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Imperatives*

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1. Introduction

Imperatives constitute one of the major clause types of human language; most if not all languages have a grammatically distinctive class of sentences which are associated closely with directive meaning. For example, in English we have (1):

(1) Ben, feed the bird!

The sentence is grammatically distinctive in that it lacks an overt subject (*Ben* here is a vocative) and employs a verb which is nothing but the verb stem (we can say it is the bare infinitive form), both properties which root clauses cannot usually have in standard English. And obviously the sentence is has directive meaning in that it is naturally used with the aim of getting the addressee Ben to feed the bird, and can barely be used with the aims associated with other clause types (Truckenbrodt 2006): one cannot use it to assert that someone will feed the bird, has fed the bird, or anything of the sort; one should use a declarative like (2) if that is one's communicative goal. Nor can one use it to ask whether the bird will be or was fed; interrogatives such as (3) stand ready for English speakers with that purpose.

(2) You will feed the bird.
(3) Will you feed the bird?

Although (1) cannot be used to assert or ask for information in the ways that (2)-(3) can, it is possible for (2) to be used more or less as (1) is. The declarative sentence here can easily be used with the aim of getting the addressee to feed the bird, and it is even possible for (3) to be used directively as well (in the situation where the addressee is supposed to feed the bird, yet he has apparently forgotten to).

While the description of imperatives just outlined is nothing surprising, it is worthwhile to bring it up explicitly, because the most basic issues for the semantic analysis of imperatives concern how to understand better and make precise the intuitive ideas which underlie it. That is, a student of imperatives should seek to answer the questions:

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1. How, in terms of fundamental syntactic properties, are imperative sentences grammatically distinctive, and why are they are distinctive in these ways?

2. What is it to be directive, and what semantic and pragmatic phenomena are connected to the directive nature of imperative sentences?

In order to answer these questions, the linguist (and the linguist here is often a philosopher on detail) aims to employ and improve existing theories to develop syntactic, semantic, and pragmatic analyses of imperatives. This chapter will be organized with reference to the issues which have animated recent theoretical work on imperatives, in particular the work whose main concern is semantics and pragmatics. It is divided into two main parts. In the first, I will provide an overview of those issues, and in the second I will sketch and discuss the main theoretical perspectives on the meaning of imperatives:

Section 2: Overview of issues in the semantics of imperatives
1. The imperative subject
2. Logical properties
3. Directive force
4. Complex sentences

Section 3: Theories of imperative meaning
1. Modal approaches
2. Dynamic approaches

2. Overview of issues in the semantics of imperatives

We can identify four main empirical areas of focus in recent research on imperatives. Three of these are often treated as if they are independent of one another: the semantic restrictions on the imperative subject, logical properties which distinguish imperatives from simple declarative sentences, and the nature of directive meaning. While it seems unlikely that most researchers believe that these aspects of the meaning of imperatives are completely separate, it has often proven useful to separate them for purposes for formal analysis, and in this section, we will follow the tradition. We will, to a large extent, look at them in sequence, since this will ease the presentation of key issues. In the next section of the paper, Section 3, as we discuss major theories of imperative meaning, it will be possible for us to see what kinds of integrated pictures of imperative meaning have emerged in semantics. The fourth main area of research, the treatment of complex sentences which contain imperatives as a part, has always been closely related to ideas about the nature of directive meaning (and occasionally to work on the imperative subject). These connections are what one

would expect from the perspective of syntactic and semantic theory, because when an imperative functions as a subordinate clause, what's at issue is mainly how it integrates with its matrix, and any ways in which this integration differs from other clause types are naturally thought to relate either to the meaning of the imperative as a whole (its directive nature) or to its subject (via theories of pronouns and pronoun-like elements).

2.1 The imperative subject

The subjects of imperative clauses have two important typological properties: they are associated in reference with the addressee, and they can be null. In terms addressee-reference, every language has imperatives whose subjects refer to the addressee, and in some languages it is rather difficult, and maybe even impossible, to find imperatives whose subjects are not associated with the addressee in terms of their meaning. As for the null-subject property, while not every language allows the absence of a phonologically realized subject (cf. Icelandic, Kaufmann 2012), the vast majority do, even languages which do not otherwise allow null subjects in root clauses. The addressee-reference and null-subject properties are linked, in that there are many languages, like English, where a null imperative subject is required to be second person, as in (4a), and imperatives whose subjects do not strictly refer to the addressee(s) must be constructed with an overt subject, (4b):

(4) a. Have a seat!
b. Maître d', someone seat the guests.[1] (Potsdam 1998)

To a large extent, scholars attempting to explain these two properties of imperative subjects have done so from the perspective of syntactic theory. We have a fairly significant literature trying to explain why imperative subjects can be null based on syntactic theories of null arguments, and these theories typically make use of the same mechanism which they exploit to license the null subject as the core of the explanation for why the subject must be associated with the addressee.

Basically every approach to the licensing of null arguments in non-imperative sentences has been applied to imperative subjects. Some scholars propose that the subject is a special null element with unique properties, others that it is on the receiving end of a control, binding, or agreement relation (see for example, Schmerling, 1982, Platzack and Rosengren 1998 (the imperative subject is a special element); Downing 1969, Han 1998 (control); Beukema and Coopmans 1998 (binding); Rupp 1999, 2003, Jensen 2003a, 2003b, Bennis 2006, Zanuttini

[1] A reviewer points out that with a negated example we could be more confident that the example is indeed imperative in form. To my judgment, *Maître d', don't anyone seat the guests!* is no less acceptable than (4b).

2008, Zanuttini et al. 2012 (agreement)). This is not the place to explore the details of all of these syntactic theories. What I think is important to point out, though, is a more general point discussed in Zanuttini et al. (2012): one cannot derive the special interpretive properties of the imperative subject solely from the fact (assuming that it is a fact) that the core function of imperatives is to direct the addressee to do something. Let us dwell on this point briefly.

One might think that, because imperatives function to direct the addressee to do something, they must have a subject which refers to the addressee, since that way the sentence will express a proposition to the effect that the addressee does something. In other words, the sentence will express a proposition which is a natural fit for what the sentence functions to do. But while one cannot deny that it is a natural fit in that case, there is no reason from this perspective why it must be the subject in particular which is second person. Why can (5a) not be expressed by (5b), since it would presumably be virtually synonymous with (5a) if it were grammatical?

(5) a. Be kissed by John! (Zanuttini et al. 2012)
b. *John kiss (you)!

Example (5) seems to show that there is something special to be said about the subject of English imperatives which distinguishes it by virtue of its syntactic status as subject.

The traditional view within formal linguistics is that the referent of the imperative subject must be "in a subset relation" to the set of addressees (Downing 1969), in a sense of "subset" according to which the quantificational subject of (6a), whose domain is the set of addressees, counts.

(6) a. Don't anyone leave!
b. Those children of yours keep out of my garden, or I'll set the dog on them!

Potsdam (1998) argues that against Downing's generalization, citing examples including (4b) and (6b). Kaufmann (2012) argues that Downing's generalization is basically correct for English (she thinks that (6b) involves a "marginal repair strategy") and strictly correct for German. However, there are reasons to agree with Potsdam that Downing's generalization is not accurate for English, and in any case it is not applicable across all languages. First, we have English examples like (4b) where the addressee (here, the maître d'), is to make the individual referred by the subject do something; Potsdam says that the addressee must be in a control relation with the referent of the subject. And second, we have examples in languages which have full agreement paradigms for imperatives in which the addressee is to make it the case that a proposition is

true, while having no apparent link to any agent referred to within the sentence:

(7) Tebulwa: sa:ph rahe! (Bhojpuri, Zanuttini et al. 2012)
table-nom clean-nom be-imp.3s
'Make it the case that the table is clean!' (lit. 'The table be clean!')

If the directive meaning of an imperative is something to the effect that the addressee should make it the case that the proposition expressed by the sentence is true, and there is no other restriction on imperative subjects than what can be derived from the directive meaning, examples like (7) should be possible in all languages. Again, this points to the crucial role played by syntax in explaining the properties of imperative subjects. And finally, we have third person imperatives which do not seem to target the addressee at all, like the Dutch (8):[2]

(8) Laten zij eerst maar eens hun excuses aanbieden. (Mastop 2011, (22))
Let.3pl they first PRT PRT their apologies offer-inf
'Let 'em first offer their apologies.'

The recent semantically sophisticated discussions of imperative subjects have tended to agree that the syntactic relation involved in explaining their interpretation (and probably their extended ability to be phonologically null) is agreement (Zanuttini 2008, Zanuttini et al. 2012, Kaufmann 2012). Setting aside forms like (8), the key idea is that there is a person feature [person: 2] on the imperative verb or a functional projection which enters an agreement relation with the subject, thereby making sure that the subject has this feature. In simple cases like (1) and (4a), the second person feature ensures that the subject refers to the addressee. More complex are cases with non-pronominal subjects like (9a) and quantified subjects like (9b):

(9) a. Boys be the cops and girls be the robbers! (Schmerling 1982)
b. Somebody help me!

Kaufmann's (2012) analysis of quantificational subjects shows how it is possible to integrate a semantics of person agreement with generalized quantifier theory; she provides a meaning for the person feature on which it makes sense to say that the subject of (9b) is second person. While Zanuttini et al. (2012) do not have as complete or precise an analysis of the semantics of the second person feature as Kaufmann does, they aim to explain examples like (7) which are outside of the range of Kaufmann's proposal. Focusing on similar constructions in Italian, they propose that the second person feature of imperatives is introduced

[2] The English *let*-imperative has a similar meaning, but it feels somewhat archaic. Absent wishes like *Rain!* may require a similar analysis; see section 2.3.

into the syntax in a different way than ordinary subject agreement. In English, the former precludes the latter, but in other languages it is possible for a clause to contain both the "special" (imperative) second person feature and the "regular" subject-verb agreement feature. In such instances, the subject agrees with the verb, and the special second person agreement affects the meaning of the clause, but not the meaning of the subject. The result is a sentence which is addressed to an individual responsible for making it true, but where that individual need not be the referent of the subject (see Platzack and Rosengren 1994 for a similar idea implemented in Minimalist syntax).

