni'
    b. [VP dato [PredP le mele [[$\subseteq$ a] Gianni]]]

Many authors, including Kayne (1984); Pesetsky (1995); Beck and Johnson (2004); Harley (2002); Manzini and Franco (2016) argue that in (1) a possession/part-whole/inclusion relation holds between the dative argument (*Gianni*) and the theme of the ditransitive predicate (*le mele*). Manzini and Savoia (2011a), Manzini and Franco (2016), and Franco and Manzini (2017a) assign an identical ($\subseteq$) configuration to genitive morphemes. Consider the Italian in (2a). The *di* (of) preposition introduces a possession/part-whole/inclusion relation between the argument it selects, here *la donna* (the possessor/inclusor), and the head of the DP, namely *i bambini* (the possessum/inclusee). In a nutshell, the content of the *di* preposition represents the same part/whole relator ($\subseteq$) illustrated for dative morphemes in the example in (1).[1] Thus, in (2b), the ($\subseteq$) predicate has as its internal argument its sister DP (the inclusor) and as its external argument the head of the construction (the inclusee), essentially implying that 'the children' are in the domain of inclusion of 'the woman'.

(2) a. I   bambini   della   donna
         the   children of the woman
         'the children of the   woman'
    b. [DP i bambini [PP$\subseteq$ della donna]]

Manzini and Savoia (2011b) assume that the common dative/genitive syncretism (e.g., in Romanian, as reported in (3)) matches the identical lexicalization of the relator ($\subseteq$) based on a theoretical framework that is roughly illustrated in Section 2.

(3) a. I-l   am   dat   bǎiat-ul-u-i/   fet-e-i
       him/her-it   have   given   boy-the-M-OBL-SG./   girl-F-OBL.SG.
       'I gave it to the boy/the girl'
    b. pahar-ul   bǎiat-ul-u-i
       glass-the   boy-the-M-OBL.SG.
       'The glass of the boy'

Manzini and Savoia (2011b)'s approach is also compatible with languages like Italian or English, having two different lexical forms for datives and genitive (consider the examples in (1)–(2)). Simply, in a language like Italian, the genitive *di* is specialized for the embedding of (⊆) in the nominal domain and dative *a* for the embedding of (⊆) at the level of the sentence.

The inclusion (⊆) account for genitive and dative morphemes has been developed in Manzini and Franco (2016) and Franco and Manzini (2017a) in order to explain the fact that properly identical genitive and dative NPs have different interpretive aspects, along with the fact that crosslinguistically, differences at the level of the syntax–semantics interface can result in divergent patterns of lexicalization.[2]

It is important to notice, for the purposes of our work, that Franco and Manzini (2017b) extend the 'inclusion' account to the other oblique morpheme most likely to appear as an inflectional case marker from a crosslinguistic viewpoint (see Caha 2009), namely the instrumental; in Italian, the instrumental is lexicalized by the preposition *con* (with). We follow Franco and Manzini (2017b) in using the cover term 'instrumental' for all the semantic flavors that may be introduced by *with* like morphemes (see Stolz et al. 2006 for a full typological survey). Franco and Manzini (2017a)'s starting point is the observation originally developed in Levinson (2011), i.e., possession/inclusion relations can be realized by *with* morphemes at the level of noun phrases (cf. also Svenonius 2007a), as shown in (4). The relation in (4) is the mirror image of the ones illustrated in (1) and (2), because the preposition *con* embeds the possessum/inclusee, and the possessor/inclusor is the head of the NP.

(4) La donna   *con*   i   bambini
    the woman   *with*   the   children
    'The woman with the children'

Franco and Manzini (2017b) demonstrated that *with*-like inflections/prepositions express the reverse relation with respect to genitive and dative morphemes, given that the inclusee, rather than the inclusor, is introduced by the oblique case/adposition. Thus, for these *with*-like morphemes, they introduce the (⊇) label and content, as shown in the example (5). What (5) basically says is that the complement of *con* ('i bambini') is the possessum (a part) of the possessor (the whole) 'la donna'.

