

The morphosyntactic correlates of finiteness
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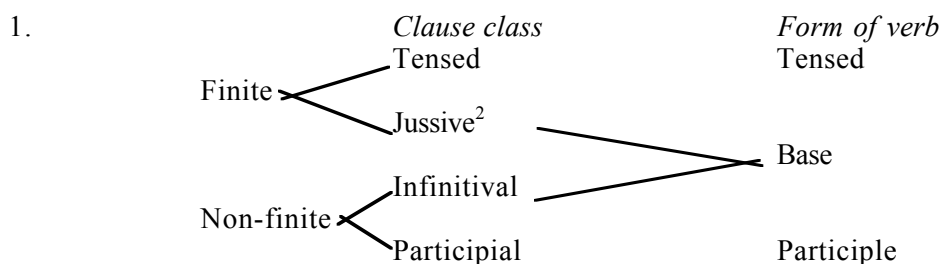
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Abstract

In this paper I question the traditional view of the notion ‘finiteness’. Rather than being a morphosyntactic feature, I argue that if anything it is a semantic category related to time, reference and definiteness. Furthermore I attempt to abandon the rather misleading labels of ‘finite’ and ‘non-finite’ verb forms by offering evidence from English, Romance and Japanese which reveal that verb forms may have morphological tense despite having no independent time reference. I propose a realisational theory of morphology in the spirit of Anderson (1992) and Stump (forthcoming) in which the shapes of verb forms are the expression of particular configurations of features at f-structure involving tense, aspect, modality and subordination. For example I show that *to*-infinitives like subjunctives and modal verbs are prototypical expressions of irrealis modality while a tensed form in an Italian perception verb complement may be used to unambiguously express imperfective aspect.

1.0 Introduction¹

‘Finiteness’ is traditionally defined as a property which relates to verb forms such that a *finite verb* is one that is ‘limited by properties of person, number and tense.’ Huddleston (1988:44). Huddleston, however, goes on to make a distinction between verb level and clause level notions of finiteness, and gives the following classification for English:



Lyons on the other hand considers tense to be a sentential category: ‘In any case, independently of the way in which tense is expressed in languages of various morphological types, considered from a semantic point of view, tense (in tensed languages) is always a sentential (or clausal) category.’ (1995:314).

From the perspective of English, non-finite verbal forms are assumed to be the infinitive, the gerund, the participles, while finite forms are those which inflect for tense (*walk* vs. *walked*) and person (*walk* vs. *walks*). Of undetermined category are thus the modal verbs, which do not inflect for person, and may not inflect for tense (see below) and the so-called subjunctive, which does not inflect for person and whilst it has morphological tense, does not in fact have referential tense.

2.0 The morphosyntactic correlates of finiteness

At this point, given the importance traditionally attached to finiteness of the terms tense and agreement, it is perhaps worth examining these concepts in more detail, rather than assuming that they are well-defined primitives of grammatical theory.

¹ This paper is based on issues arising from my PhD Thesis (Barron 1999), however its development into this paper is due in part to ESRC Research Grant No. R000238228.

² Jussives are of two kinds, imperative and non-imperative (occurring in subordinate clauses):

- a. Be careful (Imperative jussive)
- b. [It is essential] (that) they be present. (Non-imperative jussive)

Huddleston would therefore appear to argue that *be* in the above examples is a base form in a finite clause.

2.1 Finiteness as tense and agreement

Person and number agreement in English is only found on 3rd person singular present tense forms, unlike languages like Italian with rich agreement morphology. Its contribution therefore to the discussion of finiteness in English is often more covert than apparent. Any examination of tense (e.g. Palmer 1986) reveals that at best the relationship between tense and time is indirect. Tense is said to be the grammaticalization of time, or a deictic system which relates the time of a situation to the time of the utterance (Lyons 1995). This is apparent in the contrast between the following:

2. a. Clio is walking to the station.
- b. Clio was walking to the station.

(2a and b) are simple main clauses. The time of the event in (2a) is simultaneous or subsequent, and in (2b) prior, to the time of utterance. The present/past tense distinction on the verb *be* reflects this difference. In addition there is clearly person and number agreement on the verb. (3) illustrates that the infinitive form, *walk*, which does not express the tense contrast, has no relation to the time of utterance.

3. a. Clio hopes to walk to the station.
- b. Clio hoped to walk to the station.

The infinitive form *walk* has no person or number agreement either. In addition the infinitive verb form cannot be found as the sole verb in main clauses:

4. *Clio (to) walk to the station.

It is this kind of canonical relationship between tense and agreement which has led to the analysis of finiteness as described above and could be represented as follows:

5. a. [+ finite] = [+ Tense] [+ AGR]
- b. [- finite] = [- Tense] [- AGR]

2.1.1. The arguments against a binary distinction.

Evidence against a simple binary distinction between [+ finite] and [- finite] comes however from a number of sources³:

2.1.1.1. Languages without agreement features

The existence of languages like Japanese which do not have agreement features (and in some analyses have the verbal category aspect rather than tense), but which nonetheless are claimed to have a finite/non finite distinction. This casts doubt upon the requirement for [AGR] in any description of finiteness.⁴

2.1.1.2. Languages with agreeing 'non-finite' forms.

There are instances of so-called non finite forms, infinitives (Portuguese, Southern Italian), see Raposo (1987) and Ledgeway (1998a); gerunds and participles (Old Neopolitan) see Vincent (1997, 1998 and references therein) which inflect for person and number, and of infinitives which inflect for tense (eg. Latin *portare* vs. *portavisse*). These facts give us grounds for two further correlations:

6. [- finite] = [-Tense] [+AGR] (Portuguese)
- [- finite] = [+Tense] [-AGR] (Latin)

³ See also Koptjevsakaja-Tamm (1994) for a discussion of the problem of defining finiteness.

