About Convention and Grammar*

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It is commonplace to talk about language in terms of conventions. The rules of grammar that describe each language appear to be conventional, in that it seems to be just convention that the verbs go on place in English, another in German, and another in Japanese. The meanings of our words, especially, are often called conventional, in that there is nothing intrinsic about the words themselves that make them mean what they do. Nothing about the sound /kæt/ itself determines that it picks out cats; rather it appears that the conventions we English speakers use makes it do so.

At the same time, a lot of what happens in communication seems not to be conventional at all, but the result of our being rational agents, able to work out what message is being conveyed to us as the conversation proceeds. This is most clear, for instance, in Gricean and neo-Gricean accounts of implicature.

The division of labor between convention and rational inference in language has been much debated over the years. Recently, in an ambitious book, Lepore & Stone (2015) have argued that much more falls one the side of convention than might have been expected, and certainly much more than most pragmatic traditions have supposed.

I largely agree that the scope of linguistic convention is larger than those traditions take it to be. What I am not so sure about it the nature of the conventions at work in language. Though the observations we just made

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support calling many rules of language 'conventions', I am not so sure they are conventions in the sense that we usually mean it in philosophy.

In this paper, I shall explore this issue, following Lepore and Stone's lead. I shall offer a variety of different ways things might appear conventional in language, one of which is in line with their proposal, but two of which are different. Where the common notion of convention, and the one Lepore and Stone prefer, focuses on social aspects of coordination, the other two I shall identify make minimal use of them. I shall then explore in depth one example of a feature of language that has appeared to many not to be conventional at all. Again following Lepore and Stone, the example I shall use is an aspect of information structure; in particular, the notion of topic. I shall review the state of the art in thinking about topic, and argue with Lepore and Stone that the evidence strongly supports a conventional view. But, I shall also argue, it suggests a sort of convention that relies only minimally on social aspects of coordination.

From this example, I shall conclude, with Lepore and Stone, that we can often extend the reach of conventions in language, but that we should be careful about what those conventions are. Not everything that looks conventional in language is the same, and as we expand the scope of convention, we uncover very different sorts of conventions at work in language.

The plan of this paper is as follows. In sections 1 and 2 I shall discuss linguistic conventions, following Lepore and Stone's lead. In section 1, I shall distinguish three different levels of conventionality. In section 2, I shall argue that though Lepore and Stone's arguments for convention can be effective, they do not place phenomena within the levels. The remainder of the paper uses one example to explores how we might place linguistic phenomena within the levels I distinguish. The example, following Lepore and Stone again, is the information-structural notion of topic. I introduce this notion in sections 3 and 4. Section 3 introduces the general notion of information structure and section 4 introduces the particular notion of topic. Sections 5, 6, and 7 make the case for topic being low among the levels of convention. Section 5 reviews the syntax of topic, section 6 reviews the semantics, and section 7 puts the argument together. I return to a specific notion of contrastive topic that is especially relevant to Lepore and Stone's discussion in section 8, and argue that it is at the same level as syntactically distinguished topics. I conclude, briefly, in section 9.

1 Varieties of Convention

I noted above that rules of grammar and associations of sounds with meanings seem conventional. In calling them conventional, we call attention to their arbitrariness. There is nothing intrinsic about the nature of the things in question, phonemic sequences, syntactic items, and so on, that makes the facts turn out the way they do. It thus appears arbitrary that we made /kæt/ mean cat and not dog. It looks, in many cases, like we made arbitrary choices about how to speak, and so, we have conventions.

An important line of thinking about convention emphasizes this aspect of arbitrary choice. Of course, not every arbitrary choice is a convention. Which coffee cup I pull out of the cabinet is arbitrary, but not a convention.

What more makes a convention? An influential analysis comes from Lewis (1969). Lewis, as is well-know, thinks of conventions as socially determined regularities in behavior that are both arbitrary and self-perpetuating, and offer solutions to recurrent coordination problems (cf. Rescorla, 2015). Lewis goes on to offer a game-theoretic analysis of this kind of coordination. For our purposes, the important point, as Lepore and Stone also make clear, is that Lewis's analysis is broadly Gricean in spirit. As they say, it relies on *collaborative intentions*, which involve not only shared intentions, but shared iterated recognition of intentions. This is the hallmark of Grice's (1969) treatment of meaning. As with Grice's notion of meaning, the account of convention focuses on reasoning about what others intentions are; reasoning which may be implicit, but can in principle be made explicit as ordinary propositional reasoning, and broadly falls under the heading of our rational abilities. Let us call conventions which broadly fit this model *Lewis conventions*.

Lepore and Stone are rightly dissatisfied with the full Lewisian analysis of convention. One point they make is that equilibria in a coordination game—the main payoff of a convention—can arise in other ways. It can be from physical facts or psychological mechanisms. So, if indeed there is a universal grammar that is part of our innate psychological endowment, then many aspects of our coordination in language are determined just by universal grammar, perhaps plus some mechanisms of parameter setting. As I shall discuss more in a moment, this, it is typically argued, requires no input from rationality, propositional knowledge, or anything beyond exposure to an environment that the language faculty is already tuned to automatically extract needed information out of. This is coordination, but no Lewis

conventions.

