

Embedded Ancient Greek Imperatives: A Feature Transfer Analysis

Abstract

This paper presents an analysis of data in which imperative verbs appear in non-root clauses, namely relative and finite verbal complement clauses. Although cross-linguistically rare, such embedding is well attested in languages such as Ancient Greek and Slovenian, while it is impossible in languages such as English. An analysis is presented in which rich imperative morphology is related to the possibility of embedding imperatives in CP contexts, which is formalized in terms of the independently motivated theory of Feature Transfer (Chomsky, 2008). According to the analysis presented here, the difference between Ancient Greek and English imperatives is one of subcategorization, such that a phi-complete C is able to subcategorize for imperative T in Ancient Greek but not in English. Rich imperative morphology, defined as having overt forms beyond the second person, is taken to be a necessary condition for the learner to posit that phi-complete C can select imperatives, as in Ancient Greek, but not in English. The analysis suggests a view of the grammar in which sentential force is encoded in the syntax, given that morphologically imperative verbs are disassociated with directive force in Ancient Greek.

1 Introduction

It is well known that English imperatives cannot appear in embedded clauses, such as finite complement clauses (1a), or relative clauses (1b)¹. This observation holds for some languages with overt imperative morphology, such as German (2a) and Modern Greek (2b) (Han 2000).

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(1) *I think that leave!

(intended meaning, 'I think that you must leave.')

(1b) *That professor, to whom introduce yourself, was my advisor!

(intended meaning, 'That professor, to whom you must introduce yourself, was my advisor.')

(2a) *Hans schlägt vor, dass du den Aufsatz schreib(e).

Hans suggests that you the paper write

'Hans suggests that you write the paper.'

(2b) *O Yannis se dietakse grapse.

the Yannis you ordered_{-2sg} write_{-2sg.imp}

'Yannis ordered you to write.' (Han, 2000)

Given (1) and (2) and parallel judgments in a wide range of languages, it has been argued that such embedding is universally prohibited (Katz and Postal 1964, Sadock and Zwicky 1985, Platzack and Rosengren 1998, Han 2000, Palmer 2001, Portner 2004, among others). While analyses in this domain vary, the prohibition is often linked to the idea that morphologically imperative verbs are universally performative (i.e. they perform a speech act, in the sense of

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¹ A reviewer asks whether morphologically imperative verbs are allowed in non-restrictive relative clauses in Modern Greek in examples parallel to (1b). I consulted three native speakers who all rejected that possibility.

Austin 1962), and such performativity is disallowed in embedded contexts (see further discussion below). More recently, however, several researchers have argued for the possibility of embedded imperatives: Platzack (2008), Rognvaldsson (1998) (Old Scandinavian), as well as Rus (2005) and Sheppard and Golden (2002) (Slovenian). I review these data below.

In this paper, I discuss examples of embedded imperatives in Ancient Greek, which exhibit embedding in the same type of constructions where embedding is prohibited in English. In (3), for example, a morphologically imperative verb occurs in a relative clause, parallel to the context in which a morphologically imperative verb is excluded in English (1b). Given the consensus view that imperatives "teach us nothing about locality or complementation" because "they cannot be embedded" (Koopman, 1997), data such as (3) present an intriguing puzzle for generative linguistics.

(3) Sophocles, *Oedipus at Colonus* (472-473)

krateres	eisin,	andros	eukheiros	tekhne,	hon	krat'	erepson	kai	labas
bowls	are	men	deft	skill	of-which	rim	cover _{-2nd.sing.aorist.imp.active}	and	handle

amphistomous.

double-mouthed

'There are bowls, the work of skilled men, whose rims and both handles you [must] cover.'

While the verb in the relative clause in (3) is morphologically imperative, it is syntactically embedded and not performative. This suggests that performativity and imperative morphology are not as intimately linked in Ancient Greek as compared to English. Crucially, I argue below

that this divorce between performativity and imperative morphology is not the result of language specific morphological variation unique to Ancient Greek, but rather part of a larger cross-linguistic pattern that can be explained in a principled way under the proposed analysis. If this analysis is on track, this suggests that the category 'imperative' is in fact a morpho-syntactic one, and not based on pragmatics, function, or sentence/clause type.

1.1 Specifying the topic of inquiry

In this paper, the term 'imperative' is to be taken as a morpho-syntactic property, which applies only to verbs with imperative morphology (possibly null, as in English); in addition, the proposed analysis indicates that defining imperatives in morpho-syntactic terms is in fact necessary for cross-linguistic explanation. While a number of constructions which do not include morphologically imperative verbs are sometimes labeled 'imperative' due to their pragmatic functions, clauses which contain bona-fide morphologically imperative verbs are a rich topic of inquiry in their own right. This paper therefore excludes from inquiry a number of different clause types that can yield command or directive pragmatics cross-linguistically, such as infinitives, participles, declaratives, and others, because these lack imperative morphology.

Clauses with morphologically imperative verbs can result in a number of different pragmatic readings, such as command, advice, suggestion, among others (see e.g. Iatridou 2008, Portner 2007 for review). Clauses with morphological imperative verbs can even prohibit the action they specify, as in (4).

(4) Take another step and I'll shoot!

In (4), the clause 'take another step,' which contains an imperative verb, can be understood with a reading in which 'taking another step' is prohibited, not commanded.² While developing a model of semantics/pragmatics which can accommodate the diverse pragmatic functions of imperatives is a rich area of current research (Iatridou 2008), there are nevertheless a handful of properties which distinguish clauses with morphologically imperative verbs from non-imperatives, regardless of their pragmatic function.³

The properties of morphological imperatives of special relevance for this paper concern issues which arguably involve the interface between syntax and semantics. These include:

- (5a) The purported universal inability of grammars to syntactically embed imperative verbs; I re-cast this as a locus of cross-linguistic variation in this paper
- (5b) The generalization that the grammatical subject of an imperative verb must be a subset of the addressee(s) (Downing 1969 and others; see also Potsdam 1998)
- (5c) The performative semantics of clauses with imperative verbs, which do not yield truth-conditional semantics (i.e. addressee(s) cannot respond with 'that is true/false')

² Interestingly, the 'prohibition' reading cannot occur with deontic modals such as 'must'; e.g. "*You must take another step and I'll shoot.*" Note also that the *and*-clause is generally taken to be required to obtain the prohibition reading; if this is the case, the prohibition reading cannot be licensed by imperative morphology alone.

³ Note that bona-fide morphologically imperative verbs are sometimes referred to as 'true imperatives' (e.g. Iatridou 2011). This paper is only concerned with such 'true' imperative verbs, where 'true' is understood as referring to their morpho-syntactic specification as imperatives, partially independent of their semantic/pragmatic interpretation.

One way in which some researchers (e.g. Han 2000, 2001, Zanuttini 2008) have attempted to unify (5a-c) is through a Directive Force operator (Han 2000, 2001) or a clausal projection associated with all and only directive force clauses (Zanuttini 2008) in the left periphery of clauses containing imperative verbs; I adopt aspects of these proposals, and explore how a Directive Force operator might interact with imperative morphology in light of (5a-c).

Crucially, directive force is not to be equated with command pragmatics; rather, directive force is responsible for the performative nature of imperative clauses (5c), whether or not these are commands, suggestions, advice, etc. The label directive force is therefore only meant to specify that the clause imparts a directive action upon the addressee, although this may or may not be a 'command.' In addition, for Zanuttini (2008) and Han (2000), *all* morphologically imperative verbs are associated with a Directive Force operator (Han) or syntactic projection associated with directive force (Zanuttini), regardless of pragmatic function.

One major question under debate with respect to imperatives is to what extent 'force markers' should be represented in the syntax of imperatives. In particular, if all imperative verbs were associated with a Directive Force operator (or related projection), such an operator might in fact be redundant with imperative verbs themselves, and therefore eliminable from a theory of imperatives (Portner 2004, 2007). Under this view, 'imperative' would become a semantic/pragmatic category of clauses/sentences, and the prohibition on embedding would be derived, under the conventional assumption that sentential force is a property of (only) matrix clauses (Chierchia and McConnell-Ginet 1990). However, contrary to the view that all imperatives are associated with directive force, I present evidence, primarily from Ancient Greek but also other languages, in which morphologically imperative verbs appear in embedded

clauses, where they are unable to influence the sentential force of the matrix clause.

On the theoretical level, the data and analysis presented in this paper supports a model of grammar in which some left-peripheral element 'types' the sentence, interacting at the same time with language-specific morpho-syntactic properties (see also Cheng 1991, Rizzi 1996 for interrogatives and Rivero and Terzi 1995, Han 2000 for directives). While I argue that all imperatives are associated with directive force in English and many other languages, in Ancient Greek and other languages with rich (person) imperative morphology, imperatives can but need not be associated with directive force. Under the analysis presented here, a Directive Force operator is necessary to license imperative morphology in English, while morphologically imperative verbs in Ancient Greek pattern syntactically with verbs of other modalities, such as indicative or subjunctive, and are only optionally associated with directive force.

I propose that the embedding available for Ancient Greek (AG, henceforth) imperatives can be explained by appealing to the rich morphological imperative paradigm of AG within the independently motivated analysis of Feature Transfer (Chomsky 2008), in conjunction with recent theoretical advances concerning the syntax and semantics of imperatives (e.g. Zanuttini 2008, Portner 2007). While the analysis touches on the semantics of imperatives as this relates to imperative morpho-syntax, my focus here is not on providing a new account of imperative semantics or pragmatics. Rather, the primary issue I address regards the following question: what can account for the syntactic distribution of imperative morphology, given that its distribution is subject to wider variation than once thought? In the analysis developed below, the relevant difference between AG and English imperatives is one of syntactic subcategorization (c-selection), such that a phi-valued C may select imperative T in AG, but not English.

Feature Transfer (in which the ability of T to phi- and case-Agree with a local subject is

dependent upon the properties of its local selecting C) is relevant in this context due to unique restrictions on the properties of imperative subjects in languages such as English. Because the local C-head which selects imperative T in English is devoid of uninterpretable phi-features in the analysis proposed here, the subject of English imperatives must refer to the addressee in a given discourse context, as independently proposed by Zanuttini (2008). I propose that the main relevant difference between languages such as English and those such as AG is whether or not a C head with (uninterpretable) phi-features can select morphosyntactically imperative T. Because AG allows a phi-valued C to select imperative T, the semantic and syntactic restrictions observed for English imperative subjects (e.g. addressee-orientation) should not hold for AG.