2.2 Logical properties

Imperatives are subject to two well-known logical puzzles: the phenomenon of free choice and Ross's paradox. Free choice is exemplified by the fact that sentence (10a) licenses the inference to (10b), and occurs not just with disjunction, but also with indefinites (especially special indefinites like *any*.) This phenomenon is not limited to imperatives, as shown by (11):

(10) a. Have an apple or a pear!
b. You may have an apple, and you may have a pear.
(11) a. You must/may talk to John or Mary.
b. You may talk to John and you may talk to Mary.

Free choice is not explained by standard theories of modal semantics derived from modal logic. For example, $\Box(p \vee q)$, interpreted as "every accessible world is in the union of the *p* worlds with the *q* worlds", does not automatically entail $(\Diamond p \wedge \Diamond q)$, "there is at least one accessible *p* world and at least one accessible *q* world", because (for example) it is compatible with the former that all of the accessible worlds are *p* worlds.

Ross's paradox (Ross 1944) is the closely related pattern whereby (12a) does not imply (12b), in the sense (which must be explained more precisely) that someone who uses the former in the normal directive way is not committed to the latter:

(12) a. Have an apple!
b. Have an apple or a pear!

Ross's paradox is not really a paradox, but rather just a logical property which is unexpected from the perspective of standard logic, where *p* entails *pvq*.

There is quite a large literature on free choice, and rather than attempting to survey it here, our focus will be on determining what imperatives in particular have to teach us about choice phenomena, and vice versa. (Some of the

important references are Aloni 2007, Aloni and Ciardelli 2011, Aloni and van Rooij 2004, Alonso-Ovalle 2006, 2008, Asher and Bonevac 2005, Barker 2010, Charlow 2011, Fox 2007, Franke 2011, Geurts 2005, Kamp 1973, Lassiter 2011, Mastop 2005, Menendez-Benito 2005, Portner 2011, van Rooij 2000, 2008, 2010, Ross 1944, Schultz 2005, Kaufmann 2012, Simons 2005, Zimmermann 2000.) A key issue concerns the relationship between free choice with imperatives and the parallel phenomena with modal sentences. Except for Portner (2011) and Charlow (2011), existing discussions of free choice imperatives have assumed that imperatives contain modals in their logical form, so that the logical form of (10a) is roughly $\Box(p \vee q)$, and the puzzle is identical to that of (11a), namely why it entails $(\Diamond p \wedge \Diamond q)$. These works each develops its theory of (11), and then assumes that the same theory will apply to (10) as well, perhaps with a little modification (Aloni 2007 is especially relevant to the issue of how to extend an analysis of modal free choice to imperatives).

There are two main issues to keep in mind if one wishes to explain imperative free choice by reducing it to an analysis free choice in modal sentences. One is that not all modal sentences show free choice effects; for example, Portner (2011) mentions the following:

(13) a. At the top of the mountain, you can find snow or ice to make drinking water. (*doesn't entail* You can find snow and you can find ice.)

b. A: Can any of the students speak Chinese or Japanese?
B: Chou Wei-han can. (*doesn't entail* Chou Wei-han can speak Chinese and he can speak Japanese.)

c. All of our students should take logic or stats. (*doesn't entail* All of our students can take logic and all of our students can take stats / All of our students can take logic and can take stats.)[3]

Therefore, if one is to explain free choice in imperatives by assuming that they contain a modal, one must make sure that it is the right kind of modal and in the right position. The second issue is simply the assumption that imperatives contain modals at all. As we will see in Section 3, one of the main distinctions among theories of imperatives is between ones that assume the presence of a modal and ones that do not. On the one hand, the existence of free choice in imperatives might be seen as an argument for the modal theory, but on the other, the reasons to deny the modal account throw into doubt an understanding of free

[3] Magdalena Kaufmann (p.c.) points out that an imperative version of this, *Take logic or stats, depending on whether you're a syntax student or phonology student*, fails to show free choice. This is so, but only when the *depending on…* phrase is present, and this phrase can remove the free choice inference even for (10) and (11). These points suggesting that *depending on* affects the interpretation of disjunction. The semantics of *depending on* is an interesting topic which may be relevant to future work on choice inferences.

choice which relies on the presence of modal operators.

I would like to highlight a couple of points which are important to understanding the status of free choice with imperatives. First is the fact that imperatives are very strongly disposed to show free choice effects. In particular, imperatives which gives orders or commands (such as (10a)) seem to always imply choice (i.e., (10b)). Admittedly, Aloni (2007) assumes that such imperatives do not always give rise to a free choice inference, but I find her example (14), drawn from Rescher and Robison (1964), unconvincing. (In any case, Aloni admits that the reading is marginal.)

(14) TEACHER: John, stop that foolishness or leave the room!
(John gets up and starts to leave.)
TEACHER: Don't you dare leave this room!

It seems to me that the teacher's first utterance does imply that John is permitted to leave the room. That's why he gets up to leave. Of course, the teacher did not grant this permission sincerely, and when John turned out to be more impertinent than expected, it had to be retracted, but this does not cast doubt on the fact that, at the literal level, permission was granted. Note how odd it would be for the second utterance to be replaced with "Why are you leaving?"

In contrast to this situation with order-type imperatives, Kaufmann (p.c.) points out that imperatives which give advice or suggestions (goal-oriented, or teleological, imperatives) can fail to license a free choice inference. She gives the following example:

(15) A: How do I get to the city center?
B: Take the U4 or U5, I can't remember which.

It is not well understood why order-type imperatives differ from advice/suggestions imperatives in this way. (We will discuss the various functions of imperatives further in section 2.3.)

In contrast to the case with imperatives, all types of modal sentences, including deontic ones, can fail to show free choice, as seen in (13). Moreover, even those modal sentences which tend to display choice readings, like (11a), have readings where they do not. For example, as is well known, if (11a) is followed by *but I don't know which*, it does not license the inference to (11b). Following (10a) with *but I don't know which* is distinctly odd, unless one switches from a order-type reading to a suggestion-type reading.

The second point, mentioned or implied in some of the literature (e.g., Kamp 1973, Geurts 2005, Aloni 2007, Portner 2011, Franke 2011), is that free choice is

linked to the sentence having a particular pragmatic status.[4] Portner (2011) describes this as the sentence being "performative", in the sense that the utterance changes the state of the discourse so as to put in place the requirement which is expresses, while Franke describes it as the speaker having authority over the truth of the statement. It seems to me that a modal sentence used performatively in this sense cannot fail to give rise to a free choice inference. Note that none of the examples in (13) are performative, while those in (11) are hard to read in a non-performative way. This observation is relevant here because root imperative sentences are typically performative, and as far as I can tell, deontic imperatives are invariably so. These points suggest that performativity is a crucial ingredient in explaining free choice inferences.

We should note a dispute between Barker (2010) and Kaufmann (2012), on the one hand, and Portner (2011), on the other, about whether Kamp (1973) has identified cases of performative modal sentences which lack the free choice interpretation. I believe that performative modal sentences never have a reading on which they fail to license the choice inference; but in any case, if there is such a reading, it is certainly marginal or in need of strong contextual support in a way that the non-choice interpretations of the examples in (13) are not, and this fact in itself would have to be explained. Overall, the picture that emerges is that both imperatives and performative modal sentences give rise to free choice readings, either universally or with some very rare exceptions. The correlation suggests that imperatives show free choice effects for the same reason that performative modals sentences do, and that either performativity gives rise to, or at least very strongly prejudices, free choice.

Given the connections among the directive (or performative) meaning of imperatives and their licensing of free choice, we can now see more clearly what is at stake for theories of free choice generally. On the one hand, one might say that imperatives are modal sentences, that these modals are typically performative, and that free choice follows from their being modal and performative. This is the approach of Kaufmann (2012), for example. On the other, one might attribute free choice to the performative meaning directly, making it irrelevant whether that performativity is connected to a modal operator or not. This is the approach of non-modal theories of imperatives like Portner's (2007, 2011) and Starr's (2010), as well as Charlow's closely related analysis (according to which *or* in these examples is a speech-act level operator).

Having spent some time on free choice, let us return briefly to Ross's paradox. Most recent discussions of Ross's paradox have assumed that it is to be

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[4] Note that there is no claim that only performative sentences have free choice readings. The suggestion here is that, *pace* Kamp, all performative modal sentences (like all imperatives), along with some non-performative modal sentences, do so.

explained by the same ideas which account for free choice, and with good reason: (12b) is not implied by (12a) simply because (12b) gives rise to the free choice inference, and so it implies that the addressee may have a pear, something which is not automatically permitted by (12a). The additional piece needed to account for Ross's paradox is a formal definition of the implication relation under which (12a) is understood not to imply (12b). We find a closely related set of definitions in papers by Kamp (1973: "p-entailment"), Veltman (1996: "validity$_2$"), Mastop (2005, 2011: following Veltman), and Portner (2011: "warrant"); see also van Rooij (2000), Aloni (2007), and Aloni and Ciardelli (2011) for discussion. Let us consider Veltman's and Portner's definitions:

(16) a. An argument is valid iff updating any information state s with the premises $\phi_1,..., \phi_n$ in that order, yields an information state in which the conclusion ψ is accepted. Formally: $\phi_1,..., \phi_n$ $\Vdash$ ψ iff for every state s, s+[ϕ_1]...+[ϕ_n] leads to a context s' such that s'+ψ=s'. (modified from Veltman 1996)

b. For any sentences *p*, *q*: *p warrants q* $=_{def}$ for every context c (in which c+*p* is defined), c+*p* = (c+*p*)+*q*. (Portner 2011)

The precise status of the concepts defined in (16) depends on the broader semantic/pragmatic framework in which + is defined. Veltman's approach is classic dynamic semantics, and so validity in (16a) is a relation among sentence meanings as they are conceived in that theory. Portner's framework, in contrast, involves static sentence meanings and a conventional, pragmatic linking principle (discussed in section 2.3 below) which connects those meanings to contextual update. In either case, though, the same intuition holds: (12a) does not imply (12b) because c+(12a) does not necessarily represent a context in which the addressee is permitted to have a pear (pears haven't even been mentioned), in contrast to (c+(12a))+(12b).

