WHY CAN ONE BE *IRRITABILE* 'IRRITABLE' BUT CANNOT BE **DIVERTIBILE* 'AMUSE+ABLE'? ON ITALIAN *-BILE* ADJECTIVES FROM PSYCHOLOGICAL VERBS

Antonietta Bisetto
University of Bologna

1. INTRODUCTION

It is a well-known fact that derivational suffixes usually make a selection on the lexemes constituting their base of application. Selectional restrictions, be they expressed in category or semantic features, represent a way to illustrate the 'behaviour' of a suffix, namely to describe which base lexemes are the preferred ones. As a consequence, a description of less preferred / avoided base lexemes is achievable too.

The adjective forming suffix *-bile*, as well as its equivalents in other languages, is one of the most discussed suffixes because, as is known, it cannot be joined to all the (transitive) verbs of the language. The ways in which the application domain of this suffix was set out[1] were proved to be inadequate. The proposed restrictions, in fact, were either too strong or too weak. They were too strong because they allowed the suffix to apply to both the good verbs and verbs whose *-bile* derivatives are completely unacceptable or not always perfectly acceptable by an Italian native speaker. They were too weak for the opposite reason: the restriction prevented the suffix to apply to verbs for which the derivative was either listed in dictionaries or freely used in spoken language[2]. Recently, Bisetto & Moschin (2012) have demonstrated that this Italian suffix seems to be sensitive to information regarding the verb *Aktionsart*. Actional properties of verbs seem, thus, to be the correct way to adequately account for *-bile* attachment.

Following this recent suggestion, the paper will focus on the formation of *-bile* adjectives from psychological verbs. In particular, the paper aims at explaining why psychological verbs of the Object Experiencer (=ObjExp)

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[1] Cf. section 2.

[2] See Bisetto (2001) for a discussion of these restrictions.

type admit the formation of adjectives like *irritabile* but exclude others like *divertibile*[3].

The paper is organised as follows: in section 2, a brief presentation of the analyses put forth on the application domain of *-bile*, together with a discussion of their validity, will be proposed. Section 3 will deal with the *Aktionsart* of some of the verbs that admit *-bile* suffixation, in particular ObjExp verbs. In section 4 some conclusions are drawn.

2. THE APPLICATION DOMAIN OF THE SUFFIX *-BILE*

Adjectives such as *scaricabile* 'unloadable', *invidiabile* 'enviable', *trasportabile* 'transportable', whose meanings are roughly "that can be unloaded / envied / moved" are obtained by attaching the suffix *-bile* to transitive verbs. Since the majority of these adjectives are formed on transitive verbs, the application domain of the suffix was expressed in terms of transitivity, as in (1)[4]:

(1) $[[\quad]_{V_{trans}} \quad bile \,]_A$ (Scalise 1983)

A more narrow definition of the verbal bases involved in this process was set up using the theta roles verbs assign to their arguments. Roeper (1987) proposed (for English *-able* adjectives) a restriction based on the matching of the theta grids of both the suffix and the verb, as in (2):

(2) $[[\quad]_{V\,(Ag,\,Th)} \quad bile_{(Ag,\,Th)} \,]_A$

while De Miguel (1986) suggested (for Spanish) that it is sufficient for a verb to assign *theme* role to one of its argument to be good for the formation of a *-ble* adjective.

Scalise's and Roeper's ways of defining the kind of verbs that allow *-bile* attachment were intended to exclude intransitive verbs as bases for the suffix. In this way, in fact, the ungrammaticality of forms like **venibile* 'comeable' and **sorridibile* 'smileable' are explained.

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[3] The starred *-bile* forms used throughout the paper are exemplars taken from a hand-made list I constructed on (a list of) ObjExp psych-verbs. All the forms in my list not found in the Treccani online Dictionary and in the DISC (=Dizionario Italiano Sabatini-Coletti 2007) have been checked on the ItWak corpus, searchable through the SketchEngine at the following address: <https://the.sketchengine.co.uk>.

[4] Scalise's model adopted the generative approach to morphology put forth by Aronoff (1976).