Crucially, the appeal to Feature Transfer is made in order to explain how a language learner may come to develop a grammar that patterns with either English or AG with respect to imperatives. I provide additional cross-linguistic evidence that AG is not alone in allowing embedded imperatives, and that the relevant empirical generalization is that only languages with rich person imperative morphology allow embedding in the relevant sense. Adopting Feature Transfer therefore provides a language acquisition mechanism to explain the observed cross-linguistic variation, while at the same time theoretically grounding the empirical generalization, yielding an (in principle) falsifiable hypothesis regarding the connection between overt morphological variation and the variation with respect to syntactic embedding.

This paper is structured as follows. In section 2, I discuss data from AG and English, adopting aspects of the analysis of English imperatives presented in Zanuttini (2008), who takes the unique interpretive restrictions on English imperative subjects to be a primarily syntactic phenomenon. Claims regarding embedded imperatives in languages such as Korean, English, and Old Scandinavian are also discussed, and are argued to be distinct from the AG examples. In

section 3, I show how adopting a Feature Transfer analysis offers an explanation in terms of learnability for the contrast with respect to embedding. In section 4, I extend the analysis to other languages which, like AG, have relatively rich imperative paradigms; languages considered here include Slovenian, Kobon, and Bhojpuri. I also discuss implications for the category 'imperative' in generative grammar, given the proposed analysis. Section 5 offers a brief conclusion.

2 A Morpho-Syntactic Approach

2.1 AG imperative embedding is not constrained by properties of the matrix clause

The fact that AG imperatives can occur in embedded clauses in ways not possible for English has been known for quite some time among classical philologists (Goodwin 1875, Smyth 1920).

Rivero and Terzi (1995) discuss properties of matrix imperatives in AG, noting that imperatives may embed in this language, although this is rare cross-linguistically; they suggest that the restriction against embedding in languages such as English "may not be syntactic" (ft. 13). In this paper, however, I develop a morpho-syntactic approach to the difference between these two types of languages, deriving Rivero and Terzi's observation that AG imperatives have distributions similar to AG verbs of other modalities, although imperatives in many languages have specific distributions with respect to clitics, negation, and other functional elements.

AG, which has overt and distinct imperative verbal morphology for both the 2nd and 3rd person, allows imperatives to be embedded in both relative clauses and verbal complement clauses. Examples of imperative verbs in finite verbal complement clauses include (6) and (7).

(6) Lysias Fragment 75.3 (2.3 in Budé edition)^{4, 5}

edethe hekein auton epi komon, legon hoti meth' hautou kai ton oikeion pieto

beg to-go him to party, saying that with him and his family drink-3rd.sing.aor.imp.active

'he begged him to go to a party, saying that he [must] drink with him and his family'

(7) Thucydides (4.92.7)

deixai hoti hon men ephientai pros tous me amunomenous epiontes ktasthon...

to show that who while attack against those not defending attackers acquire-3rd.pl.pres.imp.mid/pass

'To show that while attackers who attack against those not defending themselves [will] acquire

(wealth)...'⁶

In both (6) and (7), imperative verbs appear in clauses headed by *hoti* 'that,' following verbs in the matrix clause which correspond to English 'say' and 'show,' respectively. The imperative verbs in these clauses are 3rd person singular, aorist and in the active voice for (6), and 3rd

⁴ The AG examples reported here are discussed in one or more of the following grammars:

Goodwin 1875, Gildersleeve 1900, and Smyth 1920. Due to the difficulty in translating sentences with embedded imperatives into English, I occasionally include an English modal such as 'must' in brackets. I have always attempted to provide translations which are literal while conveying the general meaning of the example; in some cases I have included an additional literary translation where appropriate.

⁵ The Budé edition reads as above. Some editions have *oiketon* 'slave' instead of *oikeion* 'family,' although this point is independent of the imperative verb.

⁶ This passage is translated by Thomas Hobbes as "let them see that though they may gain what they covet when they invade such as will not fight..."

In both (3) and (8), 2nd person aorist active imperatives appear in the embedded clause, in sentences in which the indicative matrix verbs are *be* and *know*, respectively. In (9), a 3rd person imperative⁸ is embedded under a matrix verb in the subjunctive mood, which corresponds to English 'let us mandate.' (10) includes a 3rd person imperative in a relative clause in which the matrix verb is 'be.' Note also that AG has distinct subjunctive and optative paradigms that are clearly distinct from imperatives. Given these examples⁹, it seems reasonable to suspect that few restrictions govern the embedding of imperative AG verbs (i.e. with respect to properties of the matrix verb and grammatical subject of the embedded imperative) beyond those which hold for embedding of other non-imperative finite verbs, such as e.g. sequence of tense restrictions.

These AG data show that embedding imperatives is in fact a possibility made available by UG and also suggests that restrictions on embedding in languages such as English are not due to language-general semantic or pragmatic constraints. As discussed below, an additional and somewhat surprising property of AG imperatives is that the referent of the subject of the embedded imperative does not necessarily depend on the arguments of the verb which selects the relevant CP; e.g. in (7), an impersonal verb selects the CP with the embedded imperative.

Given that AG imperatives can occur in relative clauses (3, 8-10) and finite complement clauses (6-7), which are all, by hypothesis, CPs (Alexiadou et al. 2000), AG embedded imperatives are somewhat distinct from other cases of embedded imperatives that have been

⁸ Note that the imperative verb in (9) is derived from *exesto* 'it is allowed;' I translate it here as 'be,' which is suggested by Liddell and Scott's (1996) lexicon for intransitive uses.

⁹ Further examples can be found in Gildersleeve (1900, ch. 12, (422)) and below.

discussed in the literature. These include the following cases discussed by Platzack (2008) and Rognvaldsson (1998) for Old Scandinavian (11), Crnic and Trinh (2008) for English (12a), and Pak et al. (2007) for Korean (13).

(11) Ger pu annadhvort ad pu sel pa fram ella munum ver brenna up baeinn.
do you either that you deliver_{imp} it up or will we burn up house-the
'Either you deliver it or we will burn the house.'

(12a) John said (*that) call Mary.

(12b) John said to Watson call Mary.

(grammatical if Watson is being ordered to call Mary, ungrammatical otherwise)

(13) John-i Tom-ekey [(Ney/*Mary-ka) cip-ey ka-la]-ko mal-ha-ess-ta.

John_{NOM}Tom_{DAT} [(you/Mary_{NOM}) home-to go_{IMP}]-comp say-do_{PAST-DEC}

(Intended meaning) 'John ordered Tom to go home.'

Examples (11-13) are syntactically constrained in ways that suggest these are distinct from the AG cases discussed above. For example, embedded imperatives in Old Scandinavian such as (11) are subject to several restrictions according to Platzack (2008). First, these are allowed only embedded under that-clauses with an overt complementizer, represented as *ad* in (11). Second, the pronoun subject of the imperative is required to be overtly realized, even though pronominal subjects of matrix imperatives are generally null in Old Scandinavian. Crucially, in all of the data provided by Platzack (2008), the subject of the embedded imperative must be coreferent with the matrix subject and include the addressee (Rus, 2005).

Another example of an embedded imperative which, I argue, is distinct from the AG type, appears in Korean (13), which has properties similar to that of the English (12a,b). While Korean embedded declarative subjects may be freely overt or null, subjects of embedded imperatives must be either null or, if overt, must correspond to the referent of the matrix indirect object or a subset thereof, and must also be combined with a topic marker (Pak et al. 2007). The English example is also highly constrained; this embedding is only possible under the matrix verb *say*, and prohibits the inclusion of an overt complementizer. As (12b) shows, English is like Korean in that the referent of the subject of the embedded imperative must co-refer with the referent of the matrix indirect object or subset thereof, if present.

Given the differences between the more syntactically constrained cases (11-13) and the less restricted AG examples (3, 6-10), I develop an analysis of embedded imperatives below which focuses exclusively on the ability to embed in CP clauses without restrictions on (especially) the subject of the embedded imperative (for formal analysis of imperative subjects for (13), see e.g. Zanuttini et al. 2012). In the next few sections I focus exclusively on differences between AG and English with respect to imperatives embedded in CPs; in section 4, I show that AG is not alone cross-linguistically in allowing this construction. I further argue that richness of imperative morphology is the relevant distinction between these two language types.

2.2 Encoding aspects of imperative meaning in the syntax

AG imperative inflection is comparatively richer than English. Within the present and aorist tenses, AG imperative verbs conjugate for second and third person, singular, dual, and plural, as well as active, middle, and passive voices, with the middle and passive paradigms exhibiting some

overlap (Smyth, 1920). Excluding the rare (and therefore possibly spurious) perfect forms, AG imperatives are standardly assumed to appear in 30 morphologically distinct realizations (Smyth, 1920); see the appendix for paradigm of present and aorist forms.

The morphological situation is quite different for English imperatives. English imperatives have a single morphological realization which corresponds to two interpretations, 2nd person singular and plural, both forms in present tense and active voice. According to the cross-linguistic typology of imperatives presented in Mauck (2005), English represents the norm in terms of morphological richness; the majority of languages in his sample have special forms for 2nd person imperatives only.¹⁰

Having discussed some basic properties of AG imperatives (3-10) and reviewed imperative paradigms for both AG and English, I now turn to some English data and their analysis as presented in Zanuttini (2008). While a full review of the literature on English imperatives is outside the scope of this paper, many of the data examined by Zanuttini are also discussed within the syntax literature by Rupp (1999), Potsdam (1998), and Beukema and Coopmans (1989), among others.

¹⁰ An explanation for why so few languages have rich imperative morphological paradigms, when these paradigms are clearly UG available, is in an interesting issue but beyond the scope of this paper. While I take the position in this paper that the possibility to embed imperatives is a morpho-syntactic issue, it is possible that semantics and pragmatics have also played a role in the reduction of imperative paradigms for languages such as Modern Greek, which has far fewer forms than AG (Rivero and Terzi, 1995).

