A Modular Approach to the Selectional Properties of Derivational Affixes

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0. Introduction

In this paper[1] we discuss the selectional properties of derivational affixes. We propose to derive their categorial-selection (henceforth c-selection) from a set of more abstract properties.

We propose that c-selection for derivational affixes follows from the interaction of independently needed principles within a fully modular conception of the grammar, that is a model of grammar where the principles apply to syntactic as well as lexical structures.[2]

This paper is organized as follows. In the first section, theoretical problems with c-selection are identified. In section two, it is shown that c-selection can be derived. In section three, it is shown that the empirical shortcomings of c-selection can be overcomed within our proposal. The last section presents a brief discussion of the differences between the selectional properties of derivational heads and functional heads.

1. Theoretical problems

C-selection for derivational affixes is widely assumed in the literature (Aronoff 1976, Selkirk 1982, Borer 1991, Lieber 1992 among others). It is a lexical specification indicating for each specific affix of a given language i) the selection of a specific complement by that affix, ii) the linear order of the complement with respect to the affix and iii) the categorial nature of the complement.

The general form of this device is given in (1), where C stands for a lexical category, namely Noun, Verb and Adjective.

(2) See Di Sciullo (1990) and (in preparation) for discussion of the hypothesis of Relativized Modularity, one consequence of which being that the principles of the grammar apply to lexical representations.

(1)   suffix : (C __)

Let us start by pointing out some theoretical problems with this device.

A first problem with c-selection for derivational affixes is that it is superfluous with respect to the principles ensuring the well-formedness of complement-head structures.

There are similarities between derivational affixes and lexical heads which indicate that they share the basic properties of heads in complement-head structures.

A first similarity is that their categorial features project to the structure they head (Williams 1981, Selkirk 1982, Di Sciullo and Williams 1987, Lieber 1992). A second similarity is that a selected complement must be projected within the structure.[3] Thus, the first requirement of c-selection for derivational affixes, identified above, i.e. that c-selection specifies the selection of a specific complement by a given affix, follows from the principles ensuring the well-formedness of structures such as the ones in (2), where X is a lexical category.

(2)   a.   X   b.   X
            /\   /\
        X   Compl   Compl   X
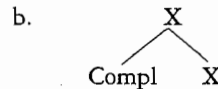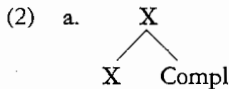
A second theoretical problem with c-selection for derivational affixes is that it fails to capture the generalization that heads across categories appear uniformly on one side of their complement.

This is generally the case for derivational heads as well as for lexical heads cross-linguistically. So for instance, it is generally the case in English that category-changing affixes follow their complement (as do the causative affix -*ize* and the nominal affix -*ion*) while non category-changing affixes precede their complement (as do the negative affix *un*- and the iterative affix *re*-).[4] C-selection does not explain why this is the case. Moreover, it does not explain why there is an asymmetry in the position of a derivational head as opposed to a lexical head in some languages. In English and Italian, for instance, a derivational head follows its complement, whereas a lexical head precedes its complement. This is not the case universally though, since there are languages, such as Japanese and Yoruba, which present no asymmetry with respect to the head-complement order (Law 1990). In Japanese, affixal and non-affixal heads are both final, and in Yoruba they are both initial. C-selection for derivational affixes does not state any generalization with respect to the position of an affixal head with respect to its complement, nor does it explain the difference between languages with respect to the position of an affixal head as opposed to a lexical head.

A third theoretical problem with c-selection for derivational affixes is that it does

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(3) However, a derivational affix always selects a complement, whereas this is not necessarily the case for a lexical head.

(4) There are few category-changing affixes which precede their complement, such as *en*- (*enlarge*) and *de*- (*deplane*) in English, as well as a few non-category changing affixes which follow their complement, such as the diminutive suffix -*ino* in Italian (*tavolino* 'small table'). See Di Sciullo (to appear) for discussion.

not capture the regularities in semantic selection which hold beyond the cross-linguistic c-selection variation. The following example illustrates this point.

