

Impersonal *si* constructions. How semantics determines agreement

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1. Introduction

Impersonal *si* introduces an unspecified, generic subject in an utterance, as in (1):

- (1) Si mangia troppo
 si eats-3rd sg too-much
 'People eat too much'

Impersonal *si* constructions (ISCs) with transitive verbs display peculiar agreement patterns: The verb may or may not show agreement with the direct object, which in turn bears Nominative or Accusative case, as shown in (2) and (3):

- (2) In Italia si mangiano gli spaghetti
 in Italy si eat-3rd pl the spaghetti-nom masc pl
 'In Italy people eat spaghetti'
- (3) In Italia si mangia spaghetti
 in Italy si eats-3rd sg spaghetti-acc masc pl
 'In Italy people eat spaghetti'

The agreement patterns of transitive ISCs have often been considered a 'secondary' phenomenon, derived from *si*'s special property of being able to absorb *theta*-role or Case. In this paper, I provide arguments for the hypothesis that the agreement alternation exemplified in (2) and (3) reflects an aspectual difference between the two clauses. I show that an ISC with verb-object agreement, as the one in (2), is not semantically equivalent to an ISC without verb-object agreement, as the one in (3), contrary to what is commonly assumed (see Belletti 1982, Burzio 1986, Cinque 1988, and Dobrovie-Sorin 1998 among others). Specifically, I show that ISCs with verb-object agreement encode accomplishments, while an ISC without verb-object agreement encode activities (Vendler 1967).

The peculiar agreement patterns of transitive ISCs reflect this semantic difference, and are not imputable to any special property of *si*.

1.1. Impersonal *si* with transitive verbs

In the present tense, ISCs with transitive verbs show the two main agreement patterns shown in (2) and (3). Within the first pattern, exemplified in (2) and here repeated as (4), the verb agrees with the DP object:

- (4) In Italia *si* mangiano gli spaghetti
in Italy *si* eat-3rd pl the spaghetti-masc pl
'In Italy people eat spaghetti'

In (4), the object *gli spaghetti* is an internal argument. This can be shown by substituting for it the particle *ne*, which can only substitute internal arguments (Belletti & Rizzi 1981):

- (5) In Italia *se ne* mangiano
in Italy *si* of-them eat-3rd pl
'In Italy people eat them'¹

The second agreement pattern, exemplified in (3) and here repeated as (6), involves an object which does not agree with the verb. The verb ending is the 3rd singular default ending:

- (6) In Italia *si* mangia spaghetti
in Italy *si* eats-3rd sg spaghetti-masc pl
'In Italy people eat spaghetti'

Also in (6), the object *spaghetti* is an internal argument, as shown by the fact that it can be substituted for by *ne*:

- (7) In Italia *se ne* mangia
in Italy *di* of-them eats-3rd sg
'In Italy people eat them'

Moreover, in (4), *gli spaghetti* carries Nominative case, while in (6) it carries Accusative. This is shown in (8) and (9) respectively, where the DP object is replaced by a personal pronoun. Personal pronouns in Italian are morphologically marked for Case, and therefore help detecting the Case of the DPs in question.

- (8) In Italia *essi* / **li* *si* mangiano
in Italy they-nom them-acc *si* eat
'In Italy people eat them'

¹ *Se* is an allomorph of *si*, which occurs when *si* precedes other clitics.

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- (9) In Italia *essi/ li si mangia
in Italy they-nom them-acc si eats-3rd sg
'In Italy people eat them'

To summarize: ISCs with verb-object (V-O) agreement exhibit a Nominative object that agrees with the verb. ISCs without V-O agreement exhibit an Accusative object which does not agree with the verb. In this case, the verb also shows a 3rd singular inflection.

1.2. ISCs with transitive verbs in the past tense

The agreement patterns of the ISCs in the past tense resemble those of the present tense. The past tense of (2) is (10):

- (10) Si sono mangiati gli spaghetti
si are-3rd pl eaten-pp masc pl the spaghetti-masc pl
'People/we have eaten spaghetti'²

In (10), both the auxiliary and the past participle agree with the object.
The past tense of (3) is (11):

- (11) In Italia si è mangiato spaghetti (fino a un anno fa)
In Italy si is-3rd sg eaten-pp masc sg spaghetti (until last year)
'In Italy people have eaten spaghetti until last year'

In (11), neither the auxiliary nor the past participle agree with the object. ISCs with and without verb-object agreement have always been assumed to be semantically equivalent. In what follows, I show that this is not the case.