Zanuttini (2008) notes several interesting properties of subjects in 'core' imperative cases, where 'core' refers to those cases in which all speakers whom she consulted agree on the grammatical status of the examples. These properties mostly concern interpretive properties of subjects of English imperatives. While it is well known that English imperative subjects can be phonologically null, most non-imperative null pronominal subjects in English must be either generic (14) or controlled (15). Yet imperative null pronominal subjects can be specific (16).

(14) PRO hiking is fun. = ({for people in general/*for Mary} hiking is fun)

(15) He likes PRO to hike. = (John likes {John/*Mary} to hike)

(16) pro sit down! = ({John/*people in general} is commanded to sit down)

Subjects in English imperatives such as (16) are neither generic nor controlled, referring instead "to a (possibly singleton) set of addressees, or a set containing the addressee(s)" (Zanuttini, 2008).

Subjects of English imperatives have second person features, as shown by the fact that tag questions in imperatives with null subjects can only have 2nd person pronouns.

(17a) Raise your hand, won't you.

(17b) *Raise your hand, won't he.

Additional evidence for the claim that imperative subjects in English always have (at least) 2nd person features comes from quantificational subjects. As Zanuttini points out, quantificational subjects of non-imperative sentences cannot bind 2nd person pronouns.

(18a) Everyone_i should/must raise his_i/her_i/their_i/*your_i hand.

(18b) Someone_i should/must raise his_i/her_i/their_i/*your_i hand.

Quantificational subjects of imperatives, however, may bind both 2nd and 3rd person pronouns.

(19a) Everyone_i raise his_i/her_i/their_i/your_i hand.

(19b) Someone_i raise his_i/her_i/their_i/your_i hand.

Zanuttini notes that some treatments of these data attribute the quantificational properties of English imperative subjects to semantic agreement (Potsdam 1998, Farkas and Zec 1993, Pollard and Sag 1994), but that these approaches don't account for why such semantic agreement is unavailable in declarative (18) and interrogative sentences, even when the subject is interpreted as the addressee (as is the case in imperatives) and a deontic modal is present (18a). Zanuttini ties the ability of quantificational subjects to bind 2nd person pronouns to agreement between a functional head in the left periphery (discussed at length below) with the null D-head of the quantification subject. Zanuttini tentatively suggests "that null determiners in English lack a value for the person feature, and therefore can acquire one from a functional head;" while Zanuttini does not address the ability of quantificational subject to also bind 3rd person pronouns, this presumably follows from either the nature of the D-head selected from the numeration or from 3rd person features inherent to the quantifier.¹¹

¹¹ A reviewer points out that characterizing the relevant binding possibilities in terms of D-head properties may explain cross-linguistic differences; not all languages allow quantificational subjects to bind 2nd person pronouns.

Additionally, allowable core English imperative subjects include bare nouns and proper names. These too can bind 2nd person pronouns when imperative, whereas such binding is excluded for non-imperatives.¹²

(20a) Boys_i are often *your_i/their_i own worst enemy.

(20b) Boys_i raise your_i hands.

(21a) Gabriel_i combed her_{i,j}/*your_i hair, while Dani_j put on her_{i,j}/*your_i shoes.

(21b) Gabriel_i comb your_i hair, Dani_j put on your_j shoes.

In sum, Zanuttini (2008) argues that English imperative subjects have the following two related properties; they always have (at least) second person features and are always addressee oriented, based upon the English data presented above and additional data not included here (see Zanuttini 2008, p. 187-195).¹³

In addition to having second person features, Zanuttini (2008) follows Portner (2007) in suggesting that imperative subjects do not form a predicate with the imperative verb. Consider for a moment the relationship between deontic modals and imperatives; Portner (2007) notes that "the variety of subtypes of imperative clauses parallels the range of interpretations of modal

¹² Zanuttini (2008) is careful to distinguish imperative subjects like those in (20-21) from subjects of vocatives; see also Moro (2003).

¹³ However, the ability for English imperatives to have quantificational and proper name subjects is not traditionally taken to mean that English imperative verbs can be morphologically 3rd person; note that the obligatory interpretation of an imperative null subject is 2nd person, and that English imperatives disallow many kinds of 3rd person NP/DPs, e.g. pronouns.

verbs, in particular, priority modals," in which 'priority modals' is taken to mean the range of modal types often subsumed under the term 'deontic.' For example, consider the following pairs, based on similar data presented by Portner:

(22a) Sit down now!

(22b) Watson must sit down now! (order)

(23a) Have a piece of this tasty bread!

(23b) Watson must have a piece of this tasty bread! (invitation)

(24a) Talk to your advisor more often!

(24b) Watson really must talk to his advisor more often! (suggestion, advice)

In (22-24), the (a) examples differ from the (b) examples in that only in the (b) examples can an interlocutor plausibly respond 'that's true' or 'that's false,' which suggests that these imperative clauses are not subject to conventional truth-conditional semantics, but are instead 'performative' in nature, an intuition adopted here as well. Nevertheless, the parallels in meaning between the imperative and the modal sentences (22-24) have led some (e.g. Schwager 2006) to suggest that imperatives contain covert deontic modals. Following Ninan (2005), Portner (2007) suggests that "the interpretation of deontic *must* in root clauses shows that it has a performative, imperative-like component of meaning in addition to its ordinary truth-conditional modal meaning." When deontic *must* appears in non-root (i.e. embedded) clauses, it loses its performative meaning but maintains its truth conditional semantics (25).

(25) Since John must go to confession, he should find a church soon.

On Portner's (2007) account, the primary difference between root imperatives (i.e. all English imperatives) and deontic modals is that modal sentences "can be called 'true' or false', while imperatives intuitively cannot." Consider (22b); the speaker in this case may be mistaken regarding e.g. the order to sit; truth conditional semantics can be applied in a conventional fashion. On the other hand, a response of "that's false" to (22a) would be infelicitous. One way of formalizing this kind of semantics is pursued in Portner (2004, 2007) by means of the 'To-do list' (see also Iatridou 2008 for extensive discussion).

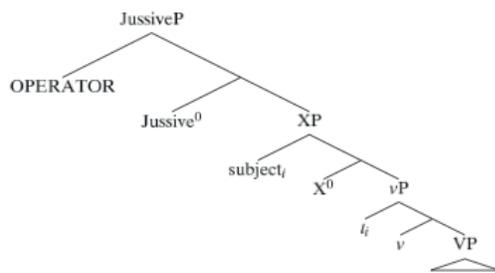
To account for facts about both imperative subjects and the inability of imperative clauses to be interpreted truth-conditionally, Zanuttini proposes that English imperatives are headed by a Jussive Phrase, which hosts the relevant semantic operator necessary to derive addressee-orientation (Zanuttini does not claim, however, that the Jussive Phrase contains a Directive Force operator). Specifically, "the Jussive Phrase has an operator in its specifier that acts as a lambda operator and abstracts over the subject" (Zanuttini 2008). Adopting the Agree relationship proposed in Chomsky (2000) and modified by Pesetsky and Torrego (2007), who crucially argue that the probe for Agree need not have uninterpretable features, Zanuttini proposes that the head of the Jussive Phrase hosts interpretable 2nd person phi-features and is able to check/value case. When the Jussive Phrase is the most local probe and undergoes Agree with the subject of an English imperative, the subject's uninterpretable case feature is valued for nominative (Zanuttini assumes an imperative clause structure lacking a node (e.g. T or Infl) which can case-value the subject independently; I recast this below as a point of cross-linguistic variation within the theory of Feature Transfer). Crucially for Zanuttini, undergoing Agree with the head of the Jussive Phrase causes the subject of the imperative to be valued for 2nd person features; this mechanism allows quantificational (19) and other inherently 3rd person (20-21)

subjects to bind both 2nd and 3rd person pronouns just in case the main verb is morphologically imperative, because T is unable to phi-agree with the subject in jussive clauses.

Assuming, then, that English imperatives originate in VP and that subjects in these structures must raise to some higher projection, Zanuttini proposes the structure in (26).

(26) Structure of English Imperative, First Analysis

(Zanuttini, 2008)



Within Zanuttini's system, Jussive Phrases have the following four properties:

- i) Jussive Phrase heads all and only directive clauses (including all clauses with imperatives).
- ii) Jussive° hosts (only) interpretable 2nd person features.
- iii) A lambda operator in Spec, Jussive Phrase abstracts over the subject, taking as input a proposition, consisting of the predicate saturated by the subject, and yielding a property as output.
- iv) Given the properties of Jussive° and the lambda operator in Spec, JP, Jussive Phrases are addressee oriented; this yields the default and obligatory 2nd person interpretation of imperatives in English (and, apparently, most languages (Zanuttini 2008)).

I return to Zanuttini's characterization of the Jussive Phrase below, amending her proposed structure of imperatives. First, however, I turn to properties of XP in (26).

Although Zanuttini remains agnostic as to the label of XP in (26), XP crucially has the following two properties: i) X° attracts the subject to its specifier (where the subject can undergo Agree with the head of the Jussive Phrase; i.e. the interpretable features in Spec, JP are not subject to Transfer) and ii) X° does not phi-Agree with the subject. Given these properties, the trigger for movement to X° must be an EPP feature, an argument I empirically motivate below. If X° in (26) were able to agree with the subject (as in e.g. finite indicatives), imperative subjects such as 'everyone' would be unable to acquire 2nd person features from Jussive $^\circ$, contrary to fact.¹⁴

Under Zanuttini's analysis, the subject movement in (26) is purely structural. That movement does indeed take place is independently confirmed by several tests (see also Potsdam, 1998). For example, Beukema and Coopmans (1989) argue that subjects of imperatives are in Spec, IP at S-Structure under their analysis of do-support in negative imperatives; Beukema and Coopmans claim that *don't* in imperative clauses is in COMP based on (27).

(27a) You don't write very often.

(27b) *You don't be foolish.

(27c) Don't you (ever) write.

(27d) Don't anybody ever forget that.

¹⁴ Crucially for Zanuttini, the Jussive Phrase is required to license imperative morphology in English; if the C and T heads that select indicative morphology were able to license imperative morphology, we would expect there to be no special restrictions on English imperative subjects.

(27a-c) show that the structural position of *don't* in imperatives differs from declaratives (27a), appearing in a left-peripheral position, which they identify as COMP. If *don't* is in COMP and we assume that subjects are in Spec, IP, then we correctly predict that VP internal adverbs like *ever* will appear between the subject and the imperative verb (27c,d).