⁴ Unless one assumes that AGR is covert in such languages.

2.2 Finiteness as tense and modality

2.2.1. The modal verbs of English

The relationship between the English modal verbs and tense is notoriously complicated. Quirk and Greenbaum (1973), and all subsequent descriptions of English, note that modal verbs are excluded from non-finite clauses and yet it appears that modal verbs (which may not have deictic tense) may be found in clauses traditionally described as ‘finite’. So could we speculate that there is a relationship between finiteness and the presence/absence of modal verbs? The only modal verb which clearly expresses a past/non past distinction is *can/could*. Nonetheless, *could* also clearly has non-past uses (8), so is not unambiguously a past tense form:

7. I *could* speak French as a child, but since moving to England I’ve forgotten it all.
8. I *could* go tomorrow, if you want.

In addition, consider (9a) which describes habitual action in the past versus (9b) which describes potential/hypothetical action in the future.

9. a. I *would* go to the shops every Saturday when I was a teenager.
b. I *would* go to the shops every Saturday if I lived in Oxford Street.

The existence of morphological present/past pairs for the modal verbs *will/would*; *can/could*; *may/might*; *shall/should* has little to do with a present/past temporal distinction as noted by Coates (1983), Quirk et al (1985),⁵ Palmer (1986), Warner (1993), and Bybee (1995). Lyons notes “the grammatical categories of mood and tense are interdependent in all natural languages that have both categories; and mood is more widespread than tense throughout the languages of the world.” (1995:327) It is thus surprising, that except for a recent paper by Vincent, so little attention has been paid to the relationship between finiteness and modality. Fleishman (1995:519) notes the connection between imperfective aspect (particularly in the past tense) and irrealis modality due to the shared semantic feature of non-completion. Bybee (1995:505) notes that modal verbs ‘whether they express desire, obligation, necessity, intention or ability, have in common the semantic property that they do not imply the completion of the action or event expressed by the infinitive with which they occur.’ Traditional mood categories include indicative, subjunctive and imperative.

2.2.2. The subjunctive

The ‘subjunctive’ mood in English is realized by the use of the base form of the verb or the morphological past tense⁶:

10. If he **came** tomorrow, he could meet your sister.
11. The officer asked that the suspect **be** detained for questioning.

The use of morphological past tense in (10) clearly has nothing directly to do with past time, in the same way that the use of the modal verb *could* in the same sentence has nothing to do with past time, despite being a morphological past tense. The use of past tense as a secondary deictic device, where the notion of distal time is extended to express subjective distancing from commitment to a proposition is discussed in James (1982), Frawley (1992) and Lyons (1995). The subjunctive then is further evidence that there needs to be a division between morphological tense and referential or primary deictic tense.

⁵ Where they do appear to have a temporal distinction is in reported speech: (i) *I will go tomorrow*. (ii) *She said she would go tomorrow*. However, here the morphological form of *would* in (ii) is determined by *said* and is not independent.

⁶ The absence of distinct specific verbal inflections to signal these modal meanings is often cited as evidence that English does not have a syntactic category of ‘subjunctive’ mood. I shall therefore use the term ‘subjunctive’ in English to refer to the non-canonical use of base and past tense forms which carry the modal meaning.

Huddleston's schema in (1) does in part reflect this, by claiming that base forms of verbs may be found in both finite and non-finite clauses. His position is that clauses with morphological tense and those with base forms, when jussive (imperative or subjunctive) are finite. However, this does not advance our understanding of what finiteness is. Palmer (1986:162) also makes the point that finite and non-finite may not be discrete categories: 'It could be argued that there is no clear distinction between finite and non-finite forms, rather a gradation of finiteness. If the declarative form is considered to be the maximally finite form...., other forms can be considered to be less finite in relation to the degree to which they do not mark the other categories (tense, aspect, number, gender, person) that may be marked on declarative forms. The infinitive may well be maximally non-finite (unless it marks tense), but the subjunctive, if it does not have full tense marking....is less finite than the declarative.' However, with respect to that status of the subjunctive in relation to subordinate clauses, he concedes that it (the subjunctive) may be partially non-finite, but that it contrasts with other non-finite forms in that it is clearly marked for the relevant category of mood (presumably by this he means irrealis). He concludes that "Non-finiteness and mood are thus very different indicators of subordination, and are not to be handled in a single parameter." However, it seems to me that there are fairly good grounds for suggesting that the to-infinitive and the subjunctive encode precisely the same type of irrealis modality.

2.2.3. To-infinitives and modality.

Frahyngier (1995:476) claims that complementizers constitute a part of the system of modality markers, encoding deontic, epistemic and other types of modality. 'The absence of complementizers in indicative main clauses in some languages is explained by the fact that such clauses are inherently marked as conveying a speaker's belief in the truth of the proposition.' (1995:499)

2.2.3.1. The semantics of the *to* infinitive marker.

Several commentators have pointed out that the preposition *to*, which is polysemous in nature, having both directional and recipient meanings (Croft 1990:166), has been reanalyzed as a complementizer preceding the infinitive, (Noonan 1985:47-8), (Hopper and Traugott 1993:71, 181-184), (Warner 1993:135-140). The origins of the 'to infinitive' were as a preposition (meaning *towards*) plus nominalized verb. This phenomenon is apparently common cross-linguistically, for example French *à* < Latin *ad*. The allative-dative marker is associated semantically with notions of 'goals' and consequently it is used as a complementizer precisely with those verbs whose semantics involve some form of 'goal' (Wierzbicka 1988), be it an intended or desired action, notably for example with the verb *want*, where it can express the intended future action of the *wanter* or of some other individual:

12. a. Clio wanted to go to the party
b. Clio wanted Leo to go to the party.