2. Inner aspect and ISCs

In 1967, Zeno Vendler identified four distinct categories (aspectual classes) of verbs: *states* (know, believe, ...), *activities* (run, walk, ...), *accomplishments* (paint a picture, make a chair, ...), and *achievements* (recognize, spot, ...). States have no change during the time span over which they are true; activities are events with internal change and duration, but no necessary temporal endpoint; accomplishments are events with duration and an obligatory temporal endpoint; achievements have no duration and instantaneous endpoint (cf. Pustejovsky 1988, Tenny & Pustejovsky 2000). Vendler's classification is referred to as the verb *Aktionsart*.

Under the view that verbs may be classified according to their *Aktionsart*, Dowty (1979) proposed a set of tests which help us identify which aspectual class a verb belongs to. In what follows, I repeat Dowty's tests for accomplishments/activities and show that they

² When the event is temporally bound, an inclusive interpretation arises. The reader is referred to D'Alessandro (2004) for an analysis of this phenomenon.

trace a clear-cut distinction between ISCs with verb-object agreement (accomplishments) and ISCs without verb-object agreement (activities).

2.1. Accomplishments and activities

Dowty (1979) proposes a number of tests with the aim of identifying the aspectual class that verbs belong to. I repeat here the tests that are relevant for the present analysis:

(12) **Test 1:** 'Whereas accomplishment verbs take adverbial prepositional phrases with *in* but only very marginally take adverbials with *for*, activity verbs allow only for *for*-phrases'
[from Dowty (1979:6)]

If one inserts the adverbial phrases *in un'ora* ('in an hour') and *per un'ora* ('for an hour') in the examples in (10) and (11), their difference emerges clearly³:

(13) Si sono mangiati gli spaghetti in un'ora
si are-3rd pl eaten-pp masc pl the spaghetti in one hour
'Spaghetti have been eaten in one hour'

(14) ?Si sono mangiati gli spaghetti per un'ora
si are-3rd pl eaten-pp masc pl the spaghetti per one hour
'Spaghetti have been eaten for one hour'

(15) Si è mangiato spaghetti per un'ora
si is-3rd sg eaten-pp masc sg spaghetti for an hour
'Some people have eaten spaghetti for an hour'

(16) *Si è mangiato spaghetti in un'ora
si is-3rd sg eaten-pp masc sg spaghetti in an hour
'Some people have eaten spaghetti in an hour'

According to the *in an hour/for an hour* test, (10) expresses an accomplishment, while (11) expresses an activity. Let us now turn to another test:

(17) **Test 2:** 'Only accomplishment verbs can normally occur as complement of *finish*
[from Dowty (1979:57)]

If we check our sentences against (17), we see that only (10) may occur as a complement of *finire* ('finish'):

(18) Si sono finiti di mangiare gli spaghetti
si are-3rd pl finished-pp masc pl of eat the spaghetti
'People have finished to eat spaghetti'

³ In these tests I use the past tense, in which the difference between activities and accomplishments is more straightforward.

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- (19) *Si è finito di mangiare spaghetti
si is-3rd sg finished-pp masc sg of eat spaghetti
'People have finished to eat spaghetti'

The grammatical alternative for (19) is (20). *Smettere* ('to quit') is in fact a verb which usually selects activities. Some examples are *smettere di fumare* ('quit smoking'), and *smettere di studiare* ('quit studying').

- (20) Si è smesso di mangiare spaghetti
si is-3rd ps quitted of eat spaghetti
'People have quitted eating spaghetti'

Also the examples in (18)-(20) show that ISCs with V-O agreement encode accomplishments while ISCs without V-O agreement encode activities. Accomplishments and activities show also different entailment relations:

(21) **Test 3:** 'The adverb *almost* has different effects on activities and accomplishments: "*almost-activity*" entails that the event described by the verb did NOT take place; "*almost-accomplishment*" has two meanings:

- The Agent had the intention of performing the activity but he did not do it;
- The Agent began to perform the activity but did not complete it.

Let us consider the ISC with verb-object agreement in (22):

- (22) Si sono quasi mangiati gli spaghetti
si are-3rd pl almost eaten-pp masc pl the spaghetti-masc pl
'Somebody has almost eaten spaghetti'

- (22) may have two entailments:
- *Spaghetti* have almost been eaten up
- Somebody has almost started eating *spaghetti*

The former possibility is indeed not so straightforward. The double entailment is more striking with a different word order, as in (23):

- (23) Gli spaghetti si sono quasi mangiati
the spaghetti-masc pl si are-3rd pl almost eaten-pp masc pl
'Somebody has almost eaten spaghetti'

In constructions without V-O agreement, only one entailment is available: (24) only entails that had the intention of eating spaghetti but did not do it:

- (24) Si è quasi mangiato spaghetti
si is-3rd sg almost eaten-pp masc sg spaghetti
'People have almost eaten spaghetti'

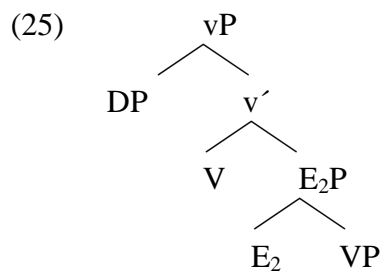
The three tests just presented show that ISCs with verb-object agreement encode accomplishments, while ISCs without verb-object agreement encode activities. Before going into the syntactic analysis of the agreement patterns of these constructions, a brief note about the presence-absence of the determiner is in order.

In ISCs with verb-object agreement, the presence of a definite article is required. This is not the case for ISCs without verb-object agreement, where a bare noun is required. In fact, it has been observed that the presence of a DP object correlates with telicity, and hence with accomplishments, whereas bare nouns correlate with activities (see Zagona 1996, de Miguel 1992, Nishida 1994, Krifka 1991, Ramchand 1997 and Torrego 1998 among others). Therefore, a strict correlation exists between the absence of the determiner and the activity reading.

3. Translating *Aktionsart* into syntax: inner aspect

One of the achievements of recent syntactic theory has been the understanding that semantic structure is reflected in the syntax (Borer 1994, Travis 1994, Kratzer 1996, Marantz 1997, and Ramchand 1997 among others). According to this line of reasoning, it is not the lexical semantics of a verb that determines its syntax, but rather the functional-aspectual structure in which the verb appears that determines its semantics. If a verb alternates between an activity and an accomplishment reading, thus, the different interpretations result from the different syntactic structures in which the verb appears. What varies among structures is the number and the nature of functional projections, or 'inner aspectual' projections. I adopt the term 'inner aspect' to refer to the *Aktionsart* encoded by such functional heads.

Following Kempchinsky (2000), I assume the structure in (25) for transitive accomplishments. The E_2 head is the RESULT/CHANGE OF STATE head, i.e. the head which encodes telicity, and the v head encodes DURATION and assigns Accusative, and is common to both activities and accomplishments⁴:



Building on Kempchinsky, I propose the following:

(26) *Si* is merged in the specifier of the E_2P when this is present.

⁴ Kempchinsky actually postulates the existence of an E_1 head encoding PROCESS. For my purposes, it is not necessary to distinguish however between an E_1 and a v . I therefore slightly modify Kempchinsky's proposal by adopting a structure where the E_1P and the vP are coincident.

The E₂P is available for those DPs that are not completely referential, and which rely on the sub-event structure to obtain their full reference. A *non*-completely referential argument is strictly dependent on the event structure for its interpretation, and therefore it can be merged in the specifier of an event projection, thus establishing a link with the event structure of the VP. This hypothesis also finds independent evidence in the process of identification of *si*'s reference set. D'Alessandro (2003) shows that *si* identifies different groups of referents depending on the aspectual specification of the sentence it appears in.

3.1. Impersonal and aspectual *si* in the specifier of E₂P: *ci si*

So far, I have shown that transitive ISCs with verb-object agreement are accomplishments and ISCs without verb-object agreement are activities. In accomplishment structures, *si* is merged in the specifier of the E₂P, which encodes telicity. In activity structures, which lack the E₂ projection, *si* is merged in the specifier of vP. Independent evidence for the merging site of *si* in accomplishment constructions is offered by the so-called *ci si* disambiguation in Italian.

According to Zagona (1996), the so-called aspectual *se/si* expresses a subject/object relation at the culmination of the event. This aspectual *si* is only licensed when the event is telic. Zagona does not commit herself as to the merging site of *se*: she assumes that at some point aspectual *se* (= *si*) cliticizes on the verb. I wish to propose that both aspectual and impersonal *se* are merged in the specifier of the E₂P.

Zagona's analysis is a good test for my proposal about verb-object agreement and no verb-object agreement in ISC. In particular, if my hypothesis holds, aspectual *si* should not be licensed in ISCs without verb-object agreement, which encode activities. This hypothesis is borne out, as (27) shows:

- (27) *Ci si è mangiato spaghetti
 si-asp si-imp is-3rd sg eaten-pp masc sg spaghetti-masc pl
 'People/somebody has eaten (up) spaghetti'

Aspectual *si* is instead licensed in ISCs with verb-object agreement, which encode accomplishments:

- (28) Ci si sono mangiati gli spaghetti
 si-asp si-imp are-3rd pl eaten-pp masc pl the spaghetti
 'People/somebody have eaten (up) spaghetti'

(27) and (28) corroborate the hypothesis that ISCs with verb-object agreement and ISCs without verb-object agreement are different in terms of their sub-event structure. The fact that (28) licenses an aspectual *si* shows once again that (28) is an accomplishment.