(5)   [DP la donna [PP(⊇) con i bambini]]

Franco and Manzini also assume that instrumental items supply elementary means of including extra participants (for instance themes, initiators, and so on) (in)to events (VP/vP predicates), with the right interpretation assured by pragmatic enhancement at the Conceptual-Intentional (C-I) interface. They further extend the (⊇) proposal in order to account for the observation that instrumental morphemes are often used in triadic verb phrases in many languages in alternation with dative constructions, as shown in (6) with examples from English.

(6) a. He presented his pictures to the museum. (dative)
    b. He presented the museum with his pictures. (instrumental)

In the present paper, we address the categorial content of affixes encoding denominal adjectives in Italian, arguing that they are the derivational counterpart of oblique case/adpositions. Namely, we assume that the content of a set of denominal adjectival suffixes has the same (⊆) content of the genitive adposition *di* (of), as the morpheme *al* in an adjectival item like *cultur-al-e* 'cultural', or the same (⊇) content of the *inclusor-inclusee* adposition *con*, as the morpheme *-os-* in an item like *fang-os-o* 'muddy'. The core of our pro-

posal is sketched in Section 3, while the potential issues raised by our model are addressed in Section 4.

In a nutshell, our hypothesis, based on Manzini and Savoia (2011a), is that the map of functional categories should be redrawn, by assuming that our functional lexicon is not pre-compiled in the computational component of syntax in a cartographic fashion (see Cinque and Rizzi 2010): functional categories are taken from the very same conceptual inventory as lexical categories and can be delivered by different devices (e.g., inflectional or derivational morphemes, adpositions, applicatives, etc.). The salient features of this theoretical perspective are introduced in the following section.

2. Cross-Categorial Syncretism: A Step beyond Paradigms/Categories

Our core idea is that functional categories externalize relations that do not diverge (qualitatively) from the properties instantiated by the substantive lexicon. The functional lexicon introduces properties which are only "*more elementary, and therefore typically partitioning the conceptual universe into much vaster classes than the exponents of (traditional) lexical categories*" (Franco 2019, p.112). Essentially, we argue that the lexicon precedes syntax, and projects it, following the minimalist principle of Inclusiveness (see Chomsky 1995; Manzini and Savoia 2011a, 2018; Manzini 2017, 2020). Thus, the question of how the elements projected from the lexicon interact with one another under the Merge operation (effectively building morpho-syntactic structures) is crucial, from our perspective.

We assume the existence of a universal conceptual inventory, or at least that the categories of the conceptual system recruited by natural languages are universal. Still, while the underlying conceptual organization of this system is universal, the lexicon cuts it into language-specific flavors, and this is responsible for the greater part of language variation. In line with Manzini and Savoia (2011a, 2018), Manzini et al. (2015), Manzini and Franco (2016), Franco and Manzini (2017a, 2017b), and Franco and Lorusso (2018, 2020), we take the position, formalized by Distributed Morphology (DM) (Marantz 1997, 2007), that the predicative content is recorded in the lexicon without any kind of categorization (i.e., predicative items are bare roots). Hence, categories like nouns or verbs actually are the product of the merger of an a-categorial predicative content with a nominalizing or verbalizing functional head, as the innermost layer of the syntax of words. In spite of this fact, we do not follow Distributed Morphology in the assumption that functional categories are part of a separate, virtually universal lexicon, a kind of "Platonic ontology" of natural languages (see Manzini 2017; Manzini and Savoia 2018; Baldi and Savoia 2021 for relevant discussion). On the opposite side, we assume that the externalization of predicative contents and functional categories move through the same universal inventory (i.e., the same lexicon). An empirical issue that arguably correlates with lexicon organization is syncretism. Distributed Morphology says that morphosyntax works on abstract features, which match the categories of traditional/descriptive grammar (see Halle 1997; Calabrese 1998, 2008). Opacization operations, which obscure the morphosyntactic feature specification, trigger syncretisms. In particular, Distributed Morphology provides a realizational model of the lexicon of natural languages, in which some abstract clusters of features can be rendered by some phonological exponents, with syncretism treated in terms of the rule of underspecification or a set of other morphological reconstruction rules (e.g., fusion, fission, impoverishment, cf. Noyer 1992; Harley 2008, among others) not as overt binary syntactic-semantic features.