Additional independent evidence for subject raising in imperatives involves tag questions, already briefly discussed in (17) above. I assume first that the subject of a tag question (in any modality) must co-refer with the subject of the matrix clause (28). Further, I argue that the subject of the tag question must correspond with a matrix subject that is in Spec, TP. Evidence for this claim can be found in existential constructions such as (29); only the pronominal equivalent of the subject in Spec, TP (i.e. *there*) is available for the tag question.

(28a) Raise your hand, won't you?

(28b) *Raise your hand, won't they?

(29a) There's a man in the room, isn't there?

(29b) *There's a man in the room, isn't he?

If this analysis is on the right track, then the null matrix subject of (28a) is in Spec, TP, providing evidence that subject movement occurs in imperative clauses.

2.3 TP & CP in imperative clause structure

In this section, I propose that many of the advantages of Zanuttini's (2008) system can be captured with syntactic projections that are not specific to imperative verbs or other jussive-type clauses. In particular, I adopt a representation of imperative clause structure which is closer to

that argued for in Han (2000, 2001), but with derivational properties similar to that proposed by Zanuttini. Returning now to (26), note that a functional head with the properties of Zanuttini's XP has been proposed independently of the grammar of imperatives, namely the Tense head in raising/ECM constructions, which by hypothesis has only an EPP feature (see e.g. Chomsky 2008 for discussion). In order to provide a maximally general grammar of imperatives while maintaining aspects of Zanuttini's system, I propose that XP in (26) is a phi-less and case-less T. Given the nature of Agree as proposed by Chomsky (2000), a T lacking case and phi-features will also be unable to value case, meaning that the subject, once raised to Spec,TP, will still be available to undergo Agree with elements of JussiveP (or a similar projection). As discussed above, Agree between the subject and the head of JussiveP results in nominative case valuation and 2nd person features on the subject in Zanuttini's proposal.

I additionally suggest that the advantages of Zanuttini's (2008) system, which assumes an expanded left-periphery in the sense of Rizzi (1997), may be captured without making reference to the Jussive Phrase and, as discussed above, by specifying Zanuttini's XP as a TP projection of phi-less T^o.¹⁵ The same facts about imperative interpretation (i.e. that they are addressee oriented, have second person subjects, and do not involve standard truth-conditional semantics)

¹⁵ Part of Zanuttini's (2008) motivation for proposing a Jussive Phrase (as opposed to CP) comes from the ability of her proposal to account for other 'jussive' type clauses (with verbs in e.g. the subjunctive or infinitive) that have directive interpretations. I leave for future research whether or not the proposal in this paper can cover those additional constructions; an advantage of the proposal in this paper is maintaining a syntax which is uniform with other clause types in terms of phrasal nodes (i.e. CP and TP, as opposed to JP and XP).

can be captured by appeal to a C head with interpretable 2nd person features (like Zanuttini's Jussive^o), but with a Directive Force operator in its head.

The idea that a Directive Force operator is present in the syntax and occurs in C^o is not novel. In particular, Han (2001) advances several arguments suggesting that this is the case in her study of cross-linguistic asymmetries of imperatives under negation. I repeat one of her arguments here. Han (2001) discusses work by Den Besten (1989) on the placement of verbs in *yes-no* questions as this relates to imperative word order. First, Han notes that the word order of *yes-no* questions matches the word order of imperatives in German, suggesting that the position of the imperative verb in German is the same as that in polar questions. According to Den Besten (1989), the verb in German polar questions is in C^o based on the placement of weak object pronouns. For example, in embedded declaratives (30) and in polar questions (31), such pronouns can occur either before or after the subject.

(30) ..., dass (ihm) Karl (ihm) ein Buch geschenkt hat.

..., that to-him Karl to-him a book given has

'..., that Karl has given a book to him.'

(31) Werden (sich) diese Leute (sich) verteidigen?

will themselves these people themselves defend

'Will these people defend themselves?'

According to Den Besten (1989), the fronted verb in polar questions is in C° , under the assumption that the possible positions for weak object pronouns are the same in both embedded declaratives (30) and polar questions (31) (also assuming that *dass* is in C°).

Han (2001) then observes that imperative verbs behave in the same fashion as (30, 31) with respect to weak object pronouns.

(32) Schreib (es) du (es) heute!

write it you it today

'You write it today!'

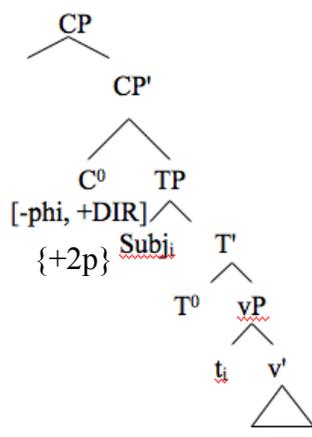
Han argues that the imperative verb in (32) undergoes head movement analogous to that observed in (31), concluding that this movement to C° is triggered by a Directive Force operator in that position (see Han (2001) for additional argumentation, especially with respect to clitics).

While I agree with Han (2001) that a Directive Force operator is located in the head position of a left-peripheral syntactic projection of imperatives, I also agree with Zanuttini (2008) that this left-peripheral head contains interpretable 2nd person features and can undergo Agree with the subject of the imperative clause, provided the subject and relevant head occur in a local relation. I also concur with Zanuttini that the head which attracts the imperative subject (her XP, my TP) should not be able to independently undergo Agree with the imperative subject (in English), which is to say that this XP/TP has no phi-feature content.

Looking ahead to the following section's Feature Transfer analysis, this means that both C and T will be devoid of uninterpretable phi-features (i.e. T will not be able to case-value the

subject). I propose, therefore, that the clause structure of an English imperative is (33), in which C° hosts interpretable 2nd person features as part of a Directive Force operator.

(33)



Assuming (33) encodes facts about the imperative interpretation into the syntax of imperatives, following closely the analysis presented in Zanuttini (2008), while also capturing evidence concerning subject raising (27-29). Crucial for both Zanuttini's and my analysis is the hypothesis that the head of CP/JussiveP values the subject for second person features; this is to say that the Directive Force operator is addressee-oriented and 2nd person, given the presence of interpretable 2nd person features. Since T° in (33) or X° in (26) is devoid of phi-features, the subject undergoes Agree with the directive operator (and not T), yielding the performative force of English imperatives; i.e. the subject does not form a predicate with the verb.

However, assuming (33) offers some conceptual and empirical advantages over Zanuttini's (2008) analysis, which argues for (26) as the structure of English imperatives. First, (33) is explicit about the categorical status of the head which attracts the subject to a specifier position; this is identified as a T head similar to that proposed for raising/ECM constructions in Chomsky (2008). Additionally, (33) assumes that a Directive Force operator is in the C°

position, essentially following the representation of imperatives in Han (2000, 2001), allowing Han's analysis of negated imperatives to be maintained within the current proposal (see also footnote 15, above). Further empirical advantages with respect to AG are discussed below.

The nature of directive force also raises questions as to the featural content of the Jussive Phrase within Zanuttini's system. While I do not develop a new analysis of imperative semantics in this paper, I tentatively follow Han in assuming that the Directive Force operator contains some semantic features (for Han these are +[directive] and +[irrealis]).¹⁶ In Zanuttini's model, Jussive° contains only interpretable syntactic features, but no semantic features. This is somewhat puzzling, given that all directive clauses are headed by a Jussive Phrase; within Zanuttini's system, the only semantic element distinguishing JussiveP is in a specifier position. If Jussive° is devoid of any semantic features, with only a semantic operator in its specifier, one wonders if and how Jussive° c-selects a TP (XP for Zanuttini) that contains an imperative verb, and conversely, why Jussive° is (correctly) barred from selecting non-directive clauses.

To conclude this section, I proposed (33) as the structure for English imperatives, considering proposals by Han (2000, 2001) and Zanuttini (2008), who argue that the syntax of imperatives in English should encode aspects of interpretation. I formalized this by a Directive Force operator, which I located in C°, following Han (2000, 2001). The structure proposed above therefore accounts for facts about imperative subjects and the type of word-order effects discussed by Han, without recourse to a projection unique to directive clauses. In the next section

¹⁶ While Han refers to the force imparted by this operator as 'illocutionary force,' I agree with Portner (2007) that 'sentential force,' in the sense of Chierchia and McConnell-Ginet (1990) is more appropriate in this context.

I argue that (33) is the only structure in which we may expect to find imperatives in languages, such as English, where the imperative morphological paradigm is relatively impoverished.

3 Extending Feature Transfer to the domain of imperatives

In this section, I argue that the difference between English and AG with respect to the grammar of embedded imperatives (allowed only in the latter) can be characterized in terms of c-selection and agreement. While I have adopted a representation of English imperative clauses resembling that of Han (2000, 2001), I argue that the derivation of an English imperative clause proceeds along the lines proposed by Zanuttini (2008), by which T is devoid of phi-feature content and the subject undergoes case- and phi-agree with the head of a left-peripheral projection. I identified this element as a C° which contains a Directive Force operator and also interpretable 2nd person features.¹⁷

On the other hand, I will argue (following the intuition, if not the analysis, of Rivero and Terzi 1995) that AG imperatives pattern with other finite verbs in this language, and are selected by a C° that contains uninterpretable phi-features which are then transferred to T by the operation Feature Transfer (Chomsky 2008). Feature Transfer cannot apply to the interpretable, 2nd person features associated with the directive force operator in the proposed analysis of English, since these phi-features do not meet the structural description of the operation; namely, the relevant head contains interpretable 2nd person features, while Feature Transfer applies to

¹⁷ Recall that, following Zanuttini, I adopt the Agree relationship proposed by Pesetsky and Torrego (2007), according to whom Agree does not require uninterpretable features.

uninterpretable phi-features only.¹⁸ To the extent that Feature Transfer cannot apply to English-type imperatives, an explanation is forthcoming for why imperatives in English must be licensed by a special directive operator (Han) or projection (Zanuttini).