2.3 Directive Force

So far in this overview, we have made use of the commonplace observation that imperative sentences have directive meaning. In a nontechnical sense, this observation simply covers the fact that it is easy and typical for imperative sentences to be used to try to get someone (the addressee, normally) to take some non-linguistic action. In this section, we will examine ways in which semanticists have attempted to make more clear their descriptions of this directive meaning, and to provide precise formal analyses of it.

2.3.1 The concept of force in imperative semantics and syntax

Discussions of directive meaning are often couched in terms of the concept of "force", in particular the speech act theory notion of illocutionary force and the related notions of sentential force or sentence mood. Illocutionary force refers to the type of communicative effect which a speaker intends to achieve with the use of a sentence; as such, it is tied to utterances, tokens or uses of linguistic forms. However, illocutionary force groups together linguistically diverse grammatical forms, such as (1)-(3) when each is used with the reasonable intention of getting Ben to feed the bird, and thus does not capture the intuition that there is some basic meaning of directivity which distinguishes imperatives from interrogatives and declaratives (e.g., Chierchia and McConnell-Ginet 1990, Reis 1999, Zanuttini and Portner 2003, Schwager 2005b, Kaufmann 2012). The concept of sentential force is useful for naming the canonical function which a sentence has in virtue of its grammatical sentence type. In terms of sentential force, we can define directivity as a property that a given sentence has if it is a member of a sentence type with the canonical function of directing someone to do something. On this way of talking about things, we can say that all imperatives have directive sentential force. It may also be that only imperatives (and related forms like exhortatives) are directive in their sentential force, provided that we exclude from relevance "actions" like giving an answer (which the use of an interrogative typically seeks).

This type of terminological refinement can be helpful for some purposes, but in the end the correct theory of the meaning of imperatives (and other sentence types) will provide the correct definitions of concepts like directive meaning and force. In order to develop a better theory of this kind, we must not only think about speech acts from a philosophical perspective. We must also isolate the important issues of linguistic analysis on which semantic and pragmatic theories in this domain can be judged. The following are two of the fundamental linguistic questions:

> **The conventionalization question**: How do imperative sentences come to be associated with directive sentential force? In particular, what are the linguistic principles that associate certain grammatical representations, namely those which we identify as imperatives, with directive force, rather than with some other force, or no force at all?
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> **The representation question**: What is it to direct someone to do something? In particular, how do we represent what occurs when a successful act of direction occurs?

Classical speech act theory provides a familiar answer to the first of these questions (Searle 1969, Searle and Vanderveken 1985, Vanderveken 1990, 2002). Conventionalization is due to the presence of a force marker which expresses a particular kind of directive illocutionary force; this imperative force

marker is assumed to be part of a paradigm of operators which combine with a propositional sentence radical and associate it with an illocutionary force.[5] (It should be noted that the basic concepts of speech act theory, in particular those of the locutionary, illocutionary, and perlocutionary acts, do not imply that there is such a thing as a force marker combining with a forceless sentence radical, but the canonical version of speech act theory has developed that way.) However, speech act theory does not answer the representation question in any clear way. Obviously, according to speech act theory, a successfully used imperative can place the addressee under an obligation; however, what it is to be under an obligation is not itself explained. It seems to me that this may be so because classical speech act theory makes the assumption that "being under an obligation" is a social fact the further analysis of which is not relevant for understanding the semantic and grammatical properties of imperatives.

Much work on imperatives within formal syntax has made use of the concept of a force marker. This link between speech act theory and syntactic representation goes back to the performative hypothesis, but it has been reformulated in various ways as syntactic theories have changed. For example, Rivero and Terzi (1995), Rizzi (1997), and Han (1998) propose that the force marker is an abstract feature or operator present in the upper reaches of the imperative's structure, and the syntactic behavior of this element are used to explain some of the distinctive properties of imperatives' syntax. According to Rivero and Terzi, in some languages the imperative feature is in a high (C-, or complementizer-) position, and the verb is required to raise to the feature, explaining why the verb cannot be negated and why it must precede pronominal clitics in these languages.

(17) a. *Den diavase! (Greek, Rivero and Terzi 1985)
neg read.imp
b. Diavase to!
read.imp it
'Read it!'

However, as pointed out by Zanuttini and Portner (2003), the relevance of this work to our understanding of directive force is limited by the fact that it has focused only on a subset of morphologically distinctive imperatives. In Greek, for example, the meaning of a negative imperative, which cannot be expressed as in (17a) with a verb in the imperative verbal mood,[6] is instead expressed with an

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[5] Kaufmann and Poschmann (2013) present evidence that colloquial German allows wh-interrogatives with imperative morphology and the associated directive meaning. They point out that this combination of interrogative and imperative meaning is difficult to account for on the view that sentences are typed through the presence of an operator which assigns them their illocutionary force.

[6] Verbal mood must be distinguished from sentence mood, or this statement will not make sense. Imperative verbal mood is a morphosyntactically distinct verb

indicative verb form:

(18) Den diavases!
neg read.indic
'Don't read!'

Other languages use other verbal forms in cases where the imperative verbal mood cannot be used. For example, Italian uses the infinitive for negative second person singular imperatives:

(19) a. *Non telefona le! (Italian, Zanuttini and Portner 2003)
neg call.imp her
b. Non telefonarle
neg call.inf-her
'Don't call her!'

Example (19b) is just as much an imperative by semantic/pragmatic criteria as a sentence with the imperative verbal mood. Therefore, if an abstract feature or operator is to explain the distinct syntactic behavior seen in (17), this feature cannot be the sole expression of directive illocutionary force.

The syntactic diversity of imperative sentences within languages like Greek and Italian shows that there is no simple correlation between grammatical form and the imperative speech act type. This fact poses a problem for speech act theory's approach to the conventionalization question. As pointed out by Zanuttini and Portner (2003), it seems that it is not possible to identify any discrete piece of the morphosyntactic representation with the force marker. If force marker approach to the conventionalization question is to have a chance of working at all, it will have to take a more abstract view of grammatical structure, one according to which different aspects of form can serve as force marker in different circumstances. In other words, it would need to propose something like the following: in Italian force can be expressed either by imperative verbal mood

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form which is analyzed as being part of the regular mood paradigm (including also, for example, indicative and subjunctive). In languages which have it, imperative verbal mood would typically be used in the most basic imperative sentences (such as second person singular, socially neutral, non-negative imperatives), and perhaps others as well. Imperative sentence mood refers to the grammatical form or forms which distinguish imperative sentences as a clause type, thereby distinguishing them from declaratives and interrogatives. Examples like (18) and (19b) exemplify imperative sentence mood but not imperative verbal mood. To put is simply, imperative verbal mood is opposed to indicative and subjunctive (perhaps among others), while imperative sentence mood is opposed to declarative and interrogative (perhaps among others). See Han (1998) and Zanuttini and Portner (2003) for discussion.

or by a combination of root position, infinitival verb form, and negation. (Actually, there are other combinations as well, for polite and third person imperatives, so matters would be even more complicated.) Although mainly focused on interrogatives, Ginzburg and Sag's (2001) construction-based analysis of sentence types contains some relevant ideas.

2.3.2 Recent approaches to the analysis of directive meaning

Recent work on imperative meaning has tried to answer not only the conventionalization question, but also the representation question. While there are several ways to classify this work, one important distinction lies between accounts according to which the basic function of an imperative is to make a factual claim, and those according to which it is to modify a representation of what is permissible. According to the first approach, directive meaning is represented using the same tools as ordinary, assertive declarative sentences, while according to the second, it is represented using some new, imperative-specific tools.

2.3.2.1 Approaches which answer the representation question using the same tools as assertion

The most well-known approach to representing information in discourse comes to us from the work of Stalnaker (1974, 1978). According to Stalnaker, two basic aspects of the meanings of declarative sentences, presupposition and assertion, can be better understood in terms of an idealized model of the conversation, the common ground, representing the mutual presuppositions of the participants in the conversation. Assertion is then to propose the addition of a proposition (in the simplest case, the proposition expressed by a sentence) to the common ground, and a successful assertion is the case where the proposition is in fact added. (Often we work with a related concept, the context set, the intersection of the propositions in the common ground. The context set is the set of worlds which could be actual, as far as the mutual presuppositions of the conversation go.)

(20) Assertion (with respect to a common ground or context set)
- a. The successful assertion of p in a conversation with common ground cg results in a new common ground $cg' = cg \cup \{p\}$.
- b. The successful assertion of p in a conversation with context set cs results in a new context set $cs' = cs \cap p$.