In (12a) and (12b) the action in the complement clause is understood to be subsequent to the action of the matrix verb. Indeed, this is the conclusion of Van Valin & La Polla (1997:472) who analyse *to* as a clause linker which appears whenever the condition [-temporal overlap] is present between the action in each part of the clause.

13. a. Leo persuaded Clio to leave the party
b. Leo saw Clio leave party.

In (13a) the action of leaving the party is subsequent to the act of persuasion and we find the *to* infinitive as expected. In (13b) the action of leaving the party does not follow the act of seeing,

hence the presence of ‘to’ would be unexpected and is not found.⁷

2.2.3.2. The *to*-infinitive and the subjunctive

Evidence for the premise that *to*-infinitives and the subjunctive encode the same semantic element comes from a number of sources, as outlined in what follows. The infinitive form is used in the subordinate clause introduced by *want* type verbs in English both when the subject of the subordinate clause is identical with the matrix and when it is different. However the subjunctive is not normally permitted:

14. a. Leo wanted to leave the party.
 b. Leo wanted Clio to leave the party
 c. *Leo wanted that Clio leave the party.

In Italian, the infinitive is required when the subjects are identical, but the subjunctive is required when they are different as noted previously:

15. a. Leo vuole partire (INF). ('Leo wants to leave')
 b. Leo vuole che Clio parta (SUBJ) ('Leo wants that Clio leave')
 c. *Leo vuole Clio partire (INF). ('Leo wants Clio to leave')

In Romanian the subjunctive, introduced by the modal particle *s*≤ is required both when the subjects are identical and when they are different:

16. a. Leo vrea s≤ plece (SUBJ) ('Leo_i wants that he_i go')
 b. Leo vrea c≤ Clio s≤ plece (SUBJ) ('Leo wants that Clio go')
 c. *Leo vrea plecatⁱ (INF) ('Leo wants to leave')

The different forms of the complement verb, subjunctive or infinitive, used in the subordinate clause can be presented in tabular form for the different languages:

	<i>Same subject in comp</i>	<i>Different subject in comp.</i>
Romanian	subjunctive	subjunctive
Italian	infinitive	subjunctive
English	to-infinitive	to-infinitive

Table 1 Verbal forms of complements of *want*

It would seem implausible to argue that there is any meaning difference between the subjunctive and infinitive forms. Both express some desired future action, which is necessarily irrealis. It might be thought that the inflectional ending of the subjunctive would be useful to identify a different subordinate subject in pro-drop languages, (such as Italian and Romanian), however the fact that the subjunctive is also found in French, which is not pro-drop and would therefore be redundant as far as identification is concerned, coupled with the fact that the Romanian subjunctive has syncretism of 3rd person singular and plural forms in the subjunctive, suggests that the subjunctive is required simply to provide the same modal information as the infinitive.

17. a. El cite_{te} (he reads-3s). El vrea s≤ citeasc≤ (SUBJ) 'he wants to read'
 b. Ei cite_{sc} (they read-3pl). Ei vor s≤ citeasc≤ (SUBJ) 'they want to read'

This may lead us to speculate upon an implicature to the effect that:

⁷ The fact that we do not find a *to* infinitive after *make*, e.g. (i) Leo made Clio leave the party, may be due to the exceptional nature of this verb in that as noted by Mittwoch (1990:125) it appears to take small clause complements, and of course is typically associated with complex predicate formation in other languages.

18. If a language has an infinitive form which is used to express the predicate of a subordinate clause when the subject of that clause is different from the matrix clause subject, then the infinitive form is preferred when the subject is identical.⁸

Vincent (1998) too speculates that the subjunctive is an intermediate category between the indicative and the infinitive, citing the fact that in Romanian⁹ subjects can be extracted out of a subjunctive clause introduced by *seem* or *must*:

19. a. Trebuie c≤ studenŃii s≤ plece
 must-3SG that students.DEF.PL. that leave.SUBJ
 ‘It must be that the students have left’
 b. StudenŃii trebuiau s≤ plece
 students.DEF.PL. must-3PL that leave.SUBJ
 ‘The students must have left.’

This behavior, among others, leads Vincent to the conclusion that “finiteness and mood are different sub-parts of the same overall grammatical category.”