Under the assumption that any first language learner can acquire any natural language, adopting Feature Transfer provides a mechanism by which the learner can distinguish between the two language types based on overt morphological evidence. This offers a principled way to explain the observation that AG imperatives do not have unique syntax as compared to other modalities (i.e. they can be embedded). Further, adopting Feature Transfer provides a means to go beyond a construction-specific characterization of the two grammars by offering an (in principle) falsifiable hypothesis regarding the availability of embedded imperatives in CP contexts. In this section, I first review Feature Transfer, and then apply it to characterize the difference in selectional properties between English and AG.

3.1 Feature Transfer and selection

The theory of Feature Transfer was proposed by Chomsky (2007, 2008; see also Richards 2007) to offer an explanatory, non-lexical account for the empirical generalization that raising/ECM T differs from finite/control T, in that raising T is unable to value case- and phi-features on the subject. Chomsky achieves this by introducing the following assumptions. First, assume that T is

¹⁸ The idea that uninterpretable phi-features are subject to Transfer is empirically motivated by e.g. suppression of certain subject island effects (Chomsky 2008, p. 147); this does not entail, however, that all features on C° should be subject to Transfer. In particular, interpretable features in general (including e.g. category features but also interpretable person features, if present) would presumably not be subject to Transfer.

not specified for phi-features in the lexicon but rather inherits these from C. Second, assume that this phi-bearing C does not select for raising/ECM T. In other words, T is unable to act as a phi-probe without a local, c-commanding C head that selects it, such that "the availability of C determines the potential of T" (Obata and Epstein, 2008). Within Feature Transfer, then, the crucial difference between English finite T and English raising/ECM T is one of selection; the former is selected by C while the latter is not. In other words, finite T in English is always selected by a C head that contains uninterpretable phi-features; once these uninterpretable phi-features are transferred to T, the subject of a finite clause can case- and phi-Agree with T.¹⁹

A prediction of this theory is that an embedded T will have phi-features only if selected by C which bears phi-features (34a,b), but will lack phi-features when not (34c,d).

(34a) I believe [_{CP} (that) [_{TP} Mary is smart]].

(34b) It seems [_{CP} (that) [_{TP} Mary is smart]].

(34c) I believe [_{TP} Mary to be smart].

(34d) Mary seems [_{TP} t_{Mary} to be smart].

¹⁹ Note that even for Chomsky's (2008) proposal, a distinction must be made between C° which bears uninterpretable phi-features and a C° which does not, to account for data such as (i):

(i) I prefer for John to go.

Under the standard analysis, the embedded clause is a CP, but nevertheless non-finite. Given (i), the crucial relationship in Feature Transfer theory is in fact selection; only phi-bearing C° can select finite T. This point will be relevant for the analysis developed below.

In this section, I extend this Feature Transfer analysis to the domain of imperatives in order to explain the contrast between English and AG imperatives discussed above; to the extent that this analysis is successful, it also lends support to the Feature Transfer theory by increasing its empirical coverage.

Consider again the structure of English imperatives proposed by Zanuttini (26). According to this analysis, both the head of JussiveP and the head of XP are devoid of uninterpretable phi-features, and the subject of the imperative undergoes Agree with the interpretable 2nd person features in Jussive^o (note that I follow Zanuttini and others (e.g. Potsdam (1998)) in assuming that the subject of an imperative clause needs to be case-valued, even when null). Within this system, Zanuttini derives the various syntactic and semantic restrictions discussed above for English imperative subjects. This is so because the subject of the imperative must undergo Agree with higher head (above Zanuttini's XP hosting the subject); crucially, the head of XP in Zanuttini's system is unable to case and phi-Agree with the subject of the imperative clause. If we can assume that JussiveP = a CP without uninterpretable phi-features and XP = TP, as argued above, the fact that X^o cannot phi-agree with the subject (in English) is deduced within the Feature Transfer model.²⁰ However, imperative subjects would be free of special semantic and syntactic restrictions if the C^o that selected imperative T had uninterpretable phi-features, which would then undergo Transfer to T; I argue that this is exactly what occurs in AG, while this is prohibited in English.

²⁰ This proposal fits into a larger class of analyses regarding functional projections within imperatives. For example Rupp (1999) and Jensen (2003) propose a special imperative Infl/T and Bennis (2006) a special imperative C. Appealing to Feature Transfer makes it possible to deduce some of these properties.

To see how Feature Transfer can account for the difference between English and AG both with respect to subject restrictions and CP-embedding, consider another AG example with imperative verbs in both the matrix and embedded clause. Recall that a long-standing generalization among researchers on imperatives is that subjects of imperative clauses must be a sub-set of the addressee(s), a fact that is related to directive force in Zanuttini's analysis.

Herodotus (1.89)

(35) *katison* ... *phulakous, hoi* *legonton* ... *ta khremata*
station-2nd.sing.aorist.imp.active ... guards who collect-3rd.pl.present.imp.active ... the spoils

'Station ... guards, who [shall] collect... the spoils.'

In (35), an imperative is embedded in a relative clause. English does not allow such a construction, as (36a) shows; instead, English must use (36b).

(36a) *Station guards, who collect_{imp} the spoils.

(36b) Station guards, who shall/must collect the spoils.

The discourse context of (35) is also relevant; the subject of the matrix imperative (i.e. the addressee, or king of Persia in this case) and the embedded imperative ('the guards') are disjoint. More importantly, the subject of the embedded imperative is not present in the discourse context, since this passage presents an account of a private meeting between two individuals. Therefore, it seems impossible that the subject of the embedded imperative is addressee oriented under

traditional definitions (I return to the issue of addressee-orientation below, including with respect to a more relaxed definition of addressee-orientation proposed by Potsdam (1998)).

As discussed above, the contrast between (35) and (36a) strongly suggests that the relevant distinction between the two languages is syntactic, and does not reduce to language general pragmatic or semantic constraints. This is especially true to the extent that embedded imperatives in AG do not have performative/directive force, a claim which I further support empirically below; at the same time, I argue that performative/directive force is a necessary property of English sentences with imperative verbs (arguably the consensus view), and that this property of English imperatives should be related to the prohibition on embedding. Given this contrast, an adequate account of imperative syntax should offer an explanation as to why AG allows imperatives in embedded clauses, while English does not.

3.2 Learning the Distinction from Overt Evidence

As concerns the learnability of this difference between AG and English, it is standardly expected that child learners of English do not receive negative evidence such as (36a). Given this, the difference between the two grammars must be learned from other overt morpho-syntactic data that are available to the learner. Further, we should like to explain why English TPs that contain an imperative verb must be associated with a special left-peripheral head or phrase under the analyses offered by Han (2000), Zanuttini (2008), and the proposal in this paper.

I propose that the relevant morpho-syntactic difference between these two languages is the imperative paradigm, which, as discussed above, is relatively rich in AG and relatively poor in English. Because imperatives have 2nd person features *by default* within the directive force

analysis developed above, I argue that 'rich imperative morphology' in this context is defined as having overt and distinct bona-fide morphological imperative verb forms beyond the 2nd person.

In order to leverage the difference between the AG and English imperative paradigms within the theory of Feature Transfer, consider again the structure proposed in (33) for English root imperatives. Imperative T in (33) is selected by a C head without uninterpretable phi-features, but with both a Directive Force operator and interpretable 2nd person features; I will call this C_{dir} for ease of exposition. Because C_{dir} contains, by definition, a speech act operator, it may only appear in root clauses, following the conventional approach to speech act operators as discussed by e.g. Sadock and Zwicky (1985). AG imperatives, on the other hand, can appear in embedded CPs such as relative clauses and finite verbal complement clauses, which are headed by phi-complete C heads under Chomsky's independently motivated (2008) Feature Transfer analysis; for the sake of exposition, I will refer to a C head containing unvalued phi-features as $C_{[+phi]}$; I restate the two types of relevant C heads in (37).

(37a) C_{dir} = a C head with *interpretable* 2nd person features and a Directive Force operator

(37b) $C_{[+phi]}$ = a C head with *uninterpretable* phi-features (subject to Feature Transfer)

Maintaining Chomsky's intuition that the phi-feature properties of T are completely dependant upon the properties of the C° that selects it, I propose the following contrast, which distinguishes languages which disallow embedded imperatives (English) and those which allow them (AG).

(38a) $C_{[+phi]}$ cannot select imperative T (English)

(38b) $C_{[+phi]}$ can select imperative T (AG)

I also assume that 'imperative T' hosts at least some specification for mood and/or tense, either present or irrealis future.²¹ Note that in the context of Feature Transfer, we need not assume that T is devoid of *all* features in the lexicon, as Feature Transfer only deals with phi-features. In particular, if we were to assume that T is devoid of features altogether "it is not clear what would be the status of an LI [lexical item] with no features (one of the problems with postulating AGR and other null elements)" (Chomsky 2007).

Considering (38) from the perspective of learnability, suppose that the learner advances the most restrictive hypothesis about selection given the available data in accordance with the Subset Principle (see e.g. Wexler and Culicover, 1980). Accordingly, the child learner begins with (38a). For the case of the child learning English, there will be evidence that e.g. indicative finite T assigns nominative case, has a range of tense and aspect feature values, with some person and number agreement, with minimal restrictions on possible subjects; these facts motivate the hypothesis by the learner that indicative T in English is selected by $C_{[+phi]}$. Available data for the English imperative, a relatively common construction in child directed English (Cameron-Faulkner et al. 2003), is quite different. In English, imperatives have only one morphological form, and the subjects of imperative clauses uniformly have 2nd person features

²¹ Rivero and Terzi (1995) similarly argue that mood features are in INFL for Ancient Greek.

The current proposal may also help explain a further aspect of the analysis in Rivero & Terzi (1995); they, and others (e.g. Han 2000) have noted that imperative verbs in AG can appear in T, while these cannot in Modern Greek (which has only 2nd person imperatives), in which imperatives must raise to C. Feature Transfer may help explain this fact, since this analysis predicts that T in AG behaves like T in other non-imperative modalities, while T in Modern Greek has unique syntax. I thank an anonymous reviewer for this observation.

(see discussion of English imperative subjects above). In essence, there is no principled reason for child learners of English to reject the initial hypothesis (38a).

While the AG learner also starts with the most restrictive hypothesis (38a), the rich imperative paradigm in AG provides evidence that the restrictive hypothesis is in fact not correct, and the AG learner will revise their hypothesis to (38b). As a result, child learners of AG will develop a grammar in which imperative T patterns with finite indicative T, yielding the observation made by Rivero and Terzi (1995) that AG has "imperative V's that distribute like any other V" (they do not extend their analysis to embedded imperatives, however).