(20a) is simple and well-known, and (20b) is just a corollary, but the analysis of assertion in this model is worth laying out explicitly in order to render the comparison with an analysis of imperatives more perspicuous. Note that Stalnaker's model is designed to answer the correlate of the representation

question for assertion ("What is it to assert something? In particular, how can we represent what occurs when a successful act of assertion occurs?").

In light of Stalnaker's model, we can understand the distinction between two ways of answering the representation question for imperatives as a distinction between approaches which represent directive meaning in terms of the common ground (or something similar), and those which represent it in terms of something in addition to or more complex than the common ground. The first approach is best represented by the work of Kaufmann,[7] while the second is developed in a tradition which includes the work of Lewis, Han, Portner, and others. We will examine each in turn.

According to Kaufmann, the directive meaning of an imperative is represented by adding to the common ground a modal proposition. For example, if successfully used, (1) would add to the common ground the proposition that Ben should feed the bird. If one assumes Stalnaker's model of assertion, this is probably the simplest approach to the representation question possible. However, it opens up an obvious issue. The successful assertion of (21) also adds the proposition that Ben should feed to bird to the common ground, and yet (1) and (21) are not the same in meaning.

(21) Ben should feed the bird.

Specifically, while (1) only has a directive meaning, (21) has both a directive and a descriptive meaning. On the latter interpretation, the sentence can be described as true or false, whereas (1) and the former reading of (21) cannot be. Moreover, adding a proposition to the common ground would normally be understood as providing a model of the descriptive meaning, in as much as this is the same kind of effect on the common ground as is provided by the assertion of an ordinary, non-modal declarative.

The above discussion shows that, while Kaufmann provides a simple answer to the representation question, she must do some work to answer the conventionalization question. While the details are complex, there are two main things I'd like to point out here about her strategy. First, she attempts an interesting integration of Stalnaker's common ground with ideas from classical speech act theory, whereby the essential effect of a speech act is modeled in terms of the common ground. In this way, she aims to provide the answer to the representation question within the framework of speech act theory which classical speech act theory failed to provide. And second, she aims to solve the conventionalization question by proposing that (1) is in fact synonymous with (21) except for the fact that imperatives "come with an additional presuppositional

[7] Much of Magdalena Kaufmann's work was published under the surname Schwager.

meaning component that makes them unfit for assertive use and shields the truth value from being conversationally accessible" (Kaufmann 2012, Sect. 2.4). It is not easy to craft presuppositions which give the desired effect while maintaining the spirit of the idea that the effect of directive meaning is represented in the common ground, however. Starr (2012) argues that the difference between (performative) *should* and the imperative in his example (22) is a problem for Kaufmann's strategy of identifying the meaning of an imperative with that of *should* plus presuppositions that guarantee performativity:

(22) a. We all know you are going to cheat, but you shouldn't.
b. #We all know you are going to cheat, but don't!

Charlow (2010, 2011) likewise criticizes Kaufmann's strategy of answering the conventionalization question through a set of special presuppositions, and he also echoes some aspects of Portner's (2007) critique of her general approach to the representation question.

Setting aside these doubts about the crucial presuppositional meaning component, we can examine Kaufmann's strategy for modeling the force of imperatives. It may help to look at a simplified explanation of (1) in terms of Kaufmann's theory, in order to see how she proposes to represent directive force within the framework of common ground update. Kaufmann's modal analysis employs the framework of Kratzer (1981, 1991), so that a modal sentence is interpreted with respect to two modal parameters, the modal base and ordering source. For an imperative or other "priority" modality (such a deontic modality), the ordering source is a function g which (applied to a given world w and time t), returns a set of relevant priorities. In the case of (1), these would be some set of requirements to which Ben is subject in w at t, perhaps those imposed by his parents.

Kaufmann's theory assumes an ordering source which represents the fact that, for any world w and time t, Ben feeding the bird is not in the set of requirements at w and t if a parent has not told Ben to feed the bird in w by t, and is in the set of requirements at w and t if a parent has told Ben to feed the bird in w at or prior to t (and, let's say, Ben has not yet fed the bird in w between the time he was told to do so, and t). Given this, according to the theory, when it is uttered at time t, (1) serves to exclude from the context set worlds in which it is not necessary at t for Ben to feed the bird. Given the way the ordering source has been described, it is necessary at t for Ben to feed the bird if Ben's feeding the bird is one of the requirements returned by the ordering source at t. So, we end up excluding from the common ground worlds for which the ordering source does not return, after t, a set including the requirement that Ben feed the bird.

This description of the dynamics of an imperative may seem a bit complex, but

what should be attended to is the fact that Kaufmann aims to have the imperative get the proposition 'Ben feeds the bird' into the deontic ordering source by excluding from considerations worlds at which the ordering source does not include that requirement. So, prior to the use of the imperative, it had to be represented in the ordering source that the parent might order *Ben, feed the bird!* specifically at t. Obviously, the same point goes for any other requirement that might have been or might be imposed. Thus, the strategy places a heavy burden on conversational backgrounds by requiring that those which could serve as ordering sources for imperatives anticipate all possible evolutions of the priorities they represent. If one's intuition is that the imperative "creates" or "adds" a requirement for Ben to feed the bird, this intuition is only indirectly represented by Kaufmann's analysis.[8]

Somewhat similar to Kaufmann's analysis is the proposal of Condoravdi and Lauer (2012). For them (1) means roughly "I have an effective preference that you Ben feed the bird", which is to say that the speaker is committed to acting in ways which will get the addressee Ben to feed the bird. (This is the same meaning as the performative use of *I order you, Ben, to feed the bird.*) In addition, according to the proposal, imperatives presuppose that the speaker prefers not to take any further action to get Ben to feed the bird, and so prefers that the addressee take full responsibility for fulfilling the preference mentioned by the speaker. Furthermore, in the normal type of context in which an order like (1) would be used, the speaker assumes that declaring these preferences is sufficient reason for the addressee to form an effective preference of his or her own to feed the bird. Seen this way, Condoravdi and Lauer's analysis is like Kaufmann's in using a modal operator: "I have an effective preference that", parallel to Kaufmann's "should". It differs from Kaufmann's crucially in that the role of the addressee in the meaning – the fact that imperatives direct *the addressee* to do something – is derived indirectly, through pragmatic reasoning. In addition it should be noted that they close the paper with a discussion of the possibility of expressing their ideas in a framework where imperatives constrain the speaker's effective preferences directly (committing to an effective preference that Ben feed the bird), and if recast that way, their proposal falls under the second approach to the representation question, discussed next.

2.3.2.2 Approaches which answer the representation question using tools designed for imperatives

[8] Kaufmann might, of course, be open to an imperative having a direct effect on the ordering source beyond the assertion-like effect described above, but if such an effect were regular and conventional, adopting it would be to accept the claim of the opposing approach to directive force. That is, it would be to accept that imperatives affect a discourse component other than the common ground.

Lewis (1979) initiated the second major approach to the representation question,[9] and I will briefly provide a summary of his ideas, and then outline how later work in the tradition developed it further. Lewis defined a toy language game involving basic (ϕ), command (!ϕ), and permission (¡ϕ) sentences spoken among three characters, the Master, Slave, and Kibitzer. The truth conditions and pragmatic effects of these sentences are represented within two discourse components, the sphere of accessibility and the sphere of permissibility. The former arises from a kind of historical accessibility relation: the sphere of accessibility at a time and world <t,w> is the set of worlds which could be actual, given the history of w up to t. The sphere of permissibility arises from a kind of deontic accessibility relation: the sphere of permissibility at <t,w> is the set of worlds which are permissible at t in w. The sphere of permissibility is not given a more contentful definition, because its shape and evolution are to be explain through the rules of the game; however, its role in the game is crucial: the Slave must make sure that the actual world is in the sphere of permissibility at all time. The truth conditions of sentences are defined as follows:

(23) a. A function f assigns to each basic sentence ϕ a truth value at each <t,w>.
b. !ϕ is true at <t,w> iff, for every world w' which is both accessible and permissible at <t,w>, ϕ is true at <t,w'>.
c. ¡ϕ is true at <t,w> iff, for some world w' which is both accessible and permissible at <t,w>, ϕ is true at <t,w'>.

The key insight of Lewis's paper is that the effects of command sentences can be represented by shrinking the sphere of permissibility: when the Master utters a command sentence, the sphere of permissibility should shrink of make ϕ true.

(24) For any world w, if P is the sphere of permissibility just before time t in w, and !ϕ Is uttered by the Master at time t in w, the sphere of permissibility at t in w becomes $P \cap \{w : \phi \text{ is true at t in w}\}$.

A significant portion of Lewis's paper is devoted the fact that there is no obvious analogue of (24) for permission sentences. A principle like (25), in which intersection is replaced by union, will not do, because this would mean that ¡ϕ (e.g., *Take tomorrow off!*) permits anything compatible with ϕ, such as killing the Master.

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[9] Before Lewis, van Fraassen (1973) had proposed that the semantics of *ought* sentence could be given in terms of the set of imperatives in force at a point in time, and he even suggested an understanding of the function of this set based on the ordering over possible worlds it would generate (foreshadowing the ideas of Portner, Charlow, Starr, and Condoravdi and Lauer discussed below). However, this paper seems to have been mostly overlooked in linguistically-oriented work since Lewis.

(25) For any world w, if P is the sphere of permissibility just before time t in w, and ¡ϕ Is uttered by the Master at time t in w, the sphere of permissibility at t in w becomes $P \cup \{w : \phi$ is true at t in w$\}$.