Here, we assume a stronger position, that is, we take syncretisms to correspond to natural classes, operating outside the paradigms of the categories of traditional/descriptive grammar.[3] Given that paradigms are the traditional layout of teaching and descriptive grammars, we are certain that they can provide a comprehensive picture of the various declensions (i.e., nominal, adjectival, etc.) of a language. Still, the theoretical framework adopted here predicts that "*paradigms exist nowhere in the competence of speaker-hearers; namely, linguistic data are organized in non-paradigmatic fashion: primitives are too fine grained and the combinatorial possibilities afforded by Universal Grammar too many to achieve a perfect match to descriptive macro-classes*" (Franco 2019, p. 113). In a nutshell, we take the intersection of the

syntactic module with the externalization processes as our primary field of research and this work is part of a stream of investigations on and around the topic of cross-categorical syncretism (e.g., Manzini and Savoia 2018; Franco 2018; Franco et al. 2021; among others).

In other words, our idea is that paradigms have no theoretical value, not even as derived constructs. So, we employ the term "syncretism" to refer to homophony or isomorphism outside of paradigms (as, for instance, in Francez and Koontz-Garboden 2016, 2017). An alternative label for the set of phenomena that we are addressing in the present paper could be "polyfunctionality". Note, however, that we are not concerned with discovering (functionalist) grammaticalization paths (see, for instance, Heine and Kuteva 2002), but in discovering an inventory of (lexical) primitives, which lead to morpho-syntactic derivations.

3. Data and Analysis

3.1. Relational Adjectives

The connection of genitive noun phrases with relational adjectives has been high-lighted by many authors, who argue that the adjectival affix is actually used as a sort of case marking device (see e.g., Levi 1978; Williams 1981; Fabregas 2007; Marchis Moreno 2015; Franco 2017; among others).

We assume that this proposal is on the right track, and, as we sketched above, we specifically argue that the same relational lexical content can be cross-categorially encoded either by (adjectival) derivation, (case) inflection, or stand-alone morphemes (i.e., adpositions).

For a detailed cross-linguistic survey of relational adjectives in Romance languages, we refer to Marchis Moreno (2018). In Italian, so-called relational adjectives are formed by means of various suffixes. We assume that these affixes are all allomorphs encoding the very same *is-included* ($\subseteq$) relational content (cf. also Franco 2017 on ethnic adjectives). Wandruszka (2004, pp. 73–78) and Grossmann (1999) list many affixes which are able to form denominal relational adjectives. Consider the examples in (7) where the relational morphemes within the adjectives are highlighted in bold.

(7) a. processo cultur**al**e
         'cultural process'
     b. freddo pol**ar**e
         'polar cold'
     c. concorso universita**ri**o
         'university competition'
     d. acqua mar**in**a
         'sea water'
     e. paesaggio mont**an**o
         'mountain landscape'
     f. discorso poe**tic**o
         'poetic speech'
     g. incontro calc**istic**o
         'football match'
     h. carcere femmin**il**e
         'women's prison'
     i. trasmissione televis**iv**a
         'television broadcast'
     j. arte naviga**tori**a
         'navigational art'
     k. movimento student**esc**o
         'student movement'
     l. rifiuto ospedali**er**o
         'hospital refusal'
     m. regalo natal**izi**o
         'christmas gift'
     n. catalogo carta**ce**o
         'paper catalogue'

Building on Franco (2017), we can sketch our analysis for adjectives, like those in (7), belonging to the natural class of *is-included* ($\subseteq$) relational adjectives (all the examples above can be paraphrased with a NP modified by a genitive PP, as in the minimal pair *acqua marina*, *acqua di mare* lit. 'water of sea', both 'sea water').

The morphemic analysis of Italian starts from a first component which is the root $\sqrt{}$; following Marantz (1997), we assume that the root $\sqrt{}$ is category-less. Next to the root $\sqrt{}$, different types of morphemes, including derivational and inflectional ones (e.g., gender, number) enter the derivation; usually, inflectional suffixes follow derivational morphemes (see Manzini and Savoia 2017a, 2017b).