Consider (38) again in the context of learnability. Given the positive evidence available, the child learner either maintains (38a) or develops (38b). However, for the grammar which maintains the more restrictive (38a), such as English, morphologically impoverished imperatives and restrictions on embedding are the result of $C_{[+\text{phi}]}$ being unavailable as a possible selector for imperative T under the proposed Feature Transfer analysis. The grammar which adopts the less restrictive (38b), such as AG, will have imperative clauses which are more akin to other phi-complete structures from the perspective of syntactic distribution, and specifically with respect to syntactic embedding. To the extent that $C_{[+\text{phi}]}$ cannot select TPs containing imperative verbs in English-type languages, we have explained why imperatives in English require a special licensing head (or phrase, in the analysis of Zanuttini); because the licensing mechanism for indicatives, subjunctives, etc. is unable to apply to imperatives in English, the observation that all imperative verbs are associated with directive force (in English) is derived.

3.3 Syntactic licensing and effects for imperative interpretation in AG

The analysis presented above follows Zanuttini's (2008) intuition that a functional head on the left periphery is associated with imperative morphology in English, undergoing agreement with the imperative clause subject. I argued (contra Zanuttini) that this functional head is C_{dir} , which lacks uninterpretable phi-features but contains a Directive Force operator and interpretable 2nd person phi-features. I conjecture that C_{dir} is universally able to license imperative morphology, although Directive Force is restricted to root clauses, and that C_{dir} is in fact required to license imperative verbs in English.

I also propose that $C_{[+phi]}$ can license imperative morphology in some languages, but that this is postulated only by learners who are exposed to rich imperative morphology (with minimal restrictions on imperative subjects, discussed below). Because C_{dir} values imperative subjects for second person by default, I take 'rich' imperative morphology to mean an imperative paradigm with forms beyond the second person. Under this analysis, the only difference between (the adult-state grammar of) AG and English with respect to imperative is whether or not $C_{[+phi]}$ is available to select imperative T.

Crucially, the selectional differences defined in (38) refer only to phi-feature content of the selecting C° . This allows directive force to be associated with $C_{[+phi]}$ in clauses that are both directive and which exhibit agreement between T and the subject in Spec, TP. Although space limits me from a full discussion of this phenomenon, this recasts another intuition in Zanuttini (2008), who argues that while JussiveP is associated with all imperatives, JussiveP can also head clauses with non-imperative verbs but with directive interpretation. These include 'non-core' English imperatives, which are accepted by only some English speakers, as well as directives without imperative verbs; for example, in Italian directive sentences with quantificational or referential subjects, a subjunctive verb is required (39).

(39) Nessuno si muova!

nobody self move_{-subj.}

'Nobody move!'

As Zanuttini points out with respect to (39), "the verb is inflected; this makes it plausible to think that the sentence must have a functional head with person features ... blocking the Agree relation between it and the Jussive Head." In terms of the model developed in this paper, clauses like (39) are not headed by JussiveP, but rather by a CP headed by a C with both unvalued phi-features (subject to Feature Transfer) and a Directive Force operator: $C^{\circ}_{[+phi, +DIR]}$.

(40) represents licensing possibilities for AG and English imperatives.

(40a) English root imperative (C_{dir} selects T): $[CP C^{\circ}_{[-phi, +DIR]} [TP DP T_{imp} [VP \dots]]]$

(40b) AG directive imperative ($C^{\circ}_{[+phi, +DIR]}$ selects T): $[CP C^{\circ}_{[+phi, +DIR]} [TP DP T_{imp} [VP \dots]]]$

(40c) AG non-directive imperative ($C_{[+phi]}$ selects T): $[CP C^{\circ}_{[+phi]} [TP DP T_{imp} [VP \dots]]]$

(40a) represents all English imperatives, and accounts for the unique ability of quantificational and proper noun subjects to bind 2nd person pronouns in English only in case the main verb is an imperative. Because of the nature of the Directive Force operator in (40a), this clause cannot be embedded; this is essentially the same mechanism employed by Han (2000) to prohibit embedded imperatives in English and other languages. In addition, given that C_{dir} has interpretable 2nd person features which the subject must agree with in order to be case valued, (40a) also derives the addressee-orientation of imperative subjects.

(40b) represents directive imperatives in AG, for example the matrix clause imperative in (35). The mechanism by which the imperative verb is associated with directive force is essentially the same as for English imperatives. The prediction here is that (some) matrix imperatives in AG are both directive (i.e. performative, such that they cannot be called 'true or false' in the sense of Portner (2007)), but that these also have a syntax which is unremarkable from the perspective of the other moods, such as indicative. As discussed above, this is exactly the conclusion reached by Rivero and Terzi (1995) in their study of matrix AG imperatives.

In the context of prior literature on imperatives, much of which ties all clauses containing morphologically imperative verbs to directive force (see references above), (40c) makes the most interesting predictions with respect to syntactic and interpretative possibilities for AG imperatives (note that (40c) does not refer specifically to embedded contexts; i.e. this is not construction specific). Within the framework of Feature Transfer, (40c) predicts (at least) that AG clauses containing imperatives: (i) can be embedded, (ii) need not be directive in the relevant sense (even when in the matrix clause), and that subjects of these clauses (iii) need not be addressee oriented. Data bearing on prediction (i) appears above (3, 6-10, 35).

For prediction (ii) to hold, we should expect to see clauses with imperative verbs that are not directive, regardless of syntactic context (i.e. both embedded and not embedded). With respect to embedded AG imperatives discussed above, the intuition is that these are not directive, under standard assumptions that sentential force is a property of matrix clauses. Clearer examples of non-directive embedded imperatives can be found in the context of question/answer pairs (41) (I include first my own, more literal translations and also those of Potter, 1938).

Euripides, *Iphigenia in Tauris* (1201-1202)

(41a) Iphigeneia:

oistha nun ha moi genestho

know-2nd.sing.perf.ind.act now which-things for-me become-3rd.sing.aor.imp.middle

"Do you know which things must be done for me?"/"Do you know what to do for me now?"

(41b) Thoas:

son to semainein tode

you those give-pres.inf.active this

"You are to give this instruction."/"It is for you to make it known."

In (41a), an embedded imperative occurs in a relative clause, much like in example (8) above.

Despite the presence of an imperative, the sentence is interpreted as a question, as the response in (41b) shows. While developing a complete semantic analysis for imperatives that can cover these data is well beyond the scope of this paper, the imperatives in the embedded clauses discussed in this paper indicate that the imperative verb (or imperative verbal morphology) itself is associated with semantic features independent of a system of clause types (contra Portner 2004). Instead, it is likely that imperative verbal morphology is associated with a modal (possibly along the lines of Schwager 2006), which may interact with a directive force operator (obligatory in English, optional in AG), if present.

Possibly more intriguing are AG examples in which an imperative stands in a root clause but appears to lack directive force. Addressee-orientation may be used as a diagnostic of directive force; if the subject of an imperative is not addressee-oriented, it is reasonable to suspect that the imperative is not directive (see (35) for a non-addressee oriented imperative in

an embedded context). This should be possible for matrix AG imperatives (but not English), if $C_{[+\text{phi}]}$ can license imperative morphology. (42) confirms this prediction.

(42) Plato Symposium 201c

ego, phanai, o Sokrates, soi ouk an dunaimen antilegein, all' houtos

I say VOC Socrates me not APODOSIS be-able to-contradict but in-this-way

ekheto hos su legeis

be-3rd.sing.pres.imper.act as you say

'I, he said, see no way to contradict you, Socrates, but [let] it be this way as you say'

In this example, the 3rd person subject of the imperative (which is phonetically null and translated as 'it' in this example) refers to a philosophical point established in the context of a Platonic dialogue. Given this discourse context, it is hard to see how the subject of this imperative can be the addressee or subset of the addressee(s), under standard definitions, a result not predicted by Zanuttini's or Han's system, but possible under the current analysis.

While the subjects of the embedded imperative in (35) and matrix imperative in (42) are not addressee oriented under standard definitions, they are arguably addressee-oriented under the more relaxed definition of Potsdam (1998), who states that the addressee of an imperative must only be in a "control relationship" over the referent of the imperative subject, such that the addressee has "potential control" over the subject in some real-world domain (e.g. military, social, political). In the following example, the subject of the imperative does not appear to be addressee-oriented even under Potsdam's definition; in (43), the speaker uses a 3rd person

middle or passive (these forms overlap in AG) imperative, the subject of which refers to laws, which the speaker believes should be established (note that neuter 3rd person plural subjects regularly agree with singular verbs of all moods in AG (Smyth, 1920)).

(43) Plato, Laws (801e)

Oukoun nun, o xene, keistho tauta.

then now VOC foreigner.voc establish-3rd.sing.pres.imp.mid/pass these things

"Shall these points be established?" (Smyth, 1920)

The addressee in (43) is clearly *xene*, as established via overt vocative morphology, while the referent of the subject of the imperative, *tauta*, is in fact inanimate and 3rd person, neither addressee nor able to fulfill a command, which may explain why the translator chose to interpret this as a question.²² Indeed, according to Smyth (1920, p. 409), AG imperatives may "be used in questions ... assumptions (*hypothetical imperative*), to make a concession, or to grant opinion." Crucially, the vocative addressee *xene* 'foreigner' has no control relationship over the imperative subject *tauta* 'these things' which refers to laws in this discourse context; this is because a *xenos* in AG is defined as an individual with no political power in a given context. Data such as (35,42-43) suggest that AG imperatives may take a non-addressee-oriented interpretation in both embedded and root contexts. Additionally, while (35) shows that root imperatives in AG can be directive, they need not be so (42-43).

²² Given that (43) is a passive, it is certainly possible that the suppressed agent may be related to the imperative via something like Potsdam's (1998) Control Relationship, although this is less relevant for the analysis of imperative subjects in Spec, TP.