Lewis points out that what is needed in order to solve this problem of permission is a notion of comparative permissibility. The problem with (25) is that it enlarges the sphere of permissibility too much; what we want is to enlarge the sphere of permissibility to includes some worlds in which ϕ is true, but only the most permissible (or, perhaps more intuitively, least antecedently impermissible) such worlds. This means that, when the Master says *Take tomorrow off!*, the Slave is not permitted to kill the Master, because worlds in which she does are less permissible than other worlds in which she takes tomorrow off. What is needed, then, is a mechanism for determining comparative permissibility at a given point in the evolution of a conversation.

We find important clues for how to solve the problem of permission in the work of Han (1998), Mastop (2005, 2011), and van Rooij (2000). Han has the important insight that the analysis of directive meaning requires keeping track of the set of sentences which have been directively used. She proposes that the directive meaning of an imperative should be represented by adding the proposition expressed by the imperative to the addressee's "plan set", a set of propositions which "specifies the hearer's intentions" (Han 1998, p. 4). However, Han's ideas are left at an intuitive level, and she neither connects them to any theory of discourse meaning (like the works of Stalnaker or Lewis cited above) nor specifies them in a formally precise way. Mastop (2005, 2011) has a similar idea to Han's, and implements it formally in a dynamic logic; he proposes that imperatives have a primitive semantic type not based on propositions, and that the force of an imperative is to update an "action plan", similar to Han's plan set. However, he does not develop in detail the crucial link between the formal model of the action plan and the actions an agent takes. Specifically, there is a difference between not taking an action in your personal plan, and not taking an action which is in your plan because you agreed when someone told you to do it, and this difference is not explained by Mastop's (2011) theory. Turning to van Rooij (2000), he develops an analysis of permission sentences designed to solve Lewis's problem; his insight is that we can formally model the evolution of a comparative permissibility ordering among worlds (or as he calls it, comparative reprehensibility) by checking how many of a designated set of propositions relevant to permissibility are true in each world. However, van Rooij is not clear on what this designated set of propositions is -- at one point, he suggests it could be the set of all atomic propositions (van Rooij 2000, fn. 28), while at another, he says it is contextually determined and constant through a conversation (fn. 29). Thus, we are left without a clear analysis of permission which can be applied to linguistic data.

Portner (2004, 2007) builds on the insights of Lewis, Han, and van Rooij. Like Lewis, he presents a model with two discourse components: in place of the sphere of accessibility, he utilizes the common ground, and in place of the sphere of permissibility, he uses the To-do List function. The To-do List function T assigns to each conversational participant x a To-do List, T(x), a set of properties which is then used to define an ordering of worlds $\leq_{T(x)}$. The To-do List is similar to Han's plan set, but has the status of a discourse object like the common ground, and the ordering relation is analogous to van Rooij's comparative represensibility. Portner's proposes that the representation question can be answered by postulating that a successfully used imperative adds its content to the addressee's To-do List in a way parallel to assertion in Stalnaker's model (cf. (20a)):

(26) Directive force (with respect to a common ground and To-do List function)

a. The successful use of an imperative P in a conversation with common ground and To-do List function <cg,T> results in a new context <cg, T'>, where T' is just like T except that T'(addressee) = T(addressee)$\cup${P}.

b. Given a To-do List T(x), a partial ordering or worlds $\leq_{T(x)}$ is defined as follows: $w_1 \leq_{T(x)} w_2$ iff $\{P : P(x)(w_1)=1\} \subseteq \{P : P(x)(w_2)=1\}$

Portner further explains the pragmatic function of the To-do List in terms of the ordering. An agent A's actions will be deemed rational and cooperative to the extent that they tend to make it the case that there is no possible world compatible with the common ground which is better-ranked than the actual world according to $\leq_{T(A)}$. This statement corresponds to the principle in Lewis's theory that the Slave must make sure that the actual worlds remains in the sphere of permissibility.

The second approach to the representation question can now be summarized as follows: an imperative has successfully directed someone to do something when the content of the imperative has been added to a discourse component which determines an ordering relation. This answer to the representation question is followed in rough outline by subsequent work in the same tradition, such as Mastop (2011), Portner (2011), Charlow (2011), and Starr (2010, 2012). Before moving on to this later material, let us take a moment to see how the work already discussed answers the conventionalization question.

Lewis abstracts away from the conventionalization question by working with a simple formal language; the definitions of his language game state that, when !ϕ is uttered by the Master, the sphere of permissibility adjusts in the way described by (24). Given the way the game is formulated, one might suspect that he would adopt the kind of answer given in speech act theory, namely that the imperative

is constructed from a propositional part (ϕ) and a force marker (!), and that the force marker conventionally expresses the directive meaning. This is certainly the assumption of Han, although she formulates the idea in syntactically more sophisticated terms. Likewise van Rooij is not explicit, but since he expresses his ideas in terms of sentences like *Must* ϕ and *May* ϕ, we might guess that he accepts a proposition-and-force marker view of directive force.

Portner (2004) provides a rather different answer to the conventionalization question. His work on imperatives was part of a broader project on sentence types (e.g., Portner and Zanuttini 2000, Zanuttini and Portner 2000, Zanuttini and Portner 2003, Portner and Zanuttini 2006, Pak et al. 2008a, 2008b, Zanuttini et al. 2012), and a leading idea of this project was that the proposition-and-force marker view is not supported by natural language data. More precisely, as noted above, they find no support for the idea that a sentence type of natural language can be defined by discrete force marker which is present across sentences of that type in a given language (much less, across all languages). As a result, they argue for a different conception according to which root sentences have ordinary, compositionally derived semantic objects as their semantic values, and the linkage between sentence type and force is determined by basic theses of pragmatic theory. Specifically, in the cases of declaratives and imperatives, they propose that semantic type explains the correlation with force. They assume that declaratives denote propositions and that imperatives denote properties formed by abstracting over the subject; they further propose that a To-do List is a set of properties, in contrast to the common ground, which is a set of propositions. Given this, a basic principle (27) answers the conventionalization question.

(27) a. Given a root sentence S whose denotation [[S]] is a proposition, add [[S]] to the common ground, cg.
b. Given a root sentence S whose denotation [[S]] is a property, add [[S]] to the addressee's To-do List, T(addressee).

It should be noted that the principle applies to root sentences; it does not predict that other unembedded structures, such as DPs, *that* clauses, or prepositional phrases, are assigned force; sentence fragments must be interpreted in some other way. Further, the association of the imperative with the addressee's To-do List in particular is actually not stipulated but rather follows from the semantics of the imperative subject. This approach is further extended to interrogatives, exclamatives, exhortatives, and promissives; see the works cited for details.

Mastop (2011) makes a proposal much in line with others in the tradition of Lewis. However, unlike all of the others, he premises his work on the idea that no semantics based on truth conditions can explain the properties of imperatives. He argues that imperatives denote objects other than (truth-conditional) propositions, namely "instructions". Given that instructions are an altogether

different semantic type from propositions, he is able to offer an answer to the conventionalization question similar to Portner's. Instructions can be members of to-do lists, and are not appropriate for being on the "fact sheet" (the analogue of the common ground); naturally, then, the dynamic meaning of imperatives places instructions onto a to-do list rather than a fact sheet. Mastop's proposal suffers, however, from the fact that instructions are treated as non-propositional primitives, and so we do not have a clear explanation of their logic properties or the relation between an imperative and what has to happen for it to be followed.[10]

Other recent work in the tradition of Lewis has suggested important refinements to the idea that the discourse component updated by imperatives defines an ordering relation over worlds. Charlow (2011) develops a dynamic framework where sentences modify "cognitive states" containing an information state (similar to the common ground) and a preference state (similar to the To-do list), and where the function of an imperative is to bring about the modification of the preference state. Rather than directly adding the imperative's content to the preference state (as Portner does with the To-do list), he represents the imperative's meaning as a test on the cognitive state, checking whether that state prefers situations of the kind described by the imperative to those described by its negation, and if it does not, requires that the preference state be modified so that this strict preference (or necessity) condition is met. In simple cases, meeting the strict preference condition is as simple as adding the imperative's content to the preference state (in effect, updating the To-do List in the fashion proposed by Portner), but in more complex situations, such as when the preference state already contains a requirement in conflict with the imperative, a more complex kind of adjustment will have to take place.

This situation just discussed, when an imperative conflicts with some requirement already in place, constitutes the main case in which Charlow's proposal differs in a non-technical way from Portner's. Portner (2011) proposes that the To-do list can be inconsistent, and that this situation represents permission for the agent to undertake actions which best serve any maximal consistent subset of the To-do list. (Mastop 2011 makes a similar proposal: an action plan containing more

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[10] Mastop does propose a "result" function which assigns to each instruction a proposition representing its results, and so one might think that instructions are simply correlates in another semantic domain of these propositions. That is, the denotation of an imperative sentence S could be seen as an object i which is mapped by the result function to the propositional denotation [[S]] which would be assigned to the non-imperative version of S. In a way, on this view, instructions would be similar to Chierchia's (1984) concept of the individual correlate. However, such an analysis does not seem to be what Mastop has in mind, and it would make it hard to see substantial content in the claim that imperatives are semantic primitives. In the end, then, we are left without a well-grounded understanding of what instructions are.

than one to-do list represents the state of an agent with a choice among actions.) Portner's treatment of free choice hinges on the idea that free choice imperatives generate inconsistent To-do lists; in addition, he suggests that a simple imperative like A's second utterance in (28) can be read as only giving permission (in this case, permission to bring wine), if it is inconsistent with prior context:

(28) A: Please bring some beer to tomorrow's party.
B: But I have some good wine at home.
A: Then sure, bring wine!