De Miguel proposal, instead, allowed the formation of adjectives also from intransitives, provided that they were unaccusatives.

The three proposals, however, did not prove useful to adequately set out the application domain of the suffix, at least with respect to Italian. In Italian, actually, the three restrictions do not work correctly.

The restriction in (1), in fact, is simultaneously too broad and too narrow. Though holding for the majority of the verbs admitting *bile* suffixation, there are transitive verbs that do not seem to be suitable bases for the derivation, as is the case, for example, of *incontrare* 'to meet' and *urtare* 'to bump into', whose corresponding -*bile* adjectives *incontrabile* and *urtabile* are not attested as vocabulary entries[5] though they can be found in small numbers in corpora of written Italian[6]. Besides, the 'transitive verb' restriction is too narrow because -*bile* adjectives from intransitive verbs such as, for example, *franabile* from *franare* 'to slide down' and *sciabile* from *sciare*[7] 'to ski' are perfectly acceptable and also attested in dictionaries, even though derivatives from intransitive verbs are just a few.

As for the restriction in (2), its inadequacy comes either from the reason just seen, namely that intransitive verbs too can form *bile* adjectives, and also from the fact that there are -*bile* adjectives constructed on verbs that do not have an (Ag, Th) argument structure (e.g. the Subject Experiencer psychological verbs like *temere* 'to fear', which forms *temibile* lit. 'fear-able').

The 'theme restriction', in turn, crashes into the impossibility of forms like *arrivabile lit. 'arrive+able', *partibile lit. 'leave+able', *moribile lit. 'die+able', obtained from verbs whose sole argument is assigned *theme* theta-role.

2.1. *A different definition of the application domain*

In the attempt to apply the *theme* restriction proposed by De Miguel (1986) to Italian, Bisetto & Moschin (2012) have observed that while this way to define the domain of application of the suffix -*bile* functions with (agentive)

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[5] The dictionaries used to test the forms are the Treccani online and the DISC.

[6] The ItWaC corpus numbers 50 occurrences of *incontrabile* while there are 125 in the ItTenTen corpus. As for *urtabile*, I only found one occurrence as a noun (*tutto l'urtabile* 'all that is clash-able') in ItTenTen. As an anonymous reviewer points out to me, *urtabile* can, yet, be found in the internet.

[7] An anonymous reviewer suggests that *sciabile* could be constructed on the noun *sci* rather than on the verb, as it is the case for *carrozzabile* lit. 'open to vehicles', *ciclabile* 'cycling' and *camionabile* 'truck+able', since all the derivatives are constructed on nouns denoting means of transportation. This is, actually, a possible analysis, though *carrozza*, *ciclo* and *camion* do not have, like *sci*, corresponding verbs. The issue deserves more investigation.

transitive verbs (cf. 3a), the restriction does not fully work with unaccusative verbs, since some of them reject the suffix (cf. 3b-b'):

(3) a. *programmare*   *programmabile*
         'to programme'   'programmable'
         controllare   *controllabile*
         'to check'   'checkable'
         percorrere   *percorribile*
         'to go along'   'viable'
     b. *franare*   *franabile*
         'to slide down'   'liable to slide'
         evaporare   *evaporabile*
         'to evaporate'   'evaporable'
         fermentare   *fermentabile*
         'to ferment'   'fermentable'
     b' *scoppiare*   **scoppiabile*
         'to blow'   'blow+able'
         partire   **partibile*
         'to leave'   'leave+able'
         scappare   **scappabile*
         'to run off'   'run off+able'
         confluire   **confluibile*
         'to converge'   'converge+able'

So, they tried to pursue a different path, looking at the aspectual properties of the relevant verbs. They observed that the difference in the possibility to form *-bile* adjectives rests on the different aspectual type verbs belong to. Unaccusatives of the (3b') type are achievement verbs (in the Vendlerian sense; cf. Vendler, 1957), while the verbs in (3b) do not belong to this same aspectual class.