(41-43) confirm the predictions made by (40c), namely that AG imperatives pattern with verbs of other modalities with respect to constraints on syntactic context (embedding) and also interpretation (disassociation with directive force, lack of addressee-orientation). The model developed here explains why clauses with imperative verbs in English (and other languages) are often thought to be headed by a special left-peripheral element; the proposed analysis deduces this from morphological facts independent of interpretation. This proposal also differs from that of Jensen (2003), who locates feature-content in T for imperatives in English-type languages, such that T has interpretable 2nd person features. While this solution works for English and could, in principle, be extended to account for the difference between AG and English (whereby AG would have a both 2nd and 3rd person interpretable features), it lacks explanatory depth.

Instead, the current proposal explains the differences between AG and English by fully assimilating AG imperatives with verbs of other modalities in that language, within the theory of Feature Transfer; AG imperatives can be selected by C° which bears uninterpretable phi-features, according to the selectional differences in (38). Given the Feature Transfer model, this correctly predicts that AG imperatives should not have special syntactic properties (including with respect to embedding) or restrictions on imperative subjects, since these undergo Agree with T° . Alternatively, a C° bearing uninterpretable phi-features cannot select imperative T in English, a property I tied to the absence of rich person morphology in that language, parallel to the inability of a C° bearing uninterpretable phi-features to select non-finite T more generally within Chomsky's (2008) proposal. In English, only C_{dir} can license imperative morphology, which is in turn related to the prohibition on embedding, since C_{dir} is a locus of performativity. As discussed above, understanding the difference between the two types of grammars within the Feature Transfer model provides a mechanism by which the selectional differences between the two

languages can be learned, while also relating this property to more general (and not construction-specific) grammatical principles.

4 Additional cross-linguistic data and the status of 'imperatives' in the grammar

I turn now to some data outside of AG to show that other languages with rich imperative paradigms, while apparently few in number, allow embedded imperatives with similar properties to embedded imperatives in AG (i.e. in CPs without special restrictions on subject interpretation). While a full cross-linguistic typology is beyond the scope of this paper, the following cases have been chosen to show that imperative embedding (long thought to be cross-linguistically impossible) is in fact attested in languages which meet the 'rich imperative morphology' criteria set forth above. For example, Sheppard and Golden (2002) and Rus (2005) discusses cases of embedded imperatives in Slovenian. Data such as (44a,b) show that imperatives in this language behave similarly to those in AG.

(44a) To je avto, ki ga prodaj/prodajta/prodajte imprej. (Rus, 2005)

this is car which it sell_{2SG IMP/2DU IMP/2PL IMP} as soon as you can

'This is a car which you [must] sell as soon as you can.'

(44b) Zakaj te moj nasvet, da bodi pameten, tako jezi? (Sheppard and Golden, 2002)

why you my advice that be.imp.2sg sensible so angers

'Why does my advice that you [must] be sensible make you so angry?'

Like the AG cases, the embedded imperative in (44) appears to have minimal morho-syntactic restrictions, leading Rus to state that in Slovenian, "embedded imperatives are 'fully-blown'

clauses (CPs)" (Rus, 2005). Crucially for the analysis given here, Slovenian imperatives are relatively morphologically rich; imperatives are fully distinct from other moods in Slovenian and conjugate for 2nd person singular, 1st and 2nd person dual, and 1st and 2nd person plural, yielding 5 distinct morphological realizations. Given the correspondence between the Slovenian and AG data, I propose that Slovenian imperative morphology is sufficiently rich to allow embedding under C, specifically because of the overt 1st and 2nd person morphological distinctions. While Rus (2005) offers a primarily semantic account of (44), Sheppard and Golden (2002) suggest that "the presence of an imperative verb does not necessarily correlate with imperative illocutionary force," in agreement with the analysis proposed here, and instead locate the matrix C° as the location for sentential force, following Han (2000).

Two additional languages which have rich morphological paradigms include Kobon and Bhojpuri; to my knowledge, these languages have not been discussed with respect to imperative embedding.²³ Kobon (Trans-New Guinea) imperatives are also inflected for all persons, yet the data here are somewhat complex; according to Davies (1981), imperatives are not allowed in

²³ Hixkaryana presents an interesting additional case, because unlike AG or Slovenian, it has imperatives inflected for all persons and numbers (Derbyshire, 1979). However, according to Derbyshire (1979), Hixkaryana also has an overarching restriction against syntactic embedding; i.e. syntactic embedding is constrained for all modalities in this language (Derbyshire does not offer an explanation for this restriction). If this is indeed the case, the conclusion for the current proposal is that rich imperative morphology is a necessary but not sufficient requirement for syntactic embedding of imperatives as CPs.

embedded clauses. Yet, Davies (1981) includes several data points that pattern with (45) in his discussion of conditionals in Kobon.

(45) Nipe ning-nig g-ang ning-ang.

3RD-SING eat-PURPOSE do-imp.3rd.sing eat-imp.3rd.sing

'If he wants to eat it he can eat it.'

While Davies (1981) does not provide clausal bracketing for this example, it is not unreasonable, I think, that this example may be analyzed as (46), with an embedded *if*-clause forming the protasis of the conditional.

(46) [_{CP} [_{CP} Nipe ning-nig g-ang] ning-ang].

3RD-SING eat-PURPOSE do-imp.3rd.sing eat-imp.3rd.sing

'If he wants to eat it he can eat it.'

If this analysis of Kobon conditionals is on the right track, then Kobon in fact does allow syntactic embedding of imperatives and behaves as expected given the current proposal. Note also that, given the translation provided by Davies, it is likely that neither imperative is directive, as allowed given the current analysis.

Finally, Bhojpuri (Indo-Aryan) has been claimed to have rich imperative morphology. According to Zanuttini (2008) and Mauck (2005), Bhojpuri has imperatives inflected for at least 2nd and 3rd person, given (47). According to a native speaker consultant, (48) is also possible.

(47) Layke tini baje aave.

children three o'clock come.imp

'The children [must] come at 3 o'clock!'

(48) Tu David-se milai-hai je ihaan tini baje aaye.

you David-the met who here three o'clock come.imp

'Have you met David who [must] come here at 3 o'clock?'

To the extent that (47,48) are genuine morphological imperatives²⁴, (48) shows that Bhojpuri has imperative inflection beyond the 2nd person and that such imperatives are allowed in embedded contexts, supporting the hypothesis in this paper.

I will note finally that Modern Greek (2b) does not allow embedding of imperatives in the sense discussed above (Rivero and Terzi, 1995).²⁵ This is to be expected given the imperative paradigm in that language. While the Modern Greek imperative paradigm distinguishes voice,

²⁴ I add this qualification because the primary published grammar of Bhojpuri (Shukla, 1981) does not discuss imperatives inflected beyond the 2nd person; the author of this grammar was, however, the consultant for example (47) and others like it (see Zanuttini, 2008). According to Shukla (1981), Bhojpuri imperatives do inflect for different degrees of honorific.

²⁵ A reviewer also asks about Latin. Gildersleeve and Lodge (1895) divide Latin imperatives into First and Second Imperatives, only the latter of which has 3rd person forms, and which "looks forward to contingent fulfillment, and is chiefly used in laws, legal documents, maxims, recipes, and the like." To my knowledge, imperative embedding in the relevant sense (in clauses headed by a complementizer) has not been reported for classical Latin; imperative verbs can occur in logical protases, but these may be cases of parataxis (Gildersleeve and Lodge, 1895, p.379).

number, and aspect, it is restricted to the second person, although this is an overt morphological form (see Rivero and Terzi 1995 for discussion).

4.1 The status of 'imperative' in generative grammar

The analysis developed above raises several questions about the status of the category 'imperative' for generative grammar. First, if embedded AG imperatives are not performative, can these really be called imperatives at all? Second, is the analysis developed in this paper justified, given that the unexpected properties of AG imperatives may simply be an example of superficial morphological variation between languages? I addressed the latter question by presenting empirical evidence which shows that AG is not alone in allowing imperatives embedded in CP clauses. In each language, the imperative paradigm is morphologically rich in the sense developed above. To the extent that a cross-linguistic pattern exists, a goal of linguistic inquiry should be to explain this pattern. The analysis developed above, which includes a (in principle) falsifiable hypothesis based on learnability, does explain the cross-linguistic pattern.

As for the status of the category 'imperative,' this is often taken to be synonymous with the sentential force category 'directive.' If it were the case that all imperatives were directive, we might say that a 'force marker' (e.g. Directive Force operator, Jussive Phrase, etc.) is eliminable from a theory of imperatives (Portner, 2004). While I support the elimination of potentially redundant theoretical machinery, the data presented above suggests that such theoretical elimination is not justified under a wider cross-linguistic view.

While I have argued that imperatives are best understood as a morphological class, one way in which researchers have understood imperatives under a semantic or pragmatic definition is to postulate that 'imperative' is a sentence type (Sadock and Zwicky 1985, Portner 2004, 2007,

König and Siemund 2007). Understanding imperative as a sentence type, however, introduces an asymmetry in the relationship between morphology and sentence type, when other sentence types and verbal moods are considered. In particular, morphological moods such as *indicative* and *subjunctive* are typically understood as being distinct from sentence types, such as *declarative* or *interrogative*. Data does not support the conflation of the two categories; consider for example the question/answer pair (49) in German, in which both the question and answer contain subjunctive verbs.

(49) Q: Was hätten Sie getan? A: Ich würde verlassen haben.
what have.SUBJ you done I become.SUBJ left have
'What would you have done?' 'I would have left.'

The fact that subjunctive verbs can appear in both declaratives and interrogatives strongly suggests that subjunctive is not to be understood as a sentence type.

Understanding the nature of the imperative mood is somewhat more complicated in this respect, because imperatives seem to always be associated with directive force in the subset of the world's languages which have undergone more detailed formal analysis in this domain. A broader cross-linguistic view, however, shows that some languages, such as AG, Slovenian, and Bhojpuri, allow imperative verbs in embedded, finite clauses (which are, by hypothesis, unable to affect sentential force), and even in matrix clauses of different sentence types (42,43) (see also Sheppard and Golden, 2002). With this wider cross-linguistic perspective, I have attempted to offer an explanation, based on overt morphological evidence, for why English imperatives are consistently associated with directive force. Under the proposed analysis, 'imperative' now

patterns with the other verbal mood classes, eliminating a potential asymmetry in the grammar that would arise if 'imperative' represented the only verbal mood to also define a sentence type. Note that this understanding in no way precludes formal semantic and pragmatic analysis for imperatives or directive force (see e.g. discussion of Ninan (2005) and Portner (2007), above).