For Charlow, in contrast, the use of a simple imperative always brings about a context in which the imperative's core content is necessary, and so the sequence in (28) should not bring about mere permission to bring wine. While I feel that (28) does imply permission to bring wine or beer, it is certainly often true that an imperative which is inconsistent with prior requirements often does not just grant permission, and instead may cause an adjustment or retraction of prior requirements. This fact is difficult for Portner to explain.[11]

Although Charlow's theory places a clear necessary condition on the update of a cognitive state by an imperative (the state should strictly prefer the truth of the proposition to its negation), he is skeptical of the idea that semantics should provide a functional definition of that update. In other words, he thinks that it is not a matter for semantics what one does to the preference state in order to necessitate the imperative. Rather, the theory of the update should provide heuristics concerning what an appropriately conservative update would be, in various circumstances. ("In slogan form: speech act theory furnishes a theory of cognitive directives. Epistemology furnishes a substantive theory of diachronic compliance for cognitive directives", Charlow 2011: 104). He is pulled towards this perspective because he is not able to describe a general update function which he is confident reaches the appropriate set of preferences no matter what set of preferences are in the input context. He does, however, discuss at length specifications of the update which would be appropriate in various logically

[11] Portner could achieve the same predictions as Charlow by requiring that the To-do List remain consistent. I think that the correct generalization is that language users assume that speakers do not intend to introduce inconsistency into any particular sublist (see the discussion of (29) below), unless there is an explicit indication (like *or*) that the speaker intends inconsistency. However, distinct sublists can be inconsistent with one another – for example, the orders which have been given to an individual may conflict with the things he needs to do in order to achieve his goals – and therefore the overall To-do List easily becomes inconsistent. We can refer to the situation where a single sublist is inconsistent as "free choice" and the situation where distinct sublists are inconsistent as a "dilemma".

interesting situations. His nondeterministic stance about the semantics of imperative update is a key contrast with Portner's approach, as well as the later proposal of Starr. Portner takes what goes on in the simplest case (namely the addition of the content of an imperative's content to a To-do List with which it is consistent, relative to the common ground) as defining the sentential force of imperatives, and sees the more complex updates, such as the retraction or modification of existing requirements, as the result of additional strategies which language users may employ in specific situations.

Starr (2010, 2012) also develops a theory of imperatives according to which their function is to modify an ordering relation, and like Portner (and opposed to Charlow) he analyzes permission as the creating of a order with multiple sets of "best" worlds.[12] Like Mastop (2005), Portner (2007, but not 2004), and Charlow (2011), Starr's analysis is cast within a dynamic semantics framework; more so than the others, Starr argues that the dynamic semantics approach in and of itself conveys crucial advantages over theories, like Portner's (2004), in which the shift from static to dynamic meaning is mediated by general conventions or pragmatic principles. Crucially, Starr thinks that there are reasons to represent within the (dynamic) semantics the potential for an imperative to modify the preferences associated with an agent in discourse, rather than having the semantics be traditional and static and letting the function of updating the To-do list be stated as a separate principle like (27).

Starr answers the conventionalization question in the traditional manner of classical speech act theory, by building the imperative logical form !A out of a sentence radical A and an element ! which associates it with the right kind of update (namely, preference update).[13] He answers the representation question in (generally speaking) the same way as other preference-update approaches,

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[12] This is only one subtype of permission. The other occurs when the imperative places a requirement on the addressee to do something which he wanted to do anyway and which the speaker has the authority to prohibit; this idea is seen in Hamblin (1987), Wilson and Sperber (1988), Portner (2004), Condoravdi and Lauer (2012), among others.

[13] A reviewer suggests that the dynamic approach sidesteps the conventionalization question. The idea is that a sentence with the right kind of preference-update dynamic semantics would by definition be counted as imperative. However, the point of the conventionalization question is why particular sentences have directive meaning (*Feed the bird!*) while others do not (*He is feeding the bird.*) Apparently, if a sentence looks like the former but not the latter, it can have a ! prefixed to it in logical form. The dynamic theory does not by itself offer insight into the question of why this is so. Any suggestion that ! is present because it is represented atomically in the morphosyntax runs into problems with the diversity of forms that can serve as imperatives within a single language, as mentioned above.

but he develops an innovative, integrated formal model of the discourse context which aims to represent the effects of all major sentence types. This contrasts with Portner's theory, in which the common ground and To-do List are separate modules of the discourse model. Whereas (simplifying somewhat) Portner models the discourse as a triple <cg, qs, T>,[14] Starr treats it as a single set-theoretic object, the preference state, on which assertive, interrogative, and directive acts can all be defined. While the model itself it too complicated to examine here, the question in evaluating it will be whether it succeeds in being truly integrative, or whether it merely distributes the effects of declaratives, interrogatives, and imperatives into different parts or aspects of one complex set-theoretic object.

A final approach which can be seen as treating imperatives as modifying an ordering relation is that of Condoravdi and Lauer (2011, 2012). As mentioned above, most of their presentation is based on the idea that imperatives assert something, namely that the speaker has an effective preference that the addressee take some action (e.g., that Ben feeds the bird). However, they discuss the possibility that the imperative creates a commitment on the part of the speaker to having an effective preference (rather than asserting this commitment), and since effective preferences are modeled in terms of an ordering relation (similar to (26b), but an ordering of propositions rather than worlds), this would be a version of the "ordering update" approach. It would be quite different from all of the other approaches in this family, though, because the ordering is connected to the speaker's actions, rather than the addressee's.

2.3.3 Varieties of directive meaning

Before leaving the topic of directive force, there is one final empirical issue which should be discussed. While we have spent some attention on the distinction between permission and non-permission imperatives, this is not the only pragmatically relevant difference among speech acts performed by imperatives. Much of the literature has also focused on further subtypes of directive meaning, such as orders, suggestions, invitations, advice, and instructions. Portner (2007) discusses the examples in (29a-c); Charlow (2011) talks about the instruction imperative (30a), and Kaufmann the "absent wish" (30b) (see also, for example, Schmerling 1982, Davies 1986, Han 1999, Schwager 2007, Condoravdi and Lauer 2012):

(29) a. Sit down right now! (order)
b. Have a piece of fruit! (invitation)
c. Talk to your advisor more often! (suggestion)

(30) a. A: How does one get to Union Square from here?

[14] The component qs (for "question set") is designed to account for interrogatives (see Roberts 1996, Ginzburg 1995).

B: Take Broadway to 14th (for example). (instruction)

b. Please, be rich! [On one's way to a blind date] (absent wish)

Let us begin by focusing only on the examples in (29), since the issues they raise are slightly less difficult than the ones in (30). In (29), we have imperatives which are all used with the intent to get the addressee to do what they say – they are straightforwardly directive, and so any of the ideas about directivity outlined above can apply to them. What they need is an account of how they differ. What is it to be an order, as opposed to a suggestion, example? Most of the works which offer formal analyses of such differences do so in terms one of the analyses of imperative meaning based on ordering semantics. Thus, for example, Portner separates the To-do List into various sublists, and this accounts for the various flavors of imperatives in (29a-c); for example, when an imperative updates the sublist associated with the speaker's authority, the result is an order, while when it updates a sublist associated with the addressee's goals, the result is a suggestion. Likewise, since her basic theory of imperatives treats them as modal sentences, Kaufmann associates each imperative subtype with a particular variety of ordering source. Han's idea, while given in less detail than either of these, is very similar, and Charlow essentially follows the same account.

An advantage of this family of approaches to (29) is that it makes clear why there is such a close connection between the varieties of imperatives, on the one hand, and flavors of priority modality, on the other. Note how (29a) is closely related to, and in some sense makes true, the deontic modal sentence (31a), based on Portner (2007); there are similar relations between (29b-c) and (31b-c):

(31) a. Noah should down right now. (deontic)

b. Noah should have a piece of fruit. (bouletic)

c. Noah should talk to his advisor more often. (teleological)

For Portner or Charlow, the ordering relations updated by the imperatives is (29) are identical to the ones used as ordering sources by the corresponding modals in (32); for Schwager/Kaufmann the corresponding pairs of sentences in (29) and (31) involve modals which utilize identical ordering sources. In contrast to this neat picture, I do not see any way to account for this close connection between imperatives and modals within a classical speech act theory, since the effect of a directive act is not given a linguistically relevant representation. It is also not clear how the link between imperatives and modals should be established in Mastop's or Starr's frameworks, since the preference relations created by imperatives are not immediately utilizable as ordering sources.

The examples in (30) present a deeper challenge to ideas about the directive meaning of imperatives. Someone uttering these sentences does not really intend to get the addressee to do what they say; for example, it seems incorrect to say that an utterance of (30a) aims to put 'Take Broadway to 14th' on the

addressee's To-do List. (In this case, the speaker doesn't really care.) For this reason, Kaufmann and Charlow argue that these imperatives, which are in a sense not fully directive, provide a strong reason to prefer their accounts to Portner's (and presumably likewise to Starr's). For Kaufmann, for example, they would have roughly the semantics of *You should take Broadway to 14th (if you want to get to Union Square)* and *You have to be rich (if I am to be pleased)*.[15] In order to account for such examples, Portner would need to broaden the concept of To-do List to include sets of priorities which are not immediately taken to circumscribe the addressee's actions (in the case of (30a)) and which are not tied to an addressee present in the context (in the case of (30b)).[16]

The examples in (30) can profitably be related to Mastop's (2011) analysis of conditional, third person, and counterfactual imperatives in Dutch. For Mastop, there is a "practical commitment function" which indexes action plans (and hence to-do lists, which make up action plans) to possible worlds. In this approach, (30a) can be thought of as a case in which the instruction to take Broadway is only on those action plans which are associated with a world in which the addressee wants to go to Union Square. (Starr 2012 could follow a similar strategy, though his approach to conditional imperatives is rather different.) The absent wish in (30b) combines properties of the *let*-imperative exemplified by (8), repeated here as (8'), and the counterfactual imperative (32):

(8') Laten zij eerst maar eens hun excuses aanbieden.
Let-pl they first prt prt their apologies offer-inf
'Let 'em first offer their apologies.'