But what about achievement verbs like *incontrare*, *urtare*, *raggiungere*, *riconoscere* that are transitive? A look at verbs like those in (4) allows us to observe that the 'non-achievement restriction' seems still to hold: *-bile* adjectives from verbs like *incontrare*, *incrociare* and *scorgere* that are achievements are not fully convincing:

(4) *incontrare*   ?*incontrabile*
     'to meet'   'meet+able'
     urtare   **urtabile*
     'to bump into'   'bump+able into'

scorgere	**scorgibile*[8]
'to glimpse'	'glimpse+able'

There are, however, other verbs in the class that do admit -*bile* derivation:

(5) *raggiungere*   *raggiungibile*
     'to reach'   'reachable'
     riconoscere   *riconoscibile*
     'to recognise'   'recognisable'

Achievement verbs, indeed, can be divided into two subgroups, the subgroups Bertinetto (1988: 32) called transformative and non-transformative. The verbs in (5) belong to the transformative class and are telic while those in (4) are non-transformative (and non-telic)[9]. The former imply a path to attain the *telos*; in the latter a path is not present.

This distinction between transformative / culminating achievements and non-transformative / non-culminating ones (let us call them weak and strong achievements respectively) seems to put weak achievements closer to the class of verbs[10] admitting -*bile* adjectivisation, somehow spacing them out of the achievement class[11].

So far, then, the domain of the suffix -*bile* seems to be rather consistently defined, though negatively. It is in fact composed of verbs that are not achievements or strong achievements, if the 'strong' property is relevant.

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[8] An anonymous reviewer points out that *scorgibile* can be found in the *Grande dizionario della lingua italiana* (GRADIT). In the ItTenTen corpus, however, this derivative has a single occurrence and it is absent in the ItWaC corpus.

[9] The distinction is also known in the literature as differentiating achievements in the class of culminating verbs vs. the non-culminating one (see e.g. Binnik, 1991; Pustejovsky, 1991; Rothstein, 2005).

[10] It is rather obvious that this class is that of accomplishments. However, I will not discuss the issue here.

[11] The fact that verbs like *riconoscere* 'recognise' are slightly different from other achievements can be picked up in an example from a paper by Piñón (1997), where the author presents "Achievements in an Event Semantics". Progressivity is the issue Piñón discusses by means of the following examples (Piñón, ex. (6)):
    a. Rebecca was reaching the summit when it began to rain.
    b. # Anita was recognizing Peter when I walked in.
    c. Astrid was winning the race when we arrived.
    d. Are you finding everything okay?
    e. We visited the wounded soldier, who was dying.
As is clear, *recognize* does not admit the progressive form, thus manifesting its difference from the other achievements in the example.

The following restriction on the application domain of the suffix can thus be proposed:

(6) Restriction on -*bile* domain of application
      The -*bile* suffix cannot be applied to (strong) achievement verbs.

How do psych-verbs fit in with this restriction? Can the restriction in (6) be applied to ObjExp verbs and account for the well-formedness of *irritabile* vs. the unacceptable **divertibile*[12]?

The next section will deal with this issue, starting from (some of the) analyses of psych-verbs concerned with the actional nature of these verbs.

3. THE *AKTIONSART* OF PSYCHOLOGICAL VERBS

Psych-verbs like *worry*, *frighten*, *concern*, *interest*, have been traditionally considered as expressing a state. Since Dowty (1991) yet, it has been recognised[13] that ObjEsp verbs can have both a stative and an eventive interpretation.

Van Voorst (1992: 66), for example, claims that psychological verbs are achievements. He asserts that this conclusion can be drawn on the basis of verbal aspect, when it is intended as a notion referring to the internal structure of events. Constructions containing psych-verbs are in fact to be analysed as indicating processes that take place, even though not implying processes that lead up to culmination points (Van Voorst, 1992: 90). This is so independently of the fact that psych-verbs can be grouped into four classes[14] on the basis of volitionality and thematic role assignment (to the subject or object argument).