5 Conclusion

The analysis above is concerned with what may license imperative morphology, where the focus is on 'true' morphological imperatives. The answer to this question is somewhat novel in that it divorces imperative morphology from directive force²⁶; the latter is not in all cases necessary to license the former, although it may be a sufficient condition, in terms of selection. The fact that many prior analyses conclude that imperatives are only allowed in non-embedded contexts and are necessarily associated with directive force is, according to the view presented here, an artifact of the morphological properties of the languages that have previously been subject to more extensive formal analysis in this domain. The proposed analysis also informs the relationship between verbal morphology and semantic interpretation.

In addition to the AG data, a small but diverse cross-linguistic sample of languages supports the hypothesis put forth in this paper, that rich imperative morphology is a necessary condition for a language to allow embedding of imperative clauses in CP contexts, with minimal interpretive restrictions on the subject of an embedded imperative verb. This hypothesis was formalized in terms of the independently motivated theory of Feature Transfer (Chomsky, 2008), expanding the empirical domain of that theory while at the same time providing an account of embedded imperatives based upon overt morpho-syntactic features. Adopting Feature Transfer

²⁶ I thank Chung-hye Han for insightful discussion on this point.

additionally made it possible to state the difference between languages such as English and those such as AG with reference to selection and overt morphological properties which are known to vary among languages, thereby adding minimal complexity to the task of learning.

References

- Alexiadou, A., P. Law, A. Meinunger & C. Wilder. 2000. Introduction. In *The syntax of relative clauses*, ed. A. Alexiadou, P. Law, A. Meinunger & C. Wilder, 1-52. Amsterdam: John Benjamins.
- Austin, J. L. 1962. *How to do things with words*. Cambridge: Harvard University Press.
- Bennis, H. 2006. Agreement, pro and imperatives. In *Arguments and agreement*, ed. P. Ackema, P. Brandt, M. Schoorlemmer & F. Weerman, 101-123. Oxford: Oxford University Press.
- Beukema, F. & P. Coopmans. 1989. A government-binding perspective on the imperative in English. *Journal of Linguistics* 25:417–436.
- Cameron-Faulkner, T., E. Lieven & M. Tomasello. 2003. A construction based analysis of child directed speech. *Cognitive Science* 27:843-873.
- Chierchia, G. & S. McConnell-Ginet. 1990. *Meaning and grammar: An introduction to semantics*. Cambridge, MA: MIT Press.
- Cheng, L. 1991. On the typology of wh-questions. Ph.D. dissertation, MIT, Cambridge, MA.
- Chomsky, N. 2000. Minimalist inquiries: The framework. In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, ed. R. Martin, D. Michaels & J. Uriagereka, 89–155. Cambridge, MA: MIT Press.
- Chomsky, N. 2007. Approaching UG from below. In *Interfaces + recursion = language?*, ed. U. Sauerland & H-M. Gartner, 1-29. Berlin: Mouton de Gruyter.

- Chomsky, N. 2008. On phases. In *Foundational issues in linguistic theory: Essays in honor of Jean-Roger Vergnaud*, ed. R. Freidin, C. Otero & M. L. Zubizarreta, 133-166. Cambridge, MA: MIT Press.
- Crnic, L. & T. Trinh. 2008. Embedding imperatives. In *Proceedings of the 39th meeting of the North East Linguistics Society*, ed. S. Lima, K. Mullin & B. Smith, 227-238. Amherst: GSLA.
- Davies, J. 1981. *Kobon*. Amsterdam: Lingua Descriptive Studies.
- Den Besten, H. 1989. Studies in West Germanic syntax. Ph.D. dissertation, Katholieke Universiteit Brabant, Tilburg.
- Derbyshire, D. 1979. *Hixkaryana*. Amsterdam: Lingua Descriptive Studies.
- Downing, B. T. 1969. Vocatives and third-person imperatives in English. *Language and Social Interaction* 1:570-592.
- Farkas, D. & D. Zec. 1993. Agreement and pronominal reference. UCSC Linguistics Research Center Report 93-01.
- Gildersleeve, B. 1900. *Syntax of Classical Greek from Homer to Demosthenes*. New York: American Book Company.
- Gildersleeve, B. & G. Lodge. 1895. *Latin Grammar*. London: MacMillan.
- Goodwin, W. 1875. *Syntax of the moods and tenses of the Greek verb*. Boston: Ginn Brothers.
- Han, C. H. 2000. *The structure and interpretation of imperatives: Mood and force in Universal Grammar*. Outstanding Dissertations in Linguistics. New York: Garland.
- Han, C. H. 2001. Force, negation and imperatives. *Linguistic Review* 18:289-326.
- Iatridou, S. 2008. De Modo Imperativo. Ms. distributed at Ealing6, ENS.
- Iatridou, S. 2011. What is an imperative? Ms. distributed at the EGG summer school 2011.

- Jensen, B. 2003. Syntax and semantics of imperative subjects. *Nordlyd* 31:150-164.
- Katz, J. & P. Postal. 1964. *An integrated theory of linguistic descriptions*. Cambridge, MA: MIT Press.
- König E. & P. Siemund. 2007. Speech act distinctions in grammar. In *Language typology and syntactic description*, ed. T. Shopen, 276-324. Cambridge: Cambridge University Press.
- Koopman, H. 1997. Imperatives. Talk given at National Institute of Advanced Studies.
- Mauck, S. 2005. Notes on the typology of imperatives. Ms., Georgetown University.
<http://www.georgetown.edu/faculty/portnerp/nsfsite/nsfframeset.htm>
- Moro, A. 2003. Notes on vocative case: A case study in clause structure. In *Romance languages and linguistic theory 2001*, ed. J. Schrotten, P. Sleeman & E. Verheugd, 251–265. Amsterdam: John Benjamins.
- Obata, M & Epstein, S. D. 2008. Deducing improper movement from phase-based C-toT phi transfer; feature splitting internal merge. In *Proceedings of the 27th West Coast Conference on Formal Linguistics*, ed. N. Abner & J. Bishop, 353-360. Somerville, MA: Cascadilla Proceedings Project.
- Palmer, F. R. 2001. *Mood and Modality* (2nd edition). Cambridge: Cambridge University Press.
- Pak, M., P. Portner & R. Zanuttini. 2007. Agreement and the subjects of jussive clauses in Korean. In *Proceedings of the 37th meeting of the North East Linguistics Society*, ed. E. Efner & M. Walkow, 127-138. Amherst: GLSA.
- Pesetsky, D. & E. Torrego. 2007. The syntax of valuation and the interpretability of features. In *Phrasal and clausal architecture: Syntactic derivation and interpretation. In honor of Joseph E. Emonds*, ed. S. Karimi, V. Samiian & W. K. Wilkins. Amsterdam:

- John Benjamins.
- Platzack, C., & I. Rosengren. 1998. On the subject of imperatives: A minimalist account of the imperative clause. *The Journal of Comparative Germanic Linguistics*, 1:177–224.
- Platzack, C. 2008. Embedded imperatives. In *Imperative clauses in generative grammar: Studies in honor of Frits Beukema*, ed. F. Beukema & W. van der Wurff, 181-203. Amsterdam: John Benjamins.
- Pollard, C., & I. Sag. 1994. *Head-driven phrase structure grammar*. Chicago: University of Chicago Press.
- Portner, P. 2004. The semantics of imperatives within a theory of clause types. In *Proceedings of Semantics and Linguistic Theory 14*, ed. K. Watanabe & R. B. Young, 235-252. Cornell University: CLC Publications.
- Portner, P. 2007. Imperatives and modals. *Natural Language Semantics* 15:351-383.
- Potsdam, E. 1998. *Syntactic issues in the English imperative*. Outstanding Dissertations in Linguistics. New York: Garland.
- Richards, M. 2007. On feature inheritance. An argument from the phase impenetrability condition. *Linguistic Inquiry* 38:563-572.
- Rivero, M.-L. & A. Terzi. 1995. Imperatives, V-movement and logical mood. *Journal of Linguistics*. 31:301-332.
- Rizzi, L. 1996. Residual verb second and the wh-criterion. In *Parameters and functional heads: Essays in comparative syntax*, ed. A. Belletti & L. Rizzi, 63-90. Oxford: Oxford University Press.
- Rizzi, L. 1997. The fine structure of the left periphery. In *Elements of grammar: Handbook of generative syntax*, ed. L. Haegeman, 281-337. Dordrecht: Kluwer.

- Rognvaldsson, E. 1998. The syntax of the imperative in Old Scandinavian. Ms., University of Iceland.
- Rupp, L. 1999. Aspects of the syntax of English imperatives. Ph.D. dissertation, University of Essex.
- Rus, D. 2005. Slovenian embedded imperatives. In *Georgetown working papers in linguistics*, ed. C. Brandstetter & D. Rus, 153-183. Georgetown University.
- Sadock, J. & A. Zwicky. 1985. Sentence Types. In *Language typology and syntactic description, vol. 1: Clauses structure*, ed. by T. Shopen, 155-96. Cambridge: Cambridge University Press.
- Schwager, J. M. 2006. Interpreting Imperatives. Ph.D. Dissertation, Johann-Wolfgang-Goethe Universitaet zu Frankfurt am Main.
- Sheppard, M. & M. Golden. 2002. (Negative) imperatives in Slovene. In *Modality and its Interaction with the Verbal System*, ed. S. Barbiers, F. Beukema & W. van der Wurff, 245-259. Amsterdam: John Benjamins.
- Shukla, S. 1981. *Bhojpuri grammar*. Washington DC: Georgetown University Press.
- Smyth, H. 1920. *Greek grammar*. Cambridge, MA: Harvard University Press.
- Wexler, K. & P. Culicover. 1980. *Formal principles of language acquisition*. Cambridge, MA: MIT Press.
- Zanuttini, R. 2008. Encoding the addressee in the syntax: evidence from English imperative subjects. *Natural Language and Linguistic Theory* 26:185-218.
- Zanuttini, R., Pak M. & P. Portner. 2012. A syntactic analysis of interpretive restrictions on imperative, promissive, and exhortative subjects. *Natural Language and Linguistic Theory* 30:1231-1274.

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