2.2.3.3. Modals and infinitives

The link between modal forms and the infinitive can clearly be seen in the following close paraphrases, where we see that modal verbs and infinitive forms are associated with similar meanings:

20. a. He wondered whether to go. (infinitive)
 b. He wondered whether he should go. (modal verb)
 21. a. She agreed to sell the house (infinitive)
 b. She agreed that the house could/should be sold (modal verb)
 c. She agreed that the house be sold (subjunctive)

2.2.4. The imperative ‘mood’.

In (1) we saw that Huddleston claims that the imperative in English uses the base form of the verb to form a finite clause, however he nowhere defines what he means by finiteness. The closest he comes is to say that apart from some odd exceptions (eg. *Why bother?*) all main clauses are finite, which in the absence of other defining criteria, appears to equate finiteness with absence of subordination. Matthews conversely defines *finite verb* as the following: ‘Traditionally a verb, e.g. in Latin or Greek, inflected for person and number. Now more generally of any verb whose form is such that it can stand in a simple declarative sentence.’ (1997:129). For Matthews, it is the presence of the finite verb which appears to define the finite clause. For Huddleston the fact that an imperative is not a subordinate clause makes it a finite clause, irrespective of the verb form. For Matthews the absence of a finite verb form would certainly qualify it as a non-declarative clause, though we do not know whether it would therefore be non-finite. Japanese for example uses ‘non-finite’ forms, gerunds, for the imperative:

22. Kite kudasai!
 Come-GER please

Italian (Romance) on the other hand, uses the bare stem form to signal the singular imperative in the positive (in most conjugations) and the second person plural present indicative form to signal the

⁸ However the Romanian data, along with that provided by other languages which do not use infinitive constructions in these instances but which nonetheless have an infinitive, illustrate that this is a tendency rather than a universal.

⁹ The data is from Rivero (1989).

plural imperative.

23. Vieni qua (SG) Venite qua (PLURAL).
‘Come here’

But we note that the infinitive form is found with the negative 2nd person singular (*non venire*) and with more formal commands:

24. a. Accendere i fari i galleria (Switch on headlights in tunnel)
b. Spegnere il motore in caso di sosta. (Switch off engines when stationary)

Romanian follows approximately the same pattern as Italian, with the 2nd person singular negative form being the infinitive, without the infinitive marker *a*, with the 2nd singular positive equivalent to the 2nd or 3rd person indicative:

25. a. Vorbe_te! (Speak.2SG) Vorbi_Ōi! (Speak.2PL) ‘Speak!’
b. Nu vorbi! (Neg speak.INF) Nu vorbi_Ōi (Neg speak.2PL) ‘Don’t speak!’

However, Romanian also employs the strategy of the subjunctive marker *s*≤ to issue commands¹⁰ (in the same way as French *Que tu t’en ailles!* ‘That you would go away’).

26. S≤ nu pleci (SUBJ not leave-2SG.IND) ‘Don’t leave’.

Thus if imperative is indeed a mood, then it is also closely associated with both ‘finite’ and ‘non-finite’ verbal forms. The imperative is thus a good example of the difficulty of determining clausal finiteness by reference to verbal morphology.

2.2.5. Summary

The claim was made above that the *to*-infinitive in English could be associated with irrealis modality, be it volitional or epistemic.

The conflict between semantic and syntactic definitions of the concept of tense/finiteness was recognized by McCawley (1988:228): “This distinction between finite and non-finite Ss [sentences - JB] is independent of the distinction between semantically tensed and semantically tenseless Ss...all four combinations of deep and surface tensed and tenseless are attested.” He gives the following examples in Table 2:

The underlined elements are the Ss in question. McCawley notes that the combination “surface tensed, deep tenseless” does not occur in English, however it is found in languages such as Japanese. The construction *koto ga dekiru* (‘is a thing X is able to do’) demands the plain tensed form of the verb, here *hiku* ‘to play’, in its complement. However no tense opposition is permitted in the complement, hence the past form *hiita* is not allowed. Thus, just as the English counterpart ‘play the piano’, the structure is taken to be semantically or ‘deep’ tenseless. McCawley’s term ‘deep tenseless’ may correlate therefore with a semantic category of non-finite, while ‘deep tensed’ may correlate with a semantic category of finite. Again these are sentential properties, while ‘surface tensed and tenseless’ are syntactic categories related to the verb and the clause.

	DEEP TENSED	DEEP TENSELESS
SURFACE TENSED	John said <u>that he was tired</u>	John wa <u>piano o hiku</u> koto ga dekiru John TOP piano ACC play-PRES thing NOM can do-PRES

¹⁰ However unlike French the verb following *s*≤ is in the indicative rather than the subjunctive

		'John can play the piano'
SURFACE TENSELESS	We believe <u>John to have stolen the money</u>	John can <u>play the piano</u>

Table 2 Deep and surface tensed/tenseless complements

3.0. Other 'non-finite' forms.

An example of the use of the English 'non-finite' forms of the bare infinitive and the *ing* participle is found in the complementation of the perception predicate *see*.

3.1. English perception verb complements

3.1.1. Infinitival Perception Verb Complements

A verb of direct perception may take a complement with a verb in the base form:

27. Leo saw his friend get off the train

I shall label this type the Infinitival Perception Verb Complement (IPVC). The following constraints apply to this type (Mittwoch (1990); Dik and Hengeveld (1991); Guasti (1993) and Felser (1998))

(i) The event in the complement is simultaneous with the perception event.¹¹ Hence the incongruity of an independent time reference in each clause:

28. a. *Today Leo saw his friend get off the train yesterday¹².
 b. * Leo saw his friend have got off the train.

From the fact that there can be no independent time reference in the complement clause it is assumed that there is no TENSE operator in the complement.

(ii) The event in the complement is generally required to be physically perceivable:

29. *Leo saw his friend miss his evening class.

As the whole event is the object of perception, it is not necessarily the case that the subject of the IPVC be perceivable, as is evident in the following examples adapted from Declerck (1982:12):

30. a. The children watched Tom move the puppets
 b. We heard the farmer kill the pig.

In (30a) the children would not normally see Tom, and in (30b) the farmer himself would not normally be heard, unless he was grunting with the effort of his actions.