In Italian, the suffix *-ino* may combine with a noun (3a) or a verb (3b) to form nominals which may designate an activity. In English, the suffix *-er* also forms nominals which may designate an activity.[5] However, the suffix *-er* combines only with verbs.

(3) a. posta / postino   b. imbiancare / imbianchino
         post office / postman   paint / painter
         questura / questurino   spazzare / spazzino
         police station/ policeman   sweep/ sweeper

(4) a. bread / *breader   b. bake / baker
         book / *booker   teach / teacher

These suffixes are similar with respect to semantic selection. They both select a predicate which denotes an activity. So, for example, a *questurino* is someone who regularly does the activity at the police station and a *teacher* is someone who regularly does the activity of teaching. The semantic similarity between *-ino* and *-er* should be accounted for. Clearly, it does not follow from their c-selection, as represented in (5).

(5) a. -ino: [{ N,V} __]   b. -er: [V__]

In this section, we identified three theoretical problems with c-selection for derivational affixes: it is superfluous, it does not capture cross-categorial regularities concerning the position of the head with respect to the non-head and it does not relate the semantic regularities and the cross-linguistic variation with respect to the selectional properties of derivational affixes.

C-selection for derivational affixes is a lexicall stipulation. In the next section, we consider how it can be derived.

2. Deriving C-selection

The effects of c-selection for derivational affixes can be derived from independently needed principles of the grammar in the following way.

That affixes as well as non-affixal heads must be inserted in frames labelled with the same category is ensured by X Theory, which we formulate as in (6). This formulation is an extension of Speas' (1990) proposal which only applied to words. The formulation which is presented in (6) is more general, it covers both words and affixes.

(6) Project A
     An element of category X is dominated by an uninterrupted sequence of X-nodes.
     $X = X_{max}$ iff VG which dominates X, G=X
     $X = X_0$ iff X immediately dominates an element.
     element = affix, word.

(5) The suffix *-ino* in (3) is distinct from the diminutive suffix *-ino* in cases such as *tavolino* ('small table'). There is also the superlative suffix *-er* which is distinct from the suffix *-er* in (4).

The relative ordering of an affixal head with respect to its complement can also be derived. If we assume that affixal and non-affixal elements are treated on a par with respect to the projection of their categorial structure, it is possible to derive their linear order from the directionality of Government, assuming that it can be set for all heads X (non-affixal and affixal), as suggested in Law (1990), and represented here in (7) and (8). It is also possible to derive the order of an affixal head with respect to its complement from the Theory of Movement, assuming that the head occupies the same position, as in (9), and that the complement of an affixal head, say a derivational suffix in languages such as English and Italian, moves to satisfy the requirements imposed by the affix, as in (10) and (11).[6] We will not consider the motivations for each one of these analyses here.[7]

(7)   X   (8)   X   (9)   X
         /   \   /   \   /   \
        X   Y   Y   X   X   Y

(10)   X   (11)   X
          /   \   /   \
         X   Y   Y   X
                                                 /   \
                                                X   Y
                                                      |
                                                      t
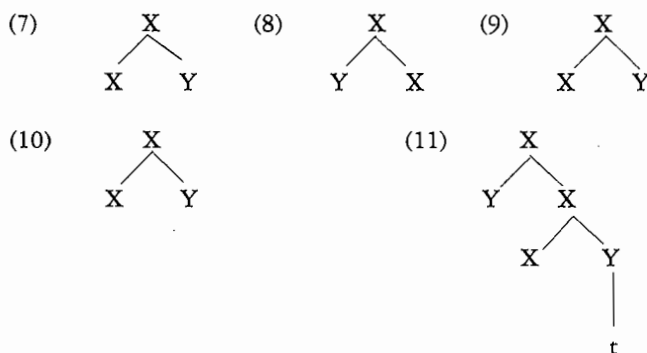
The categorial nature of the complement selected by a derivational head follows from the Canonical Structural Realization (Grimshaw 1981, Pesetsky 1982), which is needed independently for lexical heads. The CSR is a function which maps a concept onto a category. We propose that this function is relevant in the selectional properties of derivational affixes. Assuming that derivational suffixes select concepts such as THING, EVENT or PROPERTY as their arguments, these concepts are mapped onto categories by the CRS.