Lepore and Stone make other modifications to the general Lewisian picture. For instance, they focus on the role of the conversational record in semantics. But they retain the core Lewisian idea that conventions are *socially determined* solutions to coordination problems. Semantics is the domain of the special social competence in coordinating on the conversational record (p. 256). Facts of universal grammar may not be socially determined, but they emphasize their role in supporting social conventions. Even with their modifications and revisions, we still have a view that makes socially determined solutions to coordination problems the main focus. Let us call the general family of views that focus on this *Lewisian conventions*. The family of Lewisian conventions includes those fitting Lewis' own account, and Lepore and Stone's.

Lepore and Stone made the point that something can help to create and sustain a Lewisian convention without being one. Universal grammar provides an example. But here I want to depart from Lepore and Stone's perspective. I think cases like universal grammar have enough important differences to be treated as a separate category.

Let us assume, with Chomsky (1965, 1986, 2000), that we have a distinct language faculty. It provides us with an innate ability to acquire our languages. It is mainly comprised of general principles, which are the principles of *universal grammar* (UG). The obvious variation across the languages we speak results from these principles being parameterized. How those parameters are set determines just what language we speak. It determines where the verbs appear in our sentences, for instance.[1]

There is good reason to think that parameter setting is not like establishing a Lewisian convention. Parameters are often likened to switches, and are simply set to one position or another. With a limited number of parameters and their settings, the child operaters in a highly constrained space to acquire language. What the child needs to find is simply enough evidence to set the switches one way or another. This is sometimes likened to hypothesis testing.[2]

Though I am not sure we can say with any great certainty, I doubt parameter setting is much like establishing a Lewisian convention. Perhaps

[1]See Collins (2004) for more on the nature of the language faculty according to Chomskians. I will not try to review the long debate over the status of the language faculty, but see the position statements of Levinson (2003) and Tomasello (2003b) for opposing views.

[2]For an overview of some of these ideas, see Crain & Thornton (1998) or Guasti (2002).

no one claims it is, but I also doubt it is a matter of social competence or coordination in any substantial sense, and so, I doubt it is like a Lewisian convention at all. It is of course true that children often wind up speaking a lot like their parents, and a lot like people in their social environments. But they need not. The phenomenon of Creolization makes this vivid. In certain environments, where no language conforming to UG is broadly preset, children speak markedly differently than their parents. Though they often partially follow the social environment, they need not, and do not in some cases.[3] Perhaps children want to sound like their parents, and so, perhaps there is a drive to coordinate behind the way they set parameters. Even if there is, the model of limited hypotheses and testing against evidence does not seem to rely on that drive in any substantial way. It only requires that they be disposed to set parameters in the face facts about language around them.

A further point is that language acquisition starts very early, while the kind of reasoning that, even if implicit, goes into a full Lewisian convention may well emerge later. At least, there is some evidence that Gricean reasoning emerges later. Particularly, children up to around age 5 seem to have trouble with scalar implicatures (Foppolo et al., 2012; Noveck, 2001; Papafragou & Musolino, 2003). Much of grammar has emerged before that. By 3-4 years, children have a number of parameters set. This makes it at least questionable if anything like Gricean reasoning, which goes into genuine Lewisian conventions, is available for much of paremeter setting.

I am not sure how strong a claim can be made here, but let us consider the following. The principles and parameters model of UG opens the possibility that parameter setting is not a matter of establishing social coordination, and does not rely on the kinds of abilities we use to do that generally. It may be social in a limited sense of responding to the social world, but may not be a social matter of social coordination in any way.[4]

I do not think Lepore and Stone would disagree with any of that. But I want to highlight that it means that placing something about language in the broad category of Lewisian conventions, and noting they can be supported by UG, misses a distinction. It may be they are the result of substantial Lewisian convention establishment, or a very different process of parameter

[3]See the nice overview in Pinker (1994).

[4]Again, I shall not try to review the long controversy about how grammar is acquired, but for a very different view than the one I have been discussing here, see Tomasello (2003a).

setting. I shall try to track this difference as we proceed.

Another reason the distinction is important is it engages important questions about the scope of UG itself. Lepore and Stone often describe their project as extending the understood scope of *grammar*. This can sometimes be understood as just another term for convention, but it can mean more. It can mean the results of UG and parameter setting. Where and when we find that is an interesting question in its own right, and should not be overlooked as we explore the conventional aspects of language. Keeping parameter setting and Lewisian conventions separate helps us to do that.