We argue that the (derivational) suffixes in (7) syntactically express a relational content (an elementary *belonging to*, *part-whole* relation) that has the ($\subseteq$) signature, as illustrated in the previous section for genitives and datives. The different flavors these suffixes are able to encode are a matter of pragmatic inference, something beyond our core syntactic module. Crucially, based on Borer (2003, 2014) and Savoia et al. (2017, 2018), we assume that the same lexical content can be expressed by inflectional and derivational morphemes, both cross-linguistically and intra-linguistically.[4] In other words, the very same content can be expressed inflectionally (e.g., in languages with case paradigms), and derivationally, as will become clearer below.[5]

The core of the present proposal is that the Italian preposition *di* (of) in the noun phrase (as well as other prepositions like *da*, cf. Franco et al. 2021; Rugna and Franco 2021) expresses the same ($\subseteq$) relational primitive of the derivational items that are recruited in the formation of relational adjectives. Indeed, based on Manzini and Savoia (2007, 2011a), we argue that the operation Merge takes morphemes as its input and single morphemes (within words) are visible to the syntactic computation.

See the examples in (8). Putting aside from our discussion any consideration about the content expressed by the class(ifier) layers (i.e., number and gender values which we simply notate here as Infl and express the Class values in (Manzini and Savoia 2017a, 2017b)), we can assume that both items in (8) can be roughly represented as in (9a) and (9b), where we argue for a fully interpretable ($\subseteq$) node sandwiched between the root and the inflectional layer (visible to agreement) in the syntactic derivation of so called-relational adjectives.

(8)   a.   acqua   mar**in**a
            water   sea(adj.)
       b.   acqua   **di**   mare
            water   of   sea
            both 'sea water'

(9)   a.   [NP acqua [[$\sqrt{}$ mar] [-in ($\subseteq$) [infl -a]]]]
       b.   [NP acqua [PP [P di ($\subseteq$) [NP mare]]]]

This representation is consistent with recent proposals, as the one put forth in Fabregas (2020), who assumes, for Spanish, that: "*a relational adjective derived from a noun is the spell out of a truncated prepositional structure headed by KP, the head that in the prepositional domain marks an argument with inherent case and expresses an underspecified relation with another entity. In contrast to other cases, here the complement of K is an NP denoting a kind, not a DP denoting an individual.*" The same Fabregas acknowledges that the relation instantiated by the case-like morpheme is semantically underspecified. We precisely argue that the 'inclusion' relation introduced by the ($\subseteq$) morpheme has an interpretation which is derived by pragmatic enhancement at the C-l interface.

3.2. Qualifying Possessive Adjectives

We assume that also in the realm of adjectival derivation the relation is included ($\subseteq$) as sketched in the section above can be mirrored by an includes ($\supseteq$) relation. Actually, we argue that the latter relation is expressed by so called qualifying possessive denominal adjectives in Italian, which are encoded by various suffixes. As for relational adjectives, we assume that these suffixes are all allomorphs sharing the ($\supseteq$) signature as their basic

content. Following the descriptive survey of Wandruszka (2004), we provide the following examples of qualifying possessive adjectives in (10). As for the case of relational adjectives in (7), the relevant affixes are highlighted in bold:

(10)　a.　　terreno acqu**oso**
　　　　　　'watery soil'
　　　b.　　animale corn**uto**
　　　　　　'horned animal'
　　　c.　　appartamento finestr**ato**[6]
　　　　　　'windowed apartment'
　　　d.　　bevanda alcol**ica**
　　　　　　'alcoholic beverage'
　　　e.　　zio milion**ario**
　　　　　　'millionaire uncle'
　　　f.　　roccia silic**ea**
　　　　　　'siliceous rock'