(iii) As a result of the restriction in (i), it is not possible to independently negate the complement clause, given that it is normally not possible to see an event not taking place:

¹¹ Felser (1998:361) labels this requirement as the Simultaneity Condition formulated as $t_{event} \geq t_{event*}$ (that is, the time interval taken up by the event described by a Perception Verb Complement includes the time interval taken up by the matrix event.)

¹² I admit that there may be some scenarios where the two events need not be simultaneous, for example:
 (i) At 10.00 am the police saw the suspect enter the building at 6.00 am (on the security guard's video tape) however as Mittwoch (1990) points out it is still the case that the time of perceiving the event is simultaneous with the perceptibility of the event, even if the perception is indirect.

31. a. Leo didn't see his friend get off the train.
 b. ?*Leo saw his friend not get off the train

It might appear that this constraint is contravened in such cases as (32):

32. Leo saw Clio not walk, but stumble across the room.

However, the interpretation of this sentence has to be that an event was seen, but that that event was of one kind rather than of another kind, not that there was an event which was not seen.

(iv) Again, as a result of (i) the complement clause cannot be a stative verb. Hence the ungrammaticality of the following:

33. a. *The hostess saw Leo own a new tuxedo.
 b. *Leo saw Clio resemble her mother.

Complement clauses containing normally stative verbs would require an event or temporary state reading¹³ as in:

34. a. Clio saw the hostess smile (≠ Clio saw the smiling hostess)
 b. The teacher saw the children sit on the grass (= perform the action of sitting)

This last restriction, and indeed the first restriction, are presumably related to the underlying temporal structure of the IPVC complement with a bare infinitive. It has been observed that the bare infinitival complement is indicative of a perfective aspect or bounded state of affairs (Comrie (1976); Kirsner and Thompson (1976); Barwise and Perry (1983); Dik and Hengeveld (1991); Guasti (1993)). It is understood that the action in the embedded predicate is complete, hence the oddity of the following extension to (27):

35. ?Leo saw his friend get off the train, but he didn't see him leave the train.

The intuition is that the perceiver sees an event including its completion to a resultant state. The perfective aspect of the complement can be seen quite clearly if we try and apply a synonym of the inceptive use of *see*:

36. a. *Leo caught sight of his friend leave the train
 b. Leo caught sight of his friend leaving the train

The ungrammaticality of (36a) contrasts sharply with the grammaticality of (36b) which is of the Participial Perception Verb Complement (PPVC) type. Clearly it is not possible to catch sight of an event which is completed. In other words the logical structure of the IPVC contains an aspectual operator specified for perfect aspect.

Many of these constraints are linked to the absence of the *to* infinitive marker in the complement. The impossibility of any notion of futurity or volition in the complement, which must be simultaneous, precludes the presence of *to*. Perception verbs differ from causation verbs in this respect. This rules out any use of *to* which might be related to intention, volition or purpose.

¹³ Dowty (1979:177-86) makes a distinction between two types of stative verbs, those that range over objects and entities, like *know* (individual-level predicates) and those that range over stages, like *lie* (stage-level predicates). The examples in (38) refer here to the first of these types, the coerced examples in (39) refer to the second. Carlson (1980) and Felser (1998) note that it is a requirement for the IPVC to have a stage-level predicate in the complement, not an individual-level predicate.

3.1.2. The Participial Perception Verb Complement

The use of the *ing* participle in complementation is exemplified in the following PPVC.^{14, 15}

37. Leo saw his friend getting off the train.

The relationship between the *ing* form of the verb and the simultaneity of the action is discussed by Wierzbicka (1988:60) who concludes that the formal similarity between the present participle form and the gerund is not coincidental in that both indicate simultaneity of time. Specifically she claims that gerundive complements imply sameness of time “whenever they combine with temporal semantic types such as actions, processes and states; when, however they combine with atemporal semantic types such as facts and possibilities they are free of the ‘sameness of time’ constraint, because under those circumstances, time is irrelevant.” (1988:69). The same point is made by Stowell (1982:563): “the understood tense of the gerund is completely malleable to the semantics of the governing verb.”

3.1.2.1. Properties of the PPVC

The constraints (i) to (v) above which relate to the IPVC construction all equally apply to the PPVC type. The PPVC type presupposes simultaneity with the event of the main clause. The action of the seeing and the action of getting off the train are co-extensive. In addition as seen above, it is possible to use *catch sight of* with the *ing* complement as it specifies an action in process, rather than a completed action.

The difference between the two types is to do with an ongoing ‘progressive’ aspect internal to the perceived event. In (27) it is understood that the perceiver perceives the completion of an event, in (38) it is understood that the perceiver perceives an event in progress but not necessarily its completion. This is evident from the possibility of the continuation in the following example where the view may have been obscured, or his friend may have changed his mind and reboarded the train:

38. Leo saw his friend getting off the train, but didn’t see him leave the train.

The PPVC will have the same structure as the IPVC except that the value for aspect is specified as progressive. The IPVC and the PPVC are thus nearly identical in semantic properties. Neither of them have a tense operator, but they differ in the type of aspectual operator present. The fact that they are of the same syntactic type means they may be conjoined as in:

39. Leo saw his friend get off the train and the guard waving the flag.

3.1.3. Summary

We have been examining finiteness in terms of a number of factors:

- Syntactic categories of tense and agreement were seen to have little correlation with finite vs. non-finite clauses.
- We have seen that ‘finite’ and ‘non-finite’ forms can occur in both main and subordinate clauses.
- We have seen that certain ‘non-finite’ forms (the *to*-infinitive, the English modals and the subjunctive) are associated with irrealis modality while the bare infinitive and the *ing* participle are associated with factive or realis complements.