(12) Canonical Structural Realization (CSR)
      CSR (Concept) = Category

The mapping of concepts onto categories is required independently to derive the selectional properties of lexical heads; the parametrization of this mapping can accont for the difference in c-selection between items from different languages which are similar with respect to semantic selection (henceforth, s-selection).

The examples in (13) are relevant in this respect. The verb *phone* and its Italian equivalent *telefonare* have the same argument structure, which is informally specified in (14). However the verbs differ in c-selection: *phone* c-selects a NP, *telefonare* selects

(6) A syntactic derivation for nominalizations has been proposed (Murasugi 1989, Hazout 1990, Picallo 1990/1992, Valois (to appear)). In these analyses, the nominal affix selects an XP complement and event nominals are derived by syntactic V-movement to the nominalizing affix.

(7) See Di Sciullo (to appear) and (in preparation) for discussion.

a PP, as evidenced by the fact that NP movement can occur in English but not in Italian, as in (16).

(13) a. Maria ha telefonato a Lucia.
     b. Mary phoned Lucy.

(14)   (AGENT, affected GOAL)

(15) a. telefonare: (__PP)
     b. phone: (__NP)

(16) a. *Lucia è stata telefonata.
     b. Lucy has been phoned.

If we assume that an affected GOAL must necessarily map onto a preposition in Italian and that it does not have to in English, we can capture the difference observed in structures such as (13) as well as in structures such as (17). In both cases the affected GOAL phrase can occur without a preposition in English, but it must occur with a preposition in Italian. As opposed to affected GOAL phrases, unaffected GOAL phrases map onto prepositions in both languages, as exemplified in (18).[8]

(17) a. Paulo da un libro a Gianni.   d. Paul gives John a book.
     b. Paul gives a book to John.   e. *Gianni fu dato un libro.
     c. *Paulo da Gianni un libro.   f. John was given a book.

(18) a. John walked to the store.   c. Gianni ha camminato fin al negozio.
     b. *John walked the store.   d. *Gianni ha camminato il negozio.

Let us assume that the Grammar provides a mapping such as the one partially presented in (19). This mapping, in conjunction with the Lexical Conceptual Structure of a given head, derives the c-selection of that head. We propose that this holds for both derivational affixes and lexical heads.

The parallelism between the form of the Lexical Conceptual Structure of lexical categories and derivational affixes can be seen in comparing the proposed representation of the affixes in (21) to the Jackendovian representation of the verb *put* in (20).

(19) Mapping of concepts onto lexical categories
     a. THING   noun   c. PROPERTY   adjective
     b. EVENT   verb   d. MANNER   adverb

(20) put: [CAUSE (xTHING [GO (yTHING, zPATH)])]

(21) -al: [HAVE [(xTHING) PROPERTY]]
     -ize: [CAUSE [xTHING [GO [yTHING (zPROPERTY)]]]]]
     -able: [POSSIBLE [xTHING [(eEVENT) yTHING]]]
     un-:   [NOT [BE (xPROPERTY)]]

In the notation in (21), the material in parentheses is selected by the affix, in the

_____

(8) The mapping of concepts onto categories is also required to account for the differences between languages with respect to the categories available in each language. So for instance, English has particles, and French does not. This difference is, according to Klipple (1991), due to the fact that the concept of DIRECTION is mapped onto prepositions (particles being a sort of preposition) in English and onto verbs in French. Consequently, a preposition must occur in the transitive use of *put* in English, whereas this is not the case for French, as exemplified in (i). The examples in (ii) present further cases.
(i) a. *John put a hat.   / b. John put on a hat.   / c. Jean a mis son chapeau.
(ii) a. John went out. / Mary walked in. / Paul went up.
     b. Jean est sorti. / Marie est entrée. / Paul est monté.

sense that only the concept enclosed in the parentheses maps onto a category wich is governed by the suffix in the syntax. The material outside the parentheses does not map onto a category which is governed by the suffix in the syntax. The concepts are in capitals and the arguments are represented by the variables x, y, z, e.