About the merging site of impersonal and aspectual *si*, I propose that they are merged in the same position, i.e. the specifier of the telicity projection, E₂P. This sounds like a contradiction in terms, given that both *si*'s are present in (28). The forms used in (28) are however *ci* and *si* (*ci si* disambiguation). Partially following Cinque (1995), I propose

that the disambiguation is due to a morphological constraint imposing that only one instance of a lexical item may be present in a clitic cluster. Hence, in (28), one of the two *si*'s has to be transformed into something else. This 'something else' is the dative form of the 1st person plural pronoun *noi*. This hypothesis is supported by the fact that in particular tense-aspect configurations, ISCs receive an inclusive interpretation, i.e. an interpretation according to which the speaker is included among the referents of the impersonal pronoun. The question remains open about the exact merging site of *ci* (=aspectual *si*): If impersonal *si* is merged in the specifier of E_2 , where is *ci* merged? When impersonal *si* is present in the clause, aspectual *si* is merged in the outer specifier of the same E_2 projection. The presence of two *si*'s in the same projection causes the disambiguation in the clitic cluster as proposed by Cinque (1995).

4. *Si* in accomplishment and activity structures

4.1. Theoretical assumptions

For the derivation of ISCs, I follow the model proposed in Chomsky (1995, 1998, 1999), according to which syntactic expressions must be legible at the interface between the syntactic system and the other systems. All the features that wouldn't be interpretable by the other systems need to be eliminated before the interface levels are reached. Chomsky (1999) proposes a mechanism of elimination of uninterpretable features by means of valuation –with consequent elimination- of uninterpretable/unvalued features. This valuation takes place when a *Match* relation between *phi*-features on lexical items is established. Such a relation is established between a *probe*, (an 'attractor' in terms of Chomsky 1995) and a *goal* ('attracted'), as soon as lexical items enter the derivation (i.e. they are *merged*). The *Match* relation triggers an *Agree* relation; under *Agree*, unvalued features can be valued and deleted from narrow syntax. According to Chomsky (1998), the *domain* of a probe is its c-command domain. *Agree* takes place in this domain. Chomsky (1999) outlines a strictly derivational model for syntactic structures. The deletion of uninterpretable features that have been valued through *Agree* only takes place at the end of a *phase*. According to Chomsky, the derivation of syntactic expressions proceeds by phases, which are 'natural syntactic objects': they are reconstruction sites, and as such they are complete interpretational units, and have a 'degree of phonetic independence' (from Chomsky 1999:9).

I will adopt Chomsky's model unless otherwise specified.

4.1. *Si* in the specifier of E_2P

In the previous sections, I presented support for the following hypotheses:

- ISCs with and without verb-object agreement encode different events: ISCs with V-O agreement encode accomplishments, and ISCs without V-O agreement encode activities.
- The sub-event structure of ISCs with V-O agreement includes a telicity head, and impersonal *si* is merged in its specifier.

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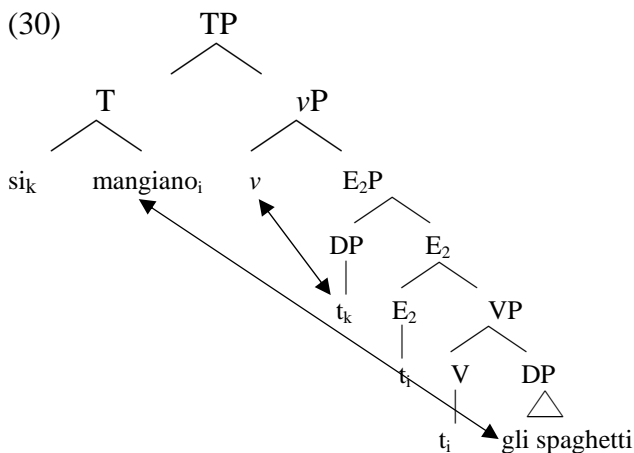
- The sub-event structure of ISCs without V-O agreement does not include a telicity head, and therefore impersonal *si* is merged in the specifier of ν P.