Van Voorst's analysis does not take into account whether or not psych-verbs can be grouped into subclasses; his main goal is to demonstrate, on the basis of the usual tests offered in the specific literature, that psych-verbs do not share the typical properties state and accomplishment verbs have. But, if subgrouping is impossible, the restriction in (6) is untenable. The restriction, in fact, makes the prediction that only part of achievement verbs, the weak ones,

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[12] This adjective can be found in an internet search (as an anonymous reviewer pointed out), but it does not occur in the two corpora I used.

[13] Many are the works on this subject, such as (the seminal work of) Belletti & Rizzi (1988), Grimshaw (1990), Van Voorst (1992), Pesetsky (1995), Arad (1998), Reinhart (2002), Meinschaeffer (2003), Bennis (2004), Marín & McNally (2011) to cite just a few.

[14] The four classes of Van Voorst are the following:
      – Class I: action verbs in psychological use (*struck*, *hit*);
      – Class II: psychological verbs with an intentional subject (*amuse*, *upset*, *irritate*);
      – Class III: the same psychological verbs (*amuse*, *upset*, *irritate*) have a non-intentional subject;
      – Class IV: Subj(ect) Exp(erience) verbs.

are allowed to form -*bile* derivatives. The question is then on its applicability to ObjExp verbs[15] too.

The existence of a restriction of some sort actually seems to be borne out by the fact that only part of psych-verbs adjectivise (cf. 7a, b):

(7) a. *atterrire*   **atterribile*
       'to terrify'   'terrify+able'
       disgustare   **disgustabile*
       'to disgust'   'disgust+able'
       divertire   **divertibile*
       'to amuse'   'amuse+able'
       estasiare   **estasiabile*
       'to delight'   'delight+able'
   b. *demonizzare*   *demonizzabile*
       'to demonise'   'demonise+able'
       deprimere   *deprimibile*
       'to depress'   'depress+able'
       impensierire   *impensieribile*
       'to worry'   'worry+able'
       incoraggiare   *incoraggiabile*
       'to encourage'   'encourage+able'
       irritare   *irritabile*
       'to irritate'   'irritable'

The question in now: What is the dividing line between the two groups? Which is the property that makes the verbs in (7b) suitable to -*bile* suffixation while excluding verbs like those in (7a)? The classification of ObjExp verbs presented in Arad (1998) seems to offer an answer to this question.

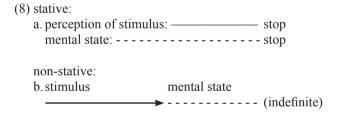## 3.1. *A different perspective on psych-verbs*

In Arad (1998) paper, ObjExp verbs are analysed with an aim different from that of Van Voorst (1992), namely their syntactic structure, not their

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[15] Van Voorst claims that both SubjExp and ObjExp verbs belong to the achievement class. Italian psych-verbs of the former type (Class IV in Van Voorst's classification – cf. fn. 14) will not be discussed here. Suffice to say that, if it is so, what I proposed in the text, viz. that achievement verbs (or, at least, strong achievements) cannot form adjectives in -*bile*, should not hold. Italian SubjExp verbs like *ammirare* 'to admire', *apprezzare* 'to appreciate', *desiderare* 'to desire', *detestare* 'to detest', *temere* 'to fear' have a corresponding -*bile* adjective (*ammirabile*, *apprezzabile*, *desiderabile*, *detestabile*, *temibile*). However, I leave this problem for future research.

aspectual structure. ObjExp psych-verbs are thus distinguished according to two properties (Arad, 1998: 3): (a) the presence of an agent which deliberately does something in order to bring about a mental state in the experiencer, (b) the existence of a change of mental state in the experiencer. These two properties bring about three different interpretations of ObjExps:

a) an agentive reading where there are both an agent, which acts intentionally, and a change of state in the experiencer;
b) an eventive reading implying that someone or something unintentionally caused a change of mental state in the experiencer;
c) a stative reading (corresponding to the typical "psych" reading) where neither an agent nor any change of mental state in the object are present[16].