Let us consider an illustration of our proposal. We propose that the Lexical Conceptual Structure of the suffix *-ize* is represented as in (22). It is a causative suffix, it has two arguments which map onto A-positions in the syntax. It also selects an argument which is a PROPERTY, thus an adjective by (19c), which is the only argument which is governed by the suffix. This is represented in (23), obtained by X' Theory, and (24) obtained by movement.

(22)
```
                        EVENT
                       /\
              CAUSE     |
                   /\
             xTHING  |
                  /\
            GO (yPROPERTY)
```

(23)   V   (24)   V   (25)   V
             /\   /\   /\
            V   A   A   V   A   V
            | | | /\ | |
          -ize legal   legal V t   legal -ize
                                            |
                                           -ize
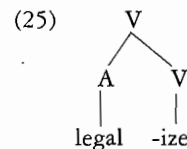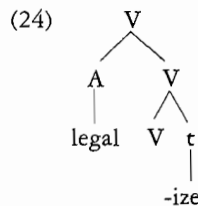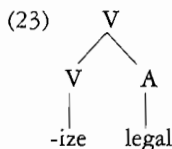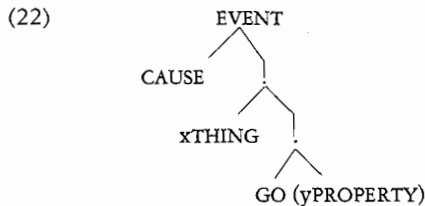
Thus, c-selection for derivational affixes can be derived from independently needed principles. In the next section we show that c-selection has empirical shortcomings and that they can be overcome within our proposal.

3. Descriptive problems

We will discuss the selectional properties of the English affix *-able*, in order to show that c-selection fails to account for the acceptability of *-able* constructions which are otherwise well-formed with respect to their categorial structure.

According to Lieber (1992), the adjectival suffix *-able* c-selects a verb, as in the representation in (26).

(26) -able: [V__] A

As stated, (26) correctly accounts for the fact that the suffix cannot compose with an item from a category other than verb. Thus, nouns and adjectives are excluded, as in (27a,b). However, (26) does not account for the fact that *-able* does not select intransitive and ergative verbs, as exemplified in (27c, d).

(27) a. *niceable, *downable   c. *This person is screamable.
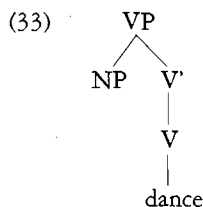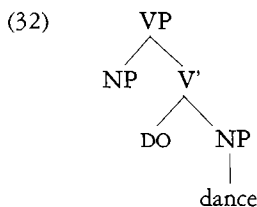   b. *bookable, *theoryable   d. *Paul is arrivable

To state, as in (28), that the suffix selects a transitive verb (Scalise 1990) is not

good enough either. Even though it accounts for (29), where the suffix combines with a transitive verb, as well as for (30), where the suffix combines with an indirect transitive verb, it is not clear that it also accounts for (31). If cognate object verbs are intransitives at the syntactic level of representation (Hale 1990), there would be at least one class of verbs that would invalidate (28).

(28) -able: (Vtr___)

(29) a. Such a theory is desirable.   d. This person is likeable, hatable, beatable...
         b. This problem is solvable.   e. These vases are breakable, countable....
         c. This book is readable, teachable...