¹⁴ I intentionally avoid using such traditional labels as the present or progressive participle in the light of the following analysis.

¹⁵ There are at least three types of PPVC. This claim was first made by Declerck 1982, and subsequently adopted by Felser (1998) and noted by Gisborne (1996), but appears to have been largely ignored or unnoticed by other commentators, notably Guasti (1993) and Dik and Hengeveld (1993). We shall however consider only one type here.

We now turn to an examination of constructions equivalent to the perception complements in Italian to further inform our goal of examining the morphological realization of syntactic and semantic categories.

3.2. Perception complements in Italian

We shall examine two different perception verb complements in Italian, the so-called Accusativus cum infinitivo (AcI), and the ‘pseudo-relative.’

3.2.1. The AcI construction

The AcI construction in Italian is very similar to the IPVC construction in English.

40. Leo ha visto il cameriere rovesciare la bottiglia.
 L. PERF PRES 3S see-PP the waiter knock over-INF the bottle
 ‘Leo saw the waiter knock/knocking the bottle over.’

In (40) the perception verb complement is in infinitive form. However, the event seen by the perceiver is neutral with respect to imperfect versus perfect aspect. This is exemplified by Guasti (1993:150) who points out that while (41) contains an apparent contradiction in that English perception verb complements with bare infinitive are understood to be perfective, the Italian example (42) is not contradictory as it can be interpreted as semantically equivalent to the English PPVC which has imperfective aspect.

41. ? I saw John cross the street, but not reach the other side.
 42. Ho visto Gianni attraversare la strada, ma non raggiungere l’altro lato.
 I saw G. cross-INF the street, but not reach- INF the other side

The lack of a distinction in Italian between perfect and imperfect aspect is of course also reflected in the simple present finite form of verbs, where English uses a distinct form to express imperfect aspect while Italian is neutral with respect to the distinction, viz. (43). This suggests that the semantic structure of the AcI differs from English in that there is no aspect operator in the complement.

43. Gianni attraversa la strada
 G. cross-PRES-3S the street
 ‘Gianni crosses/is crossing the street.’

Nonetheless as Strudsholm (1996:66) shows, the infinitive is dispreferred over the pseudorelative construction discussed in the next section, when the duration of the action is specifically in focus. Taking these factors together we might propose that the logical structure of the AcI is rather like the IPVC/PPVC without an aspect or tense operator in the complement:

3.2.2. The pseudorelative

The second construction under consideration is known as the pseudo-relative (see Radford 1977; Burzio 1986; Guasti 1993; Cinque 1995 and for a recent survey Strudsholm 1996). This construction is illustrated in the following sentence.

44. Leo ha visto Clio che mangiava la pizza
 Leo have-PRES.3SG see-PP Clio that eat-PAST.IMPERF.3SG. the pizza
 ‘Leo saw Clio eating the pizza’

As the translation implies, the pseudorelative is apparent equivalent to (one of) the PPVC constructions in English. The pseudorelative has the appearance of a straightforward relative clause,

however it differs from both the restrictive and non-restrictive relative clauses in the following ways. For detailed exemplification see Barron (1999):

- In a pseudorelative, the initial NP may be a proper noun, as in (44) above. In a restrictive relative clause, only a common noun is permitted.
- The initial NP in a pseudorelative may only relate to the subject of the embedded predicate, whereas in a restrictive relative clause the initial NP may correspond to either the subject or the object.
- The initial NP in a pseudorelative may be expressed by a clitic pronoun on the matrix verb, whereas this is not possible in a relative clause.¹⁶
- The complementizer *che* may be substituted by *il/la quale* in a normal relative clause (restrictive or non-restrictive), however this is not possible in the pseudo-relative:¹⁷

These restrictions appear to illustrate that the pseudorelative is a different type of construction from the relative clause. There are in addition other semantic constraints which as expected are identical to those of the English IPVC and PPVC constructions and the Italian AcI:

- The pseudorelative may only predicate an event, hence stative verbs are disallowed.
- As expected, negation may not occur in the pseudorelative for the reason that it is not possible to see an event not taking place.
- The verb in the pseudorelative may appear to be tensed, but as with other PVC types, it may not have its own referential tense. In fact if the main perception verb is in the present tense, then the verb of the pseudorelative is in the present tense; if the main clause is in the past, then the verb of the pseudorelative is in the imperfect tense.¹⁸

These facts illustrate two things: firstly, that the action perceived must be simultaneous with the act of perception; and secondly, that the action perceived is not a complete action but is aspectually incomplete. Semantically then, the pseudorelative corresponds most directly to an English PPVC.¹⁹ The key properties of the pseudorelative complement appear to be imperfectivity of an event described by the complement; lack of referential tense; visibility of the participant who is the logical subject of the complement clause; the possibility of representing this participant as an object clitic pronoun on the matrix perception predicate contrasting with the status of the whole complement as a constituent. This particular set of criteria suggest to me that we are again dealing with a structure in which the pseudorelative appears to function as a constituent as it has the structure of a complex NP.^{20 21}

¹⁶ Note that this restriction is essentially the same as the restriction on the postmodification of pronouns in English: (i) *Leo hated her who was pouring the wine, and applies similarly to perception verb complements: (ii) *Leo saw her who was pouring the wine.

¹⁷ It is of particular interest, as noted by Strudsholm (1996:57), that in Romanian the equivalent to the pseudo-relative is introduced by the complementizer *c* which is never used to introduce relative clauses.