To illustrate the difference between the subgroups, called stative and non-stative, Arad makes use of the representation in (8) that she attributes to Pyllkänen (1997):

(8) stative:
   a. perception of stimulus: ——————— stop
     mental state: - - - - - - - - - - - - - - - - - - stop

   non-stative:
   b. stimulus   mental state
     ———————⟶ - - - - - - - - - - - (indefinite)

She explains that in the stative situation (8a) the rising of the mental state is triggered as far as the stimulus is sensed and vanishes when the stimulus disappears. The two (presence of the stimulus and mental state) then coexist. In the non-stative situation (8b), when the verbs have an agent or event interpretation[17], the mental state comes into being as a consequence of the stimulus. As soon as the mental state is achieved the agent/causer "have done their job" (Arad, 1998: 5) and the mental state holds independently.

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[16] Arad shares Pyllkänen's (1997) opinion on the nature of some psych-verbs like *disgust* and *concern*. Such verbs are classed as stative because in Finnish their object experiencer is assigned partitive case. If the verb introduces a change of state – and thus it is not stative – the object receives accusative case.

[17] The stimulus in psych-verbs of this type is also called 'effector' (cf. Holisky, 1987, and Van Valin & Wilkins, 1996). The verbs that can have both an agentive and a non-agentive subject are called 'labile' (cf. Verhoeven 2010: 215).

It is this difference in the rising of the mental state that allows for the classification of ObjExp verbs along the lines proposed in section 2. All ObjExp verbs can be considered as achievements: the state of being *depresso* 'depressed' / *irritato* 'annoyed' or *disgustato* 'disgusted' / *estasiato* 'delighted' is a consequence of a caused stimulus or perception of a stimulus respectively; these mental states do not exist before (the perception of) a stimulus comes into being, so the verbs can be viewed as achievements.

Moreover, the differentiation in (8) allows to (sub)classify them as strong or weak achievements: those corresponding to the (8a) situation, represented by verbs like *disgustare*, *atterrire*, *divertire* in (7a), are strong achievements in that the emergence of the mental state is instantaneous; it arises concomitantly with the perception of the stimulus and it lasts all along the length of the stimulus. These verbs can be brought closer to the non-psych achievements of the *incontrare* type in (4) above.

The verbs in (7b), *incoraggiare*, *irritare*, *deprimere*, belong to the subgroup of weak achievements: the stimulus acts somehow like a path that precedes the emergence of the mental state that, once achieved, can last indefinitely. Consequently these psych-verbs can be assimilated to the weak achievements in (5) that admit *-bile* derivation.

The restriction in (6) is thus confirmed: the domain of application of the Italian suffix *-bile* is restricted to verbs that, from the point of view of their actional properties, do not belong to the achievement class (or the strong achievement class when the distinction strong vs. weak achievement is relevant).

4. CONCLUSION

The analysis of psych-verbs from the point of view of their actionality has shown that this feature is the most relevant one to set out the application domain of the adjective forming suffix *bile* (this is at least the case for Italian).

Psych-verbs can be classed as achievements and among them two subgroups can be individuated: strong and weak achievements.

To the group of strong achievements belong verbs indicating "non culminating" events; ObjExp verbs of this type are those provoking the trigger of a mental state concomitant with the perception and lasting of a stimulus. These verbs are not part of the domain of the suffix *-bile*.

Weak achievements, on the contrary, constitute the domain of application of the suffix just for being "less achievements" than the others. As for psychological verbs, the rise of the mental state comes after the stimulus has

taken place; it is not concomitant with it. Moreover, the lasting of the state is indefinite.

Verbs of this weak type seem to be closer to accomplishments than to achievements, as is the case for transitive and intransitive non-psychological verbs.

The restriction defining the domain of application of the suffix *bile* proposed in (6) above is thus also obeyed by ObjExp verbs.

Things are not that simple, however. What still remains to do is to restate the Restriction in (6) in a positive way. To achieve this goal, the closeness of weak achievement verbs to accomplishment verbs is somehow to be demonstrated. More importantly, what remains to be demonstrated is that the (preferred) domain of application of the suffix *-bile* is formed by accomplishment verbs. This, however, is left to future research.

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