(30) a. They talked to Mary.   c. They voted for peace.
         b. *Mary is talkable.   d. *Peace is voteable.

(31) a. Jonh danced a dance.   c. John sang a song.
         b. This is danceable.   d. This is singable.

Note however that the suffix *-able* may combine whith a cognate object verb given that it is a diadic predicate at some level of representation, such as (33) (from Hale 1990). According to Hale, these verbs are diadic predicates at the level of Lexical Relational Syntax, which is a pre-syntactic level of representation equivalent to Argument Structure. In (32), the noun *laugh* is the internal argument of the abstract verb DO. The noun incorporates into the abstract verb before D-Structure, giving rise to the structure in (33), where the trace of the noun has been erased. At D-Structure cognate object verbs are intransitives.

(32)
```
        VP
       /  \
     NP    V'
          /  \
        DO    NP
               |
             dance
```

(33)
```
        VP
       /  \
     NP    V'
            |
            V
            |
          dance
```

-Able adjectives cannot be predicated of an external argument, as exemplified in (34). This fact indicates that argument-structure restrictions rather than categorial restrictions are relevant for the selection of derivational affixes such as *-able*.

(34) a. John danced   c. John sang.
         b. *John is danceable   d. *John is singable.

The facts in (35) and (36) bring further support to the claim that the categorial properties of the complement selected by a derivational affix do not provide fine enough distinctions. The examples show that the suffix *-able* may combine whith verbs which are ditransitive, but not with ditransitives which include a Goal.

(35) a. They compared A and B   c. They prefer A to B.
         b. These theories are comparable.   d. A is preferable.
         e. They transformed the rules into principles.
         f. The rules are transformable.

(36) a. John gave money to the church.   c. John bought this car to his son.
     b. *Money is givable.   d. *This car is buyable.

Moreover, there are transitive verbs that do not combine with the suffix. This is the case for auxiliaries, modals as well as a subclass of transitive verbs, as exemplified in (37) to (40).

(37) a. There is a connectionist at the inn.
     b. *A connectionist is beable at the inn.
     c. They have this book at the inn.
     d. *This book is havable at the inn.

(38) a. They may come.   /   b. *It is mayable.
     c. They must come.   /   d. *It is mustable.
     e. They can come.   /   f. *It is canable.

(39) a. Man fears fire.   f. *John is resembleable.
     b. *Fire is fearable.   g. They appreciate this attitude.
     c. Life worries this man.   h. This attitude is appreciable.
     d. *This man is worriable.   i. They detest this man.
     e. Paul resembles John.   j.ˑ This man is detestable.

(40) a. They know this theory   e. They learned this theory.
     b. *This theory is knowable.   f. This theory is learnable.
     c. They own this book.   g. They modified this theory
     d. *This book is ownable.   h. This theory is modifiable.

That -able does not select auxiliaries indicates that conceptual selection rather than categorial selection is relevant, since it is generally assumed that auxiliaries are conceptually empty (Guéron 1991, Tremblay 1991). That -able does not select indirect transitive verbs and double object verbs indicates that the selected predicate must directly govern its internal argument.

We will explore the hypothesis that the selection of derivational affixes can be defined in terms of the configurational properties of the predicate they select. This hypothesis can be substantiated as follows.

First, the argument structure of the selected predicate is relevant for determining the selection of a derivational affix. Recall that the suffix -able selects a predicate which must have a direct internal argument at a lexical level of representation, as evidenced by the cognate object facts for instance. Thus the relative prominence of the arguments of the predicate selected by the affix is relevant.

Second, the aspectual structure of the verb selected by the suffix is also relevant. According to Pustejovsky (1989), events differ with respect to their internal branching properties. Thus, States are non branching events, they differ from branching events such as Processes and Transitions, the latter type of events is subdivided into Simple Transitions, Logical Transitions and Cumulative Transitions, as represented in (41).