According to Wandruszka (2004), qualifying possessive adjectives can be subdivided into two different classes, from a semantic viewpoint. The first class denotes only possession while the second one denotes possession plus an (often pejorative/augmentative) evaluation component, usually relating to the size of the possessed entity, as for instance in *uomo nasuto* '(ugly) man with a big nose'. We argue that this evaluative reading is again derived by an enhancement process, triggered by pragmatics at the Conceptual-Intentional interface and it not mapped by syntax (cf. Savoia et al. 2017; Franco et al. 2020). Indeed, according to the recent survey of Fabregas (2020, p.119–20), there are many different types of concepts that can be associated with possessive adjectives. In this underspecified sense, assuming that possession is better characterized (even in this domain) as (zonal) 'inclusion' in the sense of Belvin (1996) and Belvin and den Dikken (1997), the range of nouns that can act as bases of so-called qualifying possessive adjectives is quite large; Fabregas lists the following sub-classes: body parts (as in *uomo nas-ut-o* above), items of clothing (as in *giudice tog-at-o*, judge wearing a toga), substances (as in *terreno fang-os-o*, muddy ground), structural parts within the internal constitution of an object (as in *piede lob-at-o*, lobed foot), physical entities that can accompany, modify or decorate a given entity (as in *cielo stell-at-o*, starry sky), mental states (ad in *uomo paur-os-o*, fearful man), moral qualities (*donna coraggi-os-a*, brave woman), and diseases (*ragazzo allerg-ic-o*, allergic boy).

In the previous section, we observed that our morphosyntactic model does not substantially differ from other recent theoretical proposals concerning relational adjectives. Where our model clearly differs is in interpreting qualifying possessive adjectives as having the very same internal structure of relational adjectives. Namely, we argue that, for possessive adjectival items, we are dealing with the same structure as the one in (9a). The sole difference is that the direction of the relation is reversed, including ($\supseteq$) content. Consider the examples in (11) and the representation we provide in (12).

(11)　a.　　terreno acquoso
　　　　　　soil water(adj.)
　　　b.　　terreno con acqua
　　　　　　soil with water
　　　　　　both 'watery soil'

(12)　a.　　[NP terreno [[$\sqrt{}$ acqu] [-os ($\supseteq$) [infl -o]]]]
　　　b.　　[NP terreno [PP [P con ($\supseteq$) [NP acqua]]]]

In a word, as illustrated in Section 2, we assume that syntax stems from the lexicon and basically that what you see is what you get. This simple model allows accounting for both relational and qualifying adjectives in the very same morphosyntactic fashion. Basically, we agree with Rainer (2013), who assumes that the definition of 'relation' is not enough to differentiate relational adjectives from possessive adjectives, given that 'possession', as well

as 'similarity' and 'causation', not considered here, are among the possible interpretations of 'relation'.

On the contrary, Fabregas (2020) argued that the syntactic structure of a qualifying adjective differs from that of relational adjectives in the presence of a P head above K, as roughly represented in (13).

(13)
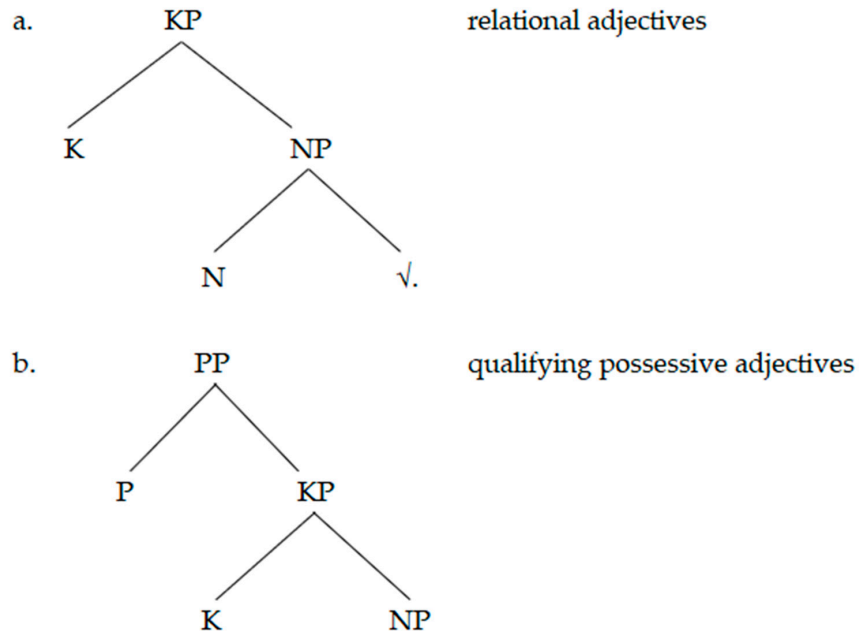
This implies that for Fabregas (2020, p. 65), the qualifying adjective has more structure than the relational adjective. This solution allows Fabregas to explain why relational adjectives differ from qualifying possessive adjectives with respect to some syntactic tests, which we consider in some detail in the next section where we provide some evidence in favor of our proposal.