(32) Was toch lekker thuisgebleven. (Mastop 2011, (27))
Was prt prt at.home.stay-pp
`You should just have stayed at home.'

Mastop (2011) proposes that (8') shifts the context to one at which an absent person is addressee (though he does not give a formal model of this shifting). He analyzes (32) as expanding the set of possible worlds at which the practical commitment function is defined beyond the (analogue of the) common ground, and adding `you stayed home' to the addressee's action plan at every world at which it is defined. (Although it is not explained what it means to have the instruction to stay home on one's action plan at worlds which are known to be

[15] Of course, the analyses of these modal paraphrases are themselves not simple. For example, the first is an anankastic conditional (Saebø 2001, von Fintel and Iatridou 2005, Lauer and Condoravdi 2012, among others).
[16] Example (30b) is tricky because it is unclear whether it represents (i) a third person imperative like (7) or (10), or (ii) a second person imperative directed at an absent addressee who has no control over whether he fulfills the speaker's desire or not.

non-actual and at worlds where it is no longer possible to stay home, the idea is clearly that this situation represents one of failure and potentially regret.) Perhaps (30b) could be thought of as a case of expanding the set of possible worlds at which the practical commitment function is defined to include some at which the absent addressee has control over whether he is rich.

2.4 Complex sentences involving imperatives

Imperatives can be used as constituents of several kinds of complex sentences, and these constructions pose numerous puzzles for semantic theory. While limitations of space prevent me from considering analyses of these in detail, it may be useful to give an overview. The examples in (33) show some of the main types of constructions in which imperatives figure as a component part:

(33) a. Speech act conjunction
You bring the bread, and Hans will bring the wine.
(Based on Kaufmann 2012)

b. The "Imperative and Declarative" (IaD) construction
Be late and you'll lose your job! (Kaufmann 2012)

c. The "Imperative or Declarative" (IoD) construction
Get out of here or I'll kill you! (Kaufmann 2012)

d. Conditional imperatives
If you see something, say something! (Kaufmann 2012)

e. Imperative complement clause

Emma-ka	Inho-eykey	kongpuha-la-ko	hasiess-ta. (Korean)
mother-NOM	Inho-DAT	study-IMP-COMP	said(honorific)-DEC

'Mother told Inho to study.' (Zanuttini et al. 2012)

As pointed out by Kaufmann (2012), the IaD in (33b) construction must be distinguished from sentences in which an imperative and a declarative are truly conjoined, as in (33a). Whereas (33a) entails that Hans will bring the wine, (33b) does not entail that the addressee will lose his job. (33a) is analyzed as a case of speech act conjunction: first a request is made that the addressee bring the bread, and then it is asserted that Hans will bring the wine. Within a dynamic semantics framework, this speech act conjunction is simply sequential update of the context (Krifka 2001, Kaufmann 2012, Starr 2012). Although there seems to be agreement within the field that such a sequential update analysis is unproblematical for (33a), analyzes differ according to whether speech act conjunction is understood to be something special, or rather to represent normal sentential conjunction.

The IaD and IoD constructions have meanings which are intuitively quite similar to conditionals. (33b) means "If you are late, you'll lose your job", while (33c) means "If you don't get out here, I'll kill you." The first questions which theories

of them must face is whether they are semantically conditional, in the sense that they have a logical form equivalent to a conditional logical form, or whether they give rise to a conditional meaning by some type of pragmatic inference. There is not agreement in the literature on this point (a few of the many works discussing IaDs and IoDs are Bolinger 1967, Davies 1986, Clark 1993, Han 1998, Franke 2005, Russell 2007, and Kaufmann 2012).

The arguments that IaDs have a truly conditional interpretation are fairly strong. The one hand, the difficulties for a pragmatic account can be seen by considering an IaD with a dispreferred imperative part like (33b). Such an example cannot be understood to request that the addressee be late, so it is difficult to analyze in terms of a speech act conjunction followed by some pragmatic inferencing. To turn (33b) into a conditional via pragmatics will require a very powerful pragmatic theory, such as that proposed by Asher and Lascarides (2004), and one must be concerned that such a theory will fail to be sufficiently restrictive. Moreover, Kaufmann (2012) points out several structural properties shared by IaDs and hypothetical conditionals. However, although a pragmatic account faces problems, it not easy to derive a conditional logical form for (33b) either. As noted by Culicover and Jackendoff (1997), conjunctions can frequently receive a conditional, subordinating interpretation, as in *I get this job and I'm happy*, and so one strategy is to attribute the conditional IaD meaning to the presence of this "subordinating conjunction" (e.g., Franke 2005, Kaufmann 2012). Still, because the conditional logical form is quite different from the surface syntactic structure of these sentences, various pragmatic inferences and operations on logical form seem to be required in addition to the special subordinating conjunction. Therefore, it is not entirely clear that any analysis which derives a conditional logical form for IaDs is more restrictive than pragmatic accounts.

In contrast to discussions of IaDs, there is greater consensus that the conditionality of IoDs is pragmatically derived (Franke 2005 is an exception). We do not find IoDs with an imperative part which is dispreferred by the speaker (Clark 1993, Franke 2005, Kaufmann 2012), a point which suggests that the imperative retains its directive meaning. Analyses differ, of course, in terms of where the pragmatic inference arises. Kaufmann assumes a particular non-classical account of disjunction (Geurts 2005), and so connects IoDs to the problems discussed in Section 2.2.

Conditional imperatives have been extensively discussed, recently by Asher and Lascarides (2004), Mastop (2005, 2011), Kaufmann (2007 (as Schwager), 2012), Starr (2010, 2012), Charlow (2010, 2011). According to a modal theory of imperatives like Kaufmann's, a conditional imperative can receive the same analysis as a conditional sentence with a modal in the matrix clause; within the framework of modal semantics assumed by Kaufmann, namely Kratzer's, this amounts to restricting the space of possible worlds relevant to the modal

operator. It is certainly an advantage of the modal theory that it comes with a ready-made analysis of conditional imperatives, and the concerns one can raise about this account are essentially the ones which apply to the modal theory of imperatives generally (see Section 3 below). Opposed to the modal view are a number of dynamic theories, especially Mastop's (2005, 2011), Charlow's (2010, 2011), and Starr's (2010, 2011). As dynamic theories, these works propose that the meaning of an imperative is to update a component of the discourse context which represents agents' preferences or requirements, but in order to encode the dependency of a given preference/requirement on a condition presented by an *if* clause, they argue in favor of more complex representations of the discourse context than the simpler dynamic theories of Lewis (1979) and Portner (2004, 2007). Indeed, conditional imperatives have become a major tool for testing the details of formal theories of imperatives semantics.

Although imperative cannot occur in complement clauses as freely as other clause types, they clearly do embed in many languages (Pak et al. 2004, Chen-Main 2005, Rus 2005, Platzak 2007, Crnič and Trinh 2009, Zanuttini et al. 2012, Kaufmann 2012, Lee 2012, Thomas 2013, and Kaufmann and Poschmann 2013; Maier 2010 argues that apparently embedded imperatives are actually quoted). The field has not yet developed a good understanding of why certain languages allow the construction in (33e), while others either do not, or do so only in a limited way. From the perspective of semantic theory, embedded imperatives of this sort pose a problem for dynamic theories in which directive force is encoded in the logical form, like Charlow's (2011) and Starr's (2011). These theories would either have to assume that the embedding operator accepts an essentially discourse-oriented meaning in its complement, or find a way to strip the force from the embedded clause. In contrast, theories which assign more ordinary semantic values as the meaning of imperatives, like Portner's (2004) and Kaufmann's (2012), can modify a standard semantics for embedding to account for (33e). This is what we see in Zanuttini et al. (2012) and Kaufman (2012).

3. Theories of imperative meaning

In discussing the nature of the imperative subject, the logical properties of imperatives, and the analysis of directive force, we have encountered most of the important proposals in the literature concerning the semantics of imperatives. We will now turn things around and make explicit how existing theories of imperative semantics attempt to account for some or all of the data outlined above. Our overview will follow a basic division between analyses which propose that imperatives contain a modal element which accounts for the essential properties of the clause type and theories which explain the properties of imperatives as resulting from the nature of an imperative-specific update function

within dynamic semantics.[17] There are other reasonable ways to divide theories up; for example, another recent overview article, Han (2011), makes a main distinction between theories in which imperative force is encoded in logical form, and those in which it is pragmatically derived. (This groups together the modal theory with some of the dynamic theories, on the one hand, and opposes it to Portner's analysis, on the other.)

3.1 The modal approach

I will discuss two analyses which propose that imperatives contain a modal element, and these two may be distinguished in term of how close the proposed modal is to being a "regular" modal such as a modal auxiliary. According to the analysis of Han (1999, 2011), an imperative contains a special kind of modal element which causes the proposition expressed by the imperative to define a domain of modal quantification; specifically, it does this by being added to a relevant (e.g., deontic) ordering source which, in combination with the modal base, defines a set of accessible worlds. As Han (2011, p. 1797) says: "In a way, an imperative is like a defective conditional that only has an *if*-clause, but not the consequent. Both an imperative and an *if*-clause restrict the domain of quantification. The difference is that the *if*-clause restricts the modal base, whereas the imperative restricts the ordering source." Han's proposal has some intuitively appealing features. It seems helpful in explaining the IaD construction, since the imperative does function like an *if*-clause in a sentence like (33a). It makes concrete the idea that imperatives are connected to deontic modality. And it explains why imperatives cannot be evaluated for truth or falsity. I might also mention that it could hold promise for explaining free choice effects, since *if*-clauses also show choice:

(34) If you eat an apple or a pear, I'll be happy.
(If you eat an apple, I'll be happy, and if you eat a pear, I'll be happy.)