(41) a. State (S):   *sick, love, know* $[S \ e \ ] S...$
     b. Process (P):   *run, push, drag* $[P \ e_1..e_n] \ P$
     c. Transition (T):   *give, build, close* $[T \ e \quad e]T$
                          build, draw, destroy $[T \ [P^* \ e_1...e_n]P^* \ e]T$
                          die, lose, win, arrive $[T \ [Pe_1...e_n] \ P \ e^*]T$

These distinctions may be used to sharpen the selectional properties of the suffix *-able*.

It appears that on the one hand, the suffix *-able* does not generally select States such as *resemble* and *know*, as shown by the starred examples in (39) and (40). However, the suffix combines with verbs such as *love, respect* and *admire*, which are States. On the other hand, the suffix may combine with Processes (*run, push, drag*) or Transitions (*give, open, build*), provided that they are diadic predicates. So for instance the verbs such as *die, lose, win* and *arrive* are all Culminating Transitions, however **dieable* and **arrivable* are impossible, whereas *losable* and *winnable* are. Why is it so?

A closer look at stative predicates leads us to distinguish the predicates which are symmetrical statives, such as the ones in (42), from those that are not symmetrical, such as the ones in (43).

(42) a. This   is similar   to that.   c. *This person is resemblable.
              is equal   d. *One pound is weightable.
              is near
     b. This   resembles   that.
              weighs as much as

(43) a. x   loves   y.   b. This person is admirable.
            hates   likeable.
            likes   hateable
            admire   lovable

Symmetrical statives denote predicates which have persistent properties in time. This is not the case for non-symmetrical stative predicates, as shown by the examples in (44).

(44) a. ?Suddenly,   @ is similar to AT.
                        2 and 2 is equal to 4.
                        Ferrara is near Venice.
                        this resembles to that.
                        this weighs as much as that.
     b. Suddenly, John likes his boss.
                         hate
                         admires
                         loves

This indicates that stative verbs, as well as non-stative verbs may denote permanent or transitory properties.

The distinction between predicates that denote transitory properties vs. predicates that denote permanent properties is known as the distinction between stage-level predicates and individual-level predicates (Carlson 1977, Kratzer 1989). An individual-level predicate denotes the properties attributed directly to an individual. A stage-level predicates denotes the properties attributed to a temporal part of an individual.

According to Carlson (1977), stage-level predicates select the existential reading for the bare plural, verbs, progressives, passives, certain adjectives and most PPs.

Individual-level predicates select the universal interpretation of the bare plural, verbs, passives, certain adjectives, all predicate nominals, and few PPs.

Even though the distinction between stage-level and individual-level predicates cannot be a distinction that is made in the lexicon of a language once and for all,[9] Kratzer (1989) argued that stage-level predicates have an extra argument position for events or spatio-temporal location (Davidson 1967) in their argument structure. Individual-level predicates lack this position. To this extent, the Argument Structure of stage-level predicates is configurationally more complex than the Argument Structure of individual-level predicates. Let us consider the hypothesis that the suffix *-able* selects a predicate which has the internal structure of stage-level predicates.

(46) *-able* selects an eEVENT.

Given the mapping between concepts and categories in (19), (46) prevents adjectives, nouns, prepositions and adverbs from being selected by the suffix *-able*. Moreover, it prevents verbs that cannot be stage-level predicates from being selected by the suffix. It predicts that the predicates in (47a) can combine with *-able*, even though these predicates differ in c-selection. It excludes predicates such as (47b).

(47) a. Stage-level :   sing, dance, laugh
                              impress, repair, hit
                              learn, refute, explicate, dispute
                              compare, prefer, learn
                              transform, place, change,...
     b. Individual-level: know, resemble, weight,...

We propose that the Predicate Argument Structure of the suffix *-able* is (48), where again the selected material is in parentheses.