4. Evidence in Favor of the ($\subseteq$)/($\supseteq$) Proposal

First, the possessive affix-*os* is employed to form *bona fide* relational adjectives in a number of contexts as illustrated in (14):

(14) a. sangue   arterioso
          blood   arterial
          'arterial blood'

      b. poesia   amorosa
          poetry   love(adj.)
          'love poetry'

      c. sistema nervoso
          system nervous
          'nervous system'

In all these cases, it is likely that we have an inclusion relation ($\subseteq$), standardly signaling relational adjectives, expressed by the suffx -*os*, which is usually recruited from the lexicon to encode a ($\supseteq$) value. In the examples in (14), we assume the possibility to encode the two flavors of the 'inclusion' relation in the same base position within the morpho-syntactic skeleton for the -*os*- morpheme, as illustrated with the pair in (15) and (16). This is a more economical solution with respect to the one adopted in Fabregas (2020), where the author assumed the possibility for the suffix -*os*- in Spanish to be the Spell Out of different nodes,

based on the representation in (13), namely K for the example in (15) and the string P-K, via a phrasal spell-out mechanism, in the example in (16).

(15)　　a.　　sangue arterioso 'arterial blood'
　　　　b.　　[NP sangue [[$\sqrt{}$ arteri] [-os ($\subseteq$) [infl -o]]]]

(16)　　a.　　giorno nevoso 'snowy day'
　　　　b.　　[NP giorno [[$\sqrt{}$ nev] [-os ($\supseteq$) [infl -o]]]]

We argue that the application of a phrasal spell-out mechanism, in these contexts, is not empirically adequate due to the fact that the morpho-lexical shape of relational and qualifying possessive suffixes is quite interlinked, and it does not seem to be some idiosyncratic property of the -os- affix that allows it to spell out ($\subseteq$) or ($\supseteq$) values. Indeed, the same possibility is attested for other suffixes, which again are recruited from the lexicon to encode, under the right pragmatic conditions, both flavors of the inclusion relation, as shown in the pairs in (17). This provides evidence that it difficult to assume a clear-cut distinction based on the lexical shape of the affixes, between relation and possessive qualifying adjectives, which, arguably, if lexicon precedes syntax, have the same structural features. Thus, an alternative based on phrasal spell-out appears to be too strong, because it predicts that all the suffixes in (17) potentially instantiate the value K or the string P-K, based on an *ad hoc* mechanism stressing syntactic competence (cf. Chomsky 1995).

(17)　　a.　　zio ($\supseteq$)　　milionario/　　　concorso ($\subseteq$)　　universitario
　　　　　　　uncle　　milionaire　　　competition　　university(adj.)
　　　　　　　'milionaire uncle/university competition
　　　　b.　　bevanda ($\supseteq$)　　alcolica/　　　discorso ($\subseteq$)　　filosofico
　　　　　　　drink　　　　　　alcoholic　　　discourse　　philosophical
　　　　　　　'alcoholic drink/philosophical discourse'
　　　　c.　　roccia ($\supseteq$) silicea/　　　catalogo ($\subseteq$)　　cartaceo
　　　　　　　rock siliceous　　　　　catalog　　　　paper(adj.)
　　　　　　　'siliceous rock/paper catalog'
　　　　d.　　uomo ($\supseteq$)　　maniacale/　　　processo ($\subseteq$)　　culturale
　　　　　　　man　　　　maniacal　　　　process　　cultural
　　　　　　　'maniacal man/cultural process'

Second, our proposal can account for the fact that, as widely recognized in the literature, relational adjectives normally do not allow degree modification while qualifying possessive adjectives do. Consider the data in (18), where an adjective marked with a ($\supseteq$) relator (18a) can take scale modifiers (as molto, very), while an adjective formed with a ($\subseteq$) relator is incompatible with this kind of modification.