¹⁸ It is beyond the scope of this work to enter into a long analysis of the relationship between tense and aspect in Italian, however I follow the line that there is a close association between the *-va* imperfect tense forms and imperfect (or progressive) aspect. See for example Bertinetto (1996:119) for a detailed analysis.

¹⁹ It is interesting to speculate why Italian does not make use of a gerund or participle to express tenseless imperfect aspect in the embedded clause rather than the rather elaborate mechanism of the pseudorelative. As noted by Noonan (1985:64) and Strudsholm (1996:53-58) some other Romance languages make far greater use than Italian of the gerund or present participle as alternatives to the pseudorelative.

²⁰ Guasti (1993:146) dismisses the complex NP analysis suggested by both Kayne and Burzio, by claiming that it is not possible to modify the pseudorelative with an appositive relative clause. She claims for example that (i) (which is a normal relative clause) is fine, but that (ii) is not. (i) Ugo, che qui tutti conoscono, è partito senza dir nulla. 'Ugo, whom everybody here knows, left without saying anything.' (ii) *Ho visto Maria che usciva dal cinema, che tu conosci bene. 'I have seen Maria coming out of the cinema, whom you know well.' It appears to me, however, that this is not a particularly convincing example. In (ii) it is not the head noun of the complex NP, Maria, which is being postmodified whereas it is in (i) (Ugo). Also, the placing of the relative clause *che tu conosci bene* could also relate to the noun *cinema*. Interestingly, Strudsholm seems to draw the opposite conclusion

3.2.3. The pseudorelative and finiteness

We have noticed that the only functional operator present in the semantic structure of the pseudorelative complement is that of aspect and have suggested that the imperfect form is used to unambiguously indicate progressive aspect. The imperfect form does superficially appear to carry both tense and agreement information. However recalling the discussion of finiteness in §2.2.5. I would like to suggest that the logical combination of deep tenseless/surface tensed found in some languages, is found in Italian in the pseudorelative construction. In other words that the pseudorelative appears to have both tense and agreement features, i.e. is [+TENSE] [+AGR] but it nonetheless semantically non finite. This, then, would be the strongest case against the argument that finiteness is to do with a positive specification of tense and agreement features. For if [-finite] can = [+TENSE] [+AGR] also, then there can be no correlation between these categories and finiteness.

4.0 The morphological realization of syntactic and semantic features.

At this point we might want to speculate that finiteness is both a semantic property to do with time, in the temporal anchoring of events, and that it is also to do with reality, in that in order for events to have a temporal anchoring, they must be real events. This approach allies finiteness with properties like definiteness. This observation has been made by Lyons (1995:317) “Standard definitions of tense usually fail to make explicit the fact that the reference of natural language tenses...is characteristically definite, rather than indefinite.” Tense then is a syntactic category which is the grammaticalization of time.

The relationship between semantic finiteness, syntactic tense and morphological verb forms depends the interaction of two parameters, subordination and realis/irrealis modality. In other words, the canonical realization of the verb in a realis main clause in English will be with a tensed verb form, whereas the canonical realization of the verb in an irrealis subordinate clause will be with a *to*-infinitive verb form. However, there are many cross-cutting and intermediate categories, such that a modal verb expressing irrealis modality may appear in a main clause. This idea can be expressed in Table 3 where the two axes are realis/irrealis and main clause/subordinate clause.

	<i>Realis</i> ←	→ <i>Irrealis</i>
Main Clause	Tensed verbs	Modal verbs Base forms
↕	Subjunctives	
Subordinate Clause	Bare infinitives /participles	To-infinitives

Table 3 Cross-cutting parameters involved in the morphology of verb forms.

The key question is how do we account for the morphological realization of this disparate set of properties.

4.1. Morphology as the spell out of f-structures.

Morphological words are understood here to be the spell-out of f-structures. The implications of this approach are the following:

to Guasti citing (iii) as grammatical: (iii) Ho visto Maria, che di solito sta sempre a casa, che usciva dal cinema. ‘I saw Maria, who is usually always at home, coming out of the cinema.’

²¹ In Barron (1999) I argue for two different constructions, however I shall restrict myself to describing the most common here.

- Morphological forms (in languages like English/Italian) do not provide us with sufficient information to build f-structures, for example the infinitive cannot tell you whether it is active or passive, outside of a syntactic context. They provide us with a partial lexical semantics.
- Formal features such as VPART PAST PARTICIPLE or VCOMP TO+ are not part of f-structures which is where semantically interpretable properties are given. (see Spencer and Sadler (1999) etc.), they are part of morphological structure.

4.1.1. The semantics of the clause

Barron (1999) partially adopts an approach to clause structure developed by Valin and LaPolla (1997) and develops it within an LFG framework. There is not space to explain VV&LP's approach in any detail, however of particular interest here is the insight that operators such as, ASPECT and NEGATION have scope over different levels of the clause, such that TENSE is a clause-level operator, while aspect has scope over the predicate.²² In examining complementation it is important to recognize in a clause with two predicates we may have two aspectual operators but only one tense operator. This is apparent in perception verb complements such as (45). The f-structure for which is given in (46).

45. Leo has seen his friend getting off the train.

46.

PRED	'see < -, ->'
SUBJ	'Leo'
TENSE	PRES
ASP	PERF
COMP	PRED 'get off < -, ->'
	SUBJ 'his friend'
	OBJ 'the train'
	ASP PROG

Note that the f-structure contains no information about the morphological form of the element which will realize the particular syntactic configuration. F-structure attribute value matrices, particularly their internal structure, are realized in different ways by different languages. The potential realization of an f-structure is a form from the paradigm of forms supplied by the morphology.