(48) -able: [POSSIBLE [x$_i$THING   [eEVENT] yTHING]

In (48), the modal operator POSSIBLE c-commands the selected predicate, which is an EVENT with an *e* place, it has an external argument variable *x*, with an arbitrary index *i* and an internal variable *y*, both *x* and *y* are THINGs.

(49)   PROPERTY
                      ╱   ╲
           POSSIBLE   .
                          ╱   ╲
                   x$_i$THING   .
                         ╱   ╲
                  (eEVENT)   yTHING
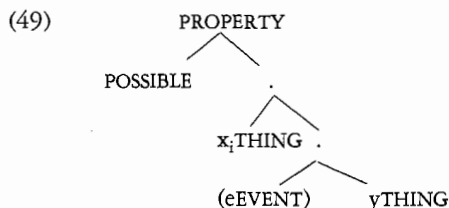
The proposed representation accounts for the selectional properties of the suffix *-able*. That the predicate selected by the suffix must be able to denote a transitory property is attributed to the fact that it is in the scope of the modal operator POSSIBLE.

(9) Given predicates may in some case denote a permanent property and in another case denote a transitory property, as is the case for the verb *run* and the adjectives *sick* for instance.

The arbitrary generic interpretation of the implicit external argument, as exemplified in (50), is attributed to the fact that by default it has an arbitrary index.

> (50) a. This book is readable.   b. This book is readable by anybody.
>   c. It is possible for anybody to read this book.

Moreover, we propose that the suffix itself has properties from which its categorial features follow. *-Able* denotes a permanent property, a PROPERTY without an *e* place. From (19b) we derive the fact *-able* is of the category adjective.

Given that the suffix is the head of a deverbal adjective structure, we predict that the derived adjective will have the syntactic properties of individual-level predicates. This prediction is borne out. *-Able* adjectives cannot occur in *there*-constructions, as in (52). Temporal and spatial expressions cannot modify them, as in (53), and they have the usual interpretation of individual-level predicates in constructions such as (54).

> (52) a. *There are linguists hospitable.   c. *There are chairs transformable.
>   b. *There are people impressionable.

> (53) a. *There are linguists hospitable at the inn / this morning.
>   b. *There is a dance danceable at the inn / this morning.
>   c. *There are chairs transformable at the inn / this morning.

> (54) a. There are chairs available.   b. *There are chairs transformable.

Our proposal allows us to account for lexical idiosyncrasies related to *-able* suffixation, for instance, the fact that some nouns can combine with the suffix, such as in (55). These nouns would have stage-level properties under our account. They would designate THINGS which have transitory properties and not permanent ones. We thus predict that the adjectives (56) are excluded.

> (55) companionable, marriageable, reputable

> (56) *sunable, *airable, *eartable, *fireable   (57) a former companion

The distinction between stage-level predicates and individual-level predicates holds cross-categorially, and is likely to be relevant in the selection of other suffixes, as we will discuss briefly in the next section.

> (58) EVENTe   PROPERTYe   THINGe   >   STAGE
>   EVENT   PROPERTY   THING   >   INDIVIDUAL

In this section we provided evidence that the selectional properties of a derivational suffix can be stated in terms of the properties of its argument Structure.

The distinction between stage-level and individual-level predicates can also be shown to be relevant for the selection of other derivational affixes.

The adverbial suffix *-ly* may combine with adjectives which are individual-level predicates, such as (60), as can be seen in (61). The examples in (62) show the relevant distinction between *ready* and *altruistic*. The former being a stage-level predicate and the latter being an individual-level predicate.

> (59) intelligent, incredible, boring, altruistic,....

(60) alive, available, drunk, naked, ready,....

(61) a. Linguists behave altruistically / intelligently / boringly.
      b. *Linguists behave availably / alively / nakedly.

(62) a. There are linguists ready.   b. *There are linguists altruistic.
      c. Linguists are ready. (There are linguists who are ready)
      d. Linguists are altruistic. (# There are linguists who are altruistic.)
      e. Being ready, John left.
      f. #Being altruistic, John left. (intended interpretation)
      g. Linguists are ready at the inn / this mornig.
      h. #Linguists are altruistic at the inn / this morning.