Merging impersonal *si* in the specifier of E_2 P creates an intervention effect in the assignment of Accusative to the object. In other words, the object may receive no Accusative case because *si* performs an intervention effect and receives Accusative case. Thus, the object stays without Case until the T head is merged. Then, the object receives Nominative case. In order to have a clearer view of this phenomenon, let us consider once again the ISC with verb-object agreement in (4), here repeated in (29):

(29) In Italia *si* mangiano gli spaghetti
 in Italy *si* eat-3rd pl the spaghetti-masc pl
 ‘In Italy people eat spaghetti’

The derivation of (29) goes as follows (see also the tree diagram in (30)):

- The DP object *gli spaghetti* is merged with the V head, and there it receives the internal *theta*-role. It needs to have its Case features valued.
- The E_2 head is merged with the VP.
- Impersonal *si* is merged in the specifier of E_2 P.
- ν is merged with the E_2 P.
- ν needs to have its *phi*-features valued, and therefore it ‘looks down’ for a DP with which it Matches.
- ν Matches with *si*, which is referential, and therefore values its *phi*-features and receives Accusative case.
- The DP object stays without Case.
- T is merged.
- Right after the merging of T, *si* cliticizes on it.
- T enters a Match + Agree relation with the DP object, and values the Case feature on the object. This triggers the valuation of the *phi*-features on T, which agrees with the object.
- *Si* satisfies the EPP on T.



It is worth observing that *si* does not perform any defective intervention during Nominative assignment (Chomsky 1999), as it cliticizes on T as soon as T is merged. In other words, *si* is not in its original E₂ position when Nominative is assigned, and cannot defectively intervene between T and the DP object.

According to the present analysis, the DP object stays without Case until the CP phase is concluded. If *v* were a phase, the fact that the DP object is without Case at the moment of Spell-Out would cause the derivation to crash. This problem arises every time there is a construction with verb-object agreement, for example in Italian psych verb constructions of the *piacere* ('appeal') type (Belletti & Rizzi 1988) or in Icelandic quirky dative constructions (Sigurðsson 1992). I do not wish to postulate, however, the existence of a defective *v* head which is sensitive to the presence of *si*. This would require a 'mutual visibility' of lexical items and functional heads in the numeration (or in the lexicon, before the numeration is selected), a result not really desirable. For the present purposes, I just assume that *v*P is not a phase in ISCs.

4.2. *Si* in the specifier of *v*

For the sub-event structure of activities, I depart from Kempchinsky's (2002) proposal according to which if a verb may be in turn an accomplishment and activity, its structure has to encode telicity even when an activity is instantiated. This hypothesis contradicts the basic idea of different structures encoding different aspectual classes. I depart from Kempchinsky's analysis by saying that no E₂ is present on activity predicates. While the nature of the object may affect the aspectual classification of a VP, tense usually does not.

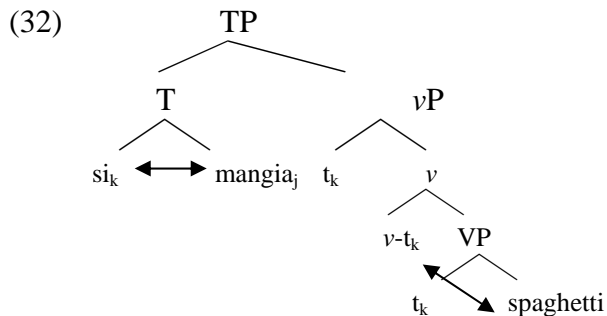
As stated above, the PROCESS sub-event is encoded on the *v* head. In ISCs without verb-object agreement *si* is merged in the specifier of *v*.

Let us consider the sentence in (3), here repeated as (31):

- (31) In Italia *si* mangia spaghetti
in Italy *si* eats-3rd sg spaghetti-acc masc pl
'In Italy people eat spaghetti'

(31) encodes an activity, hence its structure lacks the E₂ head. Its derivation runs as follows (see also the tree diagram in (32)):

- The object *spaghetti* is merged with the verb.
- *v* is merged, and values the Case feature on the DP object.
- *Si* is merged in the specifier of *v* and gets the external *theta*-role.
- T is merged with the *v*P; *si* cliticizes on it, thus also checking the EPP. As a result, the verb shows 3rd person singular default inflection.



5. Conclusions

Transitive ISCs alternate between two main agreement patterns: with verb-object agreement and without verb-object agreement. In this paper, I have shown that the different agreement patterns are not the result of optionality, as commonly assumed, but that ISCs with verb-object agreement encode accomplishments, while ISCs without verb-object encode activities.

Assuming that the event structure is reflected in the syntax, and that accomplishments have an extra functional projection which encodes telicity, I have shown that the two agreement patterns considered reflect the different eventual/syntactic structures involved.

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