(18)　　a.　　un terreno　　　molto　　　　　fangoso
　　　　　　　a ground　　　　very　　　　　muddy
　　　　　　　'a very muddy ground'
　　　　b.　　*un incontro　　molto　　　　　calcistico
　　　　　　　a match　　　　　very　　　　　football(adj.)
　　　　　　　'a very football match'

Fabregas (2020, p. 115), who, as we have seen, assumes a different syntax for qualifying and relational adjectives, argues that a Scale/Degree P is present only within the morphosyntactic skeleton of qualifying possessive items. Specifically, he assumes that the different behavior of relational and qualifying possessive adjectives has to be ascribed to the fact that only the latter allow the "*presence of a ScaleP: if a scale is a set of ordered values, degree modification must necessarily build over that set of ordered values, and when the scale is absent there is no possibility of adding degree. The presence of ScaleP presupposes the presence of PP, in such a way that without PP there is no ScaleP. […] PP is a lexical projection that assigns a conceptual dimension to the relation expressed by K.*"

Actually, we argue that the absence of degree modification with relational adjectives can be explained mereologically, namely, it does not depend on syntax and it has to be

related to the conceptual properties expressed by the inclusion relation (⊆), selected within the morphosyntactic layer forming the adjectival items. We assume that something that is perceived as a 'whole', like the denominal adjectives formed with the inclusion relation (⊆), cannot be modified by degree values, given that it precisely modifies an entity (the head noun) which is taken to be a part of that whole (derivationally encoded). It will be conceptually anomalous/deviant to assume a scale of values for an entity which represents a whole, as long as the whole retains the same parts depicted by the head nouns (see also Adger 2013). Still, this is not a problem pertaining to syntax, given that we can find pragmatic contexts in which also so-called relational adjectives can easily accept degree modification, as illustrated by the example in (19), retrieved via a Google search.

(19) Quindici-zero. Riferimento poco   tennistico e   molto calcistico   allo score
      Fifteen-zero.   reference   little.   tennis   and very football   to the score
      di Josip Ilicic.
      of Josip Ilicic.
      'Fifteen-zero. A reference which is scarcely related to tennis and mostly related to football in Josip Ilicic's score'

On the contrary, something that is taken to be a 'part' of a whole is readily subject to degree modification from a conceptual viewpoint. A part can be bigger or smaller when compared with other parts of a whole; namely, we can instantiate parthood relations based on scale values for them. This is why adjectives formed with the inclusion relation (⊇) usually allow degree modification.

Related to this point, it is the fact that relational adjectives in coordination can modify one single plural head noun, while this is impossible for qualifying adjectives (cf. Marchis Moreno 2018). Consider the examples in (20).

(20) a.   gli ambasciatori   americano   e   cinese
           the ambassadors   American$_{sing}$ and   Chinese$_{sing}$
           'The American and Chinese ambassadors'
      b.   *i   terreni   acquoso   e   fangoso
           the$_{pl.}$ soils   watery$_{sg.}$ and   muddy$_{sg.}$
      b'. i   terreni   acquosi   e   fangosi
           the$_{pl}$ soils   watery$_{pl}$ and   muddi$_{pl}$
           'watery and muddy soils'

Wholes encoding suffixes (⊆) select complete (individual) entities, as in (20a). In the example, USA is taken as an (individual) whole and China is taken as another (singular) whole. It is clear that the sum of two individual wholes expresses a plurality of entities (of individuals, kinds, etc.). This is the reason why a plural noun phrase can show up in these contexts. At the same time, from our reasoning, it follows that it is conceptually infelicitous for the parts of a plurality of wholes as in (20b-b'), encoded derivationally via a (⊇) device, to be taken as singular items. The parts of a plurality of wholes are (at least distributively) plural in turn.

Given the data provided above, we can conclude that there are no clear hints that may lead to assume a meaningful syntactic dichotomy between relational adjectives (⊆) and qualifying possessive adjectives (⊇), proving the idea that both of them are merged in the same layer.