(The fact that conditionals show free choice effects is exploited by several theories of choice, such as Asher and Bonevac 2005 and Barker 2010, but these are not focused on imperatives.)

Despite these intuitive advantages, Han's modal analysis leaves unclear what the semantic type and normal function of the imperative denotation is. If we suppose that a domain of modal quantification is a proposition (a set of accessible worlds), and the imperative denotes that, why isn't it evaluable for truth or falsity? And if it's of another type, how is it integrated into the discourse in those cases where

[17] As mentioned above, Condoravdi and Lauer (2012) mainly develop their ideas in terms of a variant of the modal theory (where the modal-like component is "I have an effective preference that"), but discuss the option of an imperative-specific pragmatic effect which creates commitments to effective preferences.

there's no continuation of the kind seen in (33a-b), for which it can serve as the antecedent? Of course, as mentioned above, Han (1998) has another idea about how the imperative functions, namely the proposal that its content is added to the addressee's plan set. However, this dynamic analysis does not fit with the proposal under consideration here. It seems to me that, to the extent that we make all of the ideas in Han (1998, 1999, 2011) compatible with one another, we'd end up with a theory similar to Portner's or Charlow's, in as much as this would be a dynamic theory wherein the imperative updates a feature of the discourse which can serve as an ordering source. The difficulty for Han is that she does not connect the ordering source affected, in her view, by the "modality" of imperatives, with the plan set which she uses to model their discourse effect.

The second variety of modal theory is represented by the work of Kaufmann (2012; 2005a,b, 2007, as Schwager, among others). Kaufmann treats imperatives as containing a modal very similar to *should*, the main difference being that the imperative modal is associated with a set of presuppositions which ensure that it has a performative, not a descriptive, use. Therefore, Kaufmann proposes that the meaning-in-context of the imperative (35a) is the same as that of (35b) in a context in which the latter is used performatively, to impose a requirement:

(35) a. Sit down right now!
b. You should sit down right now!

Since the logical properties of imperatives are largely shared by modal sentences, this approach will aim to explain those properties by extending an account of them which works for ordinary modal sentences. This type of modal theory will also have an obvious approach conditional imperatives like (33c). It explains the variety of pragmatic functions of imperatives (orders, suggestions, advice, and so forth) as following from the different flavors of modality which the imperative modal, parallel to *should*, can have. Since the imperative modal is a strong modal, like *should*, permission readings must be derived pragmatically, and Kaufmann (2012) presents interesting ideas about permission. Kaufmann has an extensive discussion of imperative subjects, as noted above. An important challenge for her theory is to properly explain the nature of directive force, and we have seen in Section 2.3 some of the criticisms to her way of answering the conventionalization question and the representation question.

One significant difficulty for Kaufmann's version of the modal theory is the status of the imperative modal element itself. Note that, by and large, imperative sentences do not contain overt modals, or indeed any overt material in a projection associated with modality. When imperatives are overtly marked, it is often a particle-like element, such as Korean *-la*, which is in a paradigm with particles which mark interrogatives, declaratives, and the like – crucially, not with

elements expressing classically modal concepts like epistemic modality. Of course, there are cases where imperative meaning is expressed by sentences containing material which is plausibly modal (such as an element which otherwise marks futurity), but these are not typically deontic forms, but rather elements with irrealis or intentional meaning. (See Aikhenvald (2010) for a detailed typological study.) Given this picture, Kaufmann is committed to the idea that dedicated imperatives, across the wide variety of languages which have them, contain a modal element which always lacks phonological content, and that other languages never (at least, as far as we have discovered) encode the same universal lexical meaning with an overt element. This would be an unprecedented status for a morpheme to have; for example, as far as I know, there is no known tense or aspectual meaning whose lexical exponent can only be phonologically null.

3.2 The dynamic approach

We have already traced the development of the dynamic approach in our discussion of directive force in Section 2.3. Here we will summarize how the approach aims to explain the range of data outlined in Section 2, focusing on the most fully developed versions of Portner (2004, 2007, 2011), Charlow (2010, 2011), and Starr (2010, 2012). These recent dynamic theories all share the core intuition that an imperative updates the discourse in a characteristic way which can be modeled by imposing an ordering relation on the set of worlds compatible with the common ground.

Portner (2011) aims to explain the logical properties of imperatives by developing a particular theory of permission interpretations and then using it to account for free choice effects; an explanation of Ross's paradox follows from the analysis of choice. The basic idea, already discussed in Section 2.3, is that a permission reading occurs either when the speaker is directing the addressee to do something which he wants to do anyway (in a context where the speaker could prohibit the action), or when the use of the imperative results in an inconsistent To-do List. Given the ordering pragmatics of the To-do List, inconsistency leads to multiple sets of "best" worlds, and therefore choice on the part of the addressee concerning how to achieve what's best. Free choice then follows as a particular case of permission; the idea is that (36) gives permission to have an apple and permission to have a pear:

(36) Have an apple or have a pear!

Making this idea work out compositionally requires Portner to adopt a Hamblin-style analysis of disjunction and indefinites (e.g., Kratzer and Shimoyama 2002, Simons 2005, Menéndez-Benito 2005, Alonso-Ovalle 2006, Aloni 2007), so that the disjunctive imperative expresses a pair of imperative meanings {`have an

apple (and not a pear)', 'have a pear (and not an apple)'}, each of which can be added to the To-do List, creating an inconsistency.

We have already seen how Portner's theory explains directive force, the various pragmatic subtypes of imperatives, and the connections to explicit modal discourse. He does not say anything about IaD, IoD, and conditional imperative constructions (although it seems open to him to adopt the proposal of Charlow). Portner develops a detailed theory of imperative subjects in collaboration with colleagues (Zanuttini, Pak, and Portner 2011), and the goal of explaining why imperative subjects have special grammatical and interpretive properties provides one of the main motivations for his approach to the conventionalization question.

There are two main differences between Portner's theory and Charlow's, and both have to do with the analysis of directive force. First, concerning the conventionalization question, Charlow follows the standard approach of speech act theory, assuming that the clause is marked in a way which allows its conventional force to be directly encoded; we have discussed the challenges for such a view in section 2.3. Portner (2004), in contrast, aims to derive the association of sentence type with force through pragmatic reasoning based on the semantic types of different kinds of clauses.[18] I would evaluate this difference by saying that the standard approach certainly can be made to work, in that one can always define the force marker via a list of constructional patterns which we observe to have directive meaning, but it is an open question whether it can work in a way which meets the criteria of explanatory adequacy, since there is no linguistic evidence for any piece of grammatical material present across all examples of the imperative type (even with a single language). In contrast, Portner's approach has the risk of not working at all (that is, if the clause types are not, in fact, properly classified by semantic type), but if it does work, it will have an explanatory character.

The second main difference between Portner's and Charlow's view concerns the representation question. Whereas Portner treats the imperative update in a simple way (the imperative's regular meaning is added to the addressee's To-do List), Charlow uses necessitation to constrain the update function. These differences become empirically significant in the analysis of permission and choice. Charlow treats permission as an indirect speech act and free choice as the result of a special operation at the speech act level. In these ways, his approach is more complex than Portner's, and can be challenged on the grounds that permission sentences do not behave like indirect speech acts and that free choice imperatives for all appearances contain ordinary constituent disjunction or

[18] As noted above, in later work, Portner is less committal as to whether the form-force relation is derived in this way, or whether the dynamic meaning of an imperative is directly encoded in its semantics.

indefinites.

Besides these differences in the treatment of directive force, one should note that Charlow's work does not attempt an analysis of imperative subjects; clearly it would have to enrich the logical form and say more about the syntax-semantics interface in order to have the tools to do so.

Starr's work is similar in a general respect to Charlow's. Starr answers the conventionalization question by assuming the presence of a force marker in logical form, and his approach therefore inherits the challenge of explaining the status of this element at the syntax-semantics. His formal semantic framework is that of dynamic semantics, specifically an extension of inquisitive semantics (see also Aloni and Ciardelli 2011), and he argues intently that the normal function of an imperative on the dynamic approach, namely to update a discourse ordering relation by preferring the truth of the imperative, is modeled entirely in its (dynamic) semantic value. In this respect, he differs from Portner (2004) and Charlow, according to whom this function arises from the interaction between the meaning and other factors; specifically, for Portner (2004), the linking principle (27), and for Charlow, the principles which guide necessitation. Based on his analysis of simple imperatives, Starr then makes interesting proposals concerns the logical properties of imperatives and various complex sentences containing them.

Starr leaves as open ends a number of the puzzles we have discussed above: the functional variability seen in (29)-(30) and the relation between imperatives and priority modals illustrated in (29) and (31). Since the work is generally philosophical and logical in its concerns, like Charlow's it does not say anything about the status of the imperative subject.

4. Conclusion

Research on imperatives has proceeded at several levels of generality, with some important work focusing on specific phenomena (in particular, the interpretation of the imperative subject and the logical puzzles), other work seeking to develop an overarching theory of imperative semantics, and even more ambitious work aiming to understand clause type systems in general. This diversity of approaches will obviously be most healthy and productive when scholars remain attentive to the ideas coming out of other sectors of the field of imperative semantics, whether those ideas would tend to support or cast doubt on their own agendas. It is my hope that this article can serve this community of researchers interested in imperatives and clause types by making it easier to know the full range of issues, problems, and theories which are relevant to understanding what imperatives mean, and how they come to mean it.

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