The suffix -*ly* selects a PROPERTY without an *e* place in our system, as in (63).
This allows us to predict that the suffix -*ly* may combine with -*able* adjectives, given
that the latter denote individual-level predicates. This is possible in English, pre-
dictably is an example.

(63)   MANNER
                        ╱   ╲
             BE   (PROPERTY)
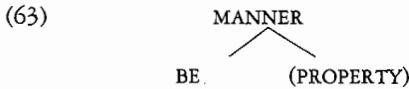
(64) a. This is predictably correct.   b. John was predictably rude.

Moreover, the suffix -*ly* does not combine with intersective adjectives, such as *red*
and *young*, as exemplified in (65), which can denote sets of stages of things (cf.
Carlson 1977: 179). Adjectives such as *excellent*, which are no-intersective may
combine with -*able*.

(65) a. *John walks youngly.   (66) a. John performed excellently.
      b. *Mary paints the house redly.   b. Mary sang admirably.

Thus, the selectional properties of the suffix -*ly* provide some additional evidence
for our proposal, basically, that a derivational suffix has Predicate Argument Struc-
ture properties which restrict the class of its complement. These properties are not
predictable from c-selection.

4. Lexical selection vs functional selection

One theoretical consequence of our approach is that it provides an explanation to
the following generalization:

(67) A derivational affix may only select a lexical category.

Assuming the distinction between thematic and functional categories (Abney
1988, Speas 1990), (67) correctly excludes the selection of a functional category by a
derivational head. It makes the correct predictions for English, preventing a deriva-
tional affix from selecting DET, COMP or TENSE for instance.

(68) a. *the-ion, *a-er, *this-ness   b. *that-ity, *if-ness, *who-ity

It is possible to derive (67) from the assumption that derivational affixes differ
from functional categories in the formal properties of their Argument Structure.

According to Speas (1990), which follows Higginbotham (1985), functional categories are theta-binders. They have theta-grids but differ from theta-assigners, that is from lexical categories in the form of their Argument Structure. The latter have potential referential argument variables in their Argument Structure and they are not theta-binders.

As illustrated in (70), the argument of the determiner *the* is linked to the property variable and not to the referential variable. When *the* combines with a common noun, the argument position of the noun merges with the property position of the quantifier. Thus the set of expressions denoted by the common noun is identified as the property that is being restricted by the quantifier.

$$(70) \quad \text{the} : \qquad <1>$$

$$\text{THE x such as} \quad \overset{|}{P} \ (x) \ (Speas \ 1990: 114)$$

We propose that derivational affixes differ from functional categories in the form of their Argument Structure.

Unlike functional categories, derivational affixes are not theta-binders. When a derivational affix combines with a lexical category, an argument position of the lexical category is linked with an argument position of the suffix, as represented in (71) and (72) (irrelevant details omitted).

$$(71) \quad \text{humanize: } (e\,(x, y)\,)$$

-ize   human
$(e\,(x,y_i))$ (y_i)

$$(72) \quad \text{readable: } (y)$$

-able   read
$(x_{\,arbi},y_j)$ (x_i,y_j)

Moreover, unlike functional categories, derivational affixes have potential referential arguments variables in their Argument Structure. These properties restrict their selection to lexical categories.

5. Summary

In this paper we propose that the c-selection for derivational affixes is derived from the interaction of independently needed principles of the grammar.

The well-formedness of the structure they head follows from the interaction of X Theory and the Theory of Movement, while the categorial nature of the complement selected by a derivational affix follows from the CSR.

One consequence of our proposal is that derivational affixes and non-affixal (thematic) heads are not different with respect to the nature of their selectional properties. Another consequence is that lexical idiosyncrasies can be reduced and specific morphological phenomena, the traditional word-formation rules, can be given a principled account.

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