4.1.2. F-structures and paradigms in English

Table 5 gives an example set of paradigms of English verb forms. Each verb form has a base form which I have called the default form (the infinitive in English) and a number of other forms, to which I have assigned arbitrary names (the top row). The bottom row (in italics) gives the typical f-structure feature values which provide the context for these forms.

DEFAULT	ING FORM	- S FORM	AM FORM	WENT FORM	WAS FORM	-ED FORM
cross	crossing	crosses		crossed		crossed
eat	eating	eats		ate		eaten
go	going	goes		went		gone
be	being	is	am	were	was	been
	<i>ASP PROG</i>	<i>TENSE PRES MOD REALIS PERS 3RD NUM SG</i>	<i>TENSE PRES PERS 1ST NUM SG MOD REAL</i>	<i>TENSE PAST</i>	<i>TENSE PAST MOD REALIS PERS 3RD NUM SG</i>	<i>ASP PERF</i>

Table 5. Paradigm of some English verb forms.

²² In VV&LP's terms ASPECT is a nuclear-level operator.

Mappings between f-structures and verb forms are of the type:

47. f [ASP PROGRESSIVE] → VFORM ING

As the paradigm lists many forms, choice is restricted to that which matches most closely the set of f-structure features, i.e. this is an approach which lends itself to an optimality theory type of resolution.

48. f TENSE PRES
 MODALITY REALIS → some paradigmatic value
 ASPECT PROG
 NUM SG
 PERS 3

Thus for (48) the requirements of aspect are such that it is best expressed by the *ing* form, while tense (in English) requires expression by a separate tense form of the verb *be*, hence here *is* is the appropriately matching form.

So that for example when in a perception verb complement we have an embedded complement which has no tense, but has progressive aspect the *ing* form is sufficient. On the other hand, when the complement has perfect aspect, the default form is found as there is no more highly specified form.

49. TENSE
 MOOD REALIS
 : : ASP PERF → COMP VFORM = DEFAULT form (cross)
 PRED 'cross'

With an irrealis mood in the matrix f-structure, e.g. with a volition or epistemic predicate as in '*Leo wants to cross the road*', the mapping is:

50. TENSE
 MOOD IRREALIS
 : : PRED 'cross' → COMP VFORM = *to* + DEFAULT form (to cross)

In addition, the morphology allows us to handle the combination of deep tensed, surface tenseless: as in '*I believe John to have crossed the road.*'

51. TENSE PRES
 MOOD IRREALIS
 : TENSE PRES
 : ASP PERF → COMP VFORM = TO + HAVE + ED form (to have crossed)
 PRED 'cross'

4.1.3 F-structures and paradigms in Italian

The situation in Italian is similar, except that the paradigms have a larger set of forms as we can see in Table 6 which is part of the paradigm of *traversare* 'to cross'. Certain forms of the paradigm are associated invariantly with f-structure person and number values, but the other f-structure properties such as tense and mood only typically interact with each form. (52) is a possible f-structure.

52. PRED 'cross'
f TENSE PRES → some paradigmatic value of *traversare* (= *traversa*)
 MODALITY REALIS
 ASPECT PROG
 NUM SG
 PERS 3

Its formal realisation will be taken from the paradigm of forms for *traversare*:

PERSON NUMBER ↓	FORM 1	FORM 2	FORM 3	DEFAULT
1 st sing	traverso	traversai	traversavo	traversare
2 nd sing	traversi	traversasti	traversavi	
3 rd sing	traversa	traversò	traversava	
1 st plural	traversiamo	traversammo	traversavamo	
2 nd plural	traversate	traversaste	traversavate	
3 rd plural	traversano	traversarono	traversavano	
F-STRUCTURE VALUES	TENSE PRES MOD REALIS ASP PROG	TENSE PAST MOD REALIS	TENSE PAST MOD REALIS ASP PROG	

Table 6. Partial paradigm of *traversare* 'to cross'.

If we return to our perception verb complements, we can see that the default form is found in those complements where there is no tense or aspect specified in the complement:

53. PRED *see* < -, ->
 TENSE
 (ASP) → COMP VFORM = DEFAULT
 COMP [PRED '*traversare* < -, ->']

The interesting thing is what happens when progressive aspect of the complement has to be expressed. The forms which are associated with progressive aspect are those forms which we have called FORM 1 and FORM 3. However these are also associated with TENSE and PERSON and NUMBER features. In order to use an appropriate form without clashing features, the person and number features are provided by the RELADJ subject, while the tense form appropriate to the matrix tense form is used. (55) is the f-structure given above for (54).

54. Leo ha visto Clio che mangiava la pizza
 Leo have-PRES.3SG see-PP Clio that eat-PAST.IMPERF.3SG. the pizza
 'Leo saw Clio eating the pizza'

55. PRED 'vedere <-, ->
 SUBJ ['Leo']
 TENSE PAST
 OBJ SUBJ_a ['Clio']
 RELADJ PRED 'mangiare <-, ->
 ASP PROG → RELADJ VFORM = *che* + FORM 3
 SUBJ_a
 OBJ ['la pizza']

5.0. Summary

I have argued here that finiteness may be a semantic property to do with definite referential time, but that it is not a morphosyntactic feature. Rather the particular combinations of tense, modality and aspect in matrix and embedded f-structures make use of parts of the morphological paradigm to realize their properties.

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