Finally, for what concerns the agreement relation established between the relational/qualifying possessive adjective and the head noun, we basically follow Manzini and Savoia (2017a, 2017b), who assume that matching/agreement of gender/number between the head and the (relational/qualifying possessive) adjective means that the corresponding inflections (Infl) can identify the same argumental slot. In the minimalist framework of Chomsky (2000, 2001), agreement processes are associated with the rule of Agree, which, however, is conceived so as to account for *one-to-one* Agree in the spine of the sentence. Here, we keep the assumption that Agree also works within NPs/DPs. However, we avoid attributing valued/unvalued or interpretable/uninterpretable status to any of the

categories inside NP/DP, as illustrated in Manzini et al. (2019). We simply assume that given two items in a c-command configuration, the higher element is the Probe and the lower element is the Goal. Everything else proceeds as in the standard definition of Agree, by Minimal Search and Match of the relevant features (cf. Manzini et al. 2019). We argue that what impels Agree to apply is the necessity of creating equivalence classes of phi-feature bundles identifying a unique referent (the equivalent of uninterpretable feature deletion).

5. Conclusions

The present paper addressed the categorical content of affixes forming a set of denominal adjectives in Italian, arguing that they are substantially the derivational counterpart of oblique case/adpositions. Specifically, we argued that they act as elementary relators, following Manzini and Franco (2016) and Franco and Manzini (2017a, 2017b), who characterized oblique cases and prepositions as general relators expressing the relations *is-included* ($\subseteq$)/*includes* ($\supseteq$), or, in other words, their content is what Belvin and den Dikken (1997, p. 170) dubbed "zonal inclusion".

Notes

[1]   As an anonymous reviewer pointed out di can also be found with verb such as parlare (talk in Italian) in sentences like parlo di te (I speak of you = I talk about you). However, even in the case of the verb parlare a part whole relation is generally instantiated between a oblique argument introduced by a (parlo a te= I talk to you) or con = with (parlo con te = I talk with you) and the event represented by the verb: the oblique argument introduced by a or con represents the listener in the event of talking. Henceforth the argument introduced by di is not involved in the part-whole relation neither with a theme nor the event of talking, but introducing an aboutness argument: what the event of talking is about. For sake of semplicity, in the present work we will be referring mainly to the arguments involved in a part whole relation either with a theme or with the verbal event.

[2]   For instance, while with dative goals the ($\subseteq$) predicate instantiates a relation between two arguments (that is, the theme and the goal), with experiencers the ($\subseteq$) predicate establishes a relation between an event (the VP) and an argument (precisely, the experiencer) (see the discussion in Manzini and Franco 2016, pp. 230–31). This proposal is coherent with the Applicative literature (see for instance, Pylkkänen 2008, who argues that the same Applicative head (externalized by datives/obliques) may be attached to different places within the syntactic skeleton (i.e., High Applicative vs. Low Applicative heads). This proposal also involves a Lexical Parametrization (Wexler and Manzini 1987) approach in accounting for the difference in lexicalization depending on the presence of lexical items presenting some formal grammatical properties.

[3]   The idea that syncretisms correspond to natural classes is certainly not novel. Jacobson (1936) assumes that syncretism can be taken to reveal the fine-grained structure of a set of underlying (binary) featural distinctions. In recent literature this idea is strongly associated with the work of Gereon Müller (cf. e.g., Müller 2007). This is deemed to be too strong a position face to empirical evidence–yet the conclusion is based on assuming/revising the traditional repertory of categories and features (cf. also Stump 2001; Baerman et al. 2005; Grimm 2011, among others).

[4]   For instance, in Romance languages, inflectional morphemes can introduce properties more standardly introduced by derivational tools, for example category change, size properties (e.g., melo 'apple tree'/mela 'apple'; buco 'hole'/buca 'pit', cf. Franco et al. 2015). Conversely, derivational morphemes can introduce types of contents generally associated with inflection, as for instance gender specifications, which is also introduced in Italian by the derivational suffix -ess (e.g. operaio-operaia 'male/female labourer' vs dottore-dottoressa 'male/female doctor').

[5]   Things do not change when we introduce in the picture stand-alone morphemes such as adpositions, which generally express a bona fide relational content, as illustrated in (1), (2) and (5).

[6]   It is arguable that there is a clear connection between the denominal suffix-at-in (10c) and the Italian past participle. The same facts have been recognized for Spanish in Gil Laforga (2014) and Fabregas (2020, p. 134), who notes that many different languages

have the same pattern, suggesting that: "*this is not a case of accidental homophony, but that there is a deep connection between participles and morphemes expressing possession*". We will address this issue in future works, precisely dealing with the aspectual values encoded by participles.

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