When thinking about UG, we should note that it suggests an austere conception of grammar. It includes, presumably, the facts about syntax, morphology, and phonology. How much more is disputed. Chomsky himself thinks it includes no semantics (beyond logical form), though others disagree (Chomsky, 2000; Larson & Segal, 1995; Pietroski, 2005). The austere view is compatible with minimalist thinking about syntax, and the much-quoted remark that the language faculty is an "abstract linguistic computational system" which provides a "narrow syntax" whose core property is recursion, enabling it to generated an infinite set of expressions from a finite basis (Hauser et al., 2002, p. 1571). Not everyone takes as austere an approach as Chomsky, and the notion of core or narrow syntax is disputed. But finding something to be a matter of syntax proper is a stronger result than finding it to be broadly conventional, as it places the phenomenon nearer to this austere notion.[5]

As I just noted, it is disputed where semantics fits into the UG picture. But we should pause to note that it is a reasonable hypothesis that enjoys substantial support that the meanings of functional elements could be part of UG. These include tense, determiners (quantifiers), aspect, mood, and so on. We find, with these, a limited range of abstract meanings, which form closed classes, and we find some universals pertaining to these classes. Though it is not an area of consensus, we should also keep in mind the possibility that these aspects of meaning arise from the UG plus parameter setting part of language.[6]

So far, I have emphasized a distinction among the sorts of conventions of grammar Lepore and Stone draw our attention to. There is an important

[5]For a nice discussion of how this austere notion bears on the semantics/pragmatics distinction, see Collins (2007).

[6]I have discussed this in my (2014). See the references there, but especially von Fintel & Matthewson (2008).

distinction between genuine Lewisian conventions and results of parameter setting (which may indeed support Lewisian conventions). There is a further distinction I think it is also useful to draw. We observed above that word meaning appears to be conventional. In contrast to the way syntax is acquired on the UG model, the lexicon is genuinely learned, and is usually seen as the home of idiosyncrasy and non-parametric variation in language. This seems to be a likely place to find Lewisian conventions. I shall grant that there are some, but I shall also argue that word learning can present another kind of non-Lewisian conventional or learned status.

In particular, I shall suggest that it looks reasonable to suppose that early word learning is not like establishing Lewisian conventions. I put this point cautiously, as it is disputed, and how we learn our first words is an active area of research. But there is enough evidence to make this possibility one we should take seriously.

Let me start with a quick overview of some (amazing!) facts about early word leaning. Infants begin word leaning quite early. They can differentiate words in speech by about 6 months, and by 12 months are distinguishing words by grammatical category. Also around 12 months, they are acquiring word meanings, often words for body parts. They tend to acquire nouns and link them to categories around 14 months. Around 2 years old, they are sensitive to the transitive/intransitive distinction for verbs, and track the causal meaning of transitives. Children are able to learn word meanings very easily, with very few repetitions of information pairing words to meanings. They may be able to do so with just one exposure (one-trial learning). They can pair words with objects even if there are multiple objects to which a word can refer, and in a messy environment with many words being uttered and many objects in view.[7]

There are several ideas to be found in the literature about how such learning happens. One is that children operate using a hypothesis testing process, as is posited for parameter setting. But, the task is quite different. Learners represent possible word-meaning mappings, and test them against experiential input. The input is 'noisy', including lots of speech, multiple objects and so on. With this information, they need to form hypotheses about what, for instance, a noun picks out in the environment (e.g. Bloom, 2000; Carey, 1978; Markman, 1990; Waxman & Gelman, 2009). It has been argued that this is possible because a range of constraints children bring to

[7]For overviews of these and other facts, see Guasti (2002) and Waxman & Lidz (2006).

the word learning task (e.g. Golinkoff et al., 1994; Waxman & Markow, 1995). For instance, it has been argued that there is a mutual exclusivity constraint: if an object has a name, it should not get another one. These principles are often argued to be innate, and domain specific.

Another very different idea is that early word learning is associative (e.g. Frank et al., 2009; McMurray et al., 2012; Smith et al., 2014; Xu & Tenenbaum, 2007; Yu & Smith, 2012). The idea is that children are able to 'do stistics' (recognize statistical patterns) on co-occurrences of words with objects. They look at this cross-situationally, and so work with many occurrences of words and objects, and statistically infer word-object mappings. Increasing evidence suggests that even young children have powerful associationist mechanisms that can compute this kind of statistics.

Is early word learning like either of our two other cases: parmeter setting and Lewisian convention? It is almost certainly not like parameter setting. The operation of pairing an arbitrary word with a meaning is just a different task then setting a specific parameter provided by UG. The idiosyncrasy of the lexicon, and lack of lexical universals not traced back to grammar, attests to this. First words and beginnings of grammar do develop together, but I think it is safe to assume parameter setting and early word learning are different.

How much is early word learning like Lewisian convention. Here, I think the situation is not clear, but there is reason to think they are different. Most strikingly, the kinds of statistical models Smith and her colleagues have offered are not at all like solving coordination problems. The same, I think, can be said for the hypothesis testing models, which require only evidence of word-referent correlation, not coordination. Likewise, we already saw that where we can identify emergence of Gricean reasoning, it appears to emerge much later than early words. It is also a standard view that children up until around age 4 do not pass the false belief task, which is taken to be evidence they lack a theory of mind. This consensus has been changing in recent years, but it remains at least unclear if a theory of mind is present when first words are learned.[8]

At the same time, the situation is complicated. First, we do see some signs of intention recognition at the same time as children start to learn words. Children can follow gaze and gesture around 9–10 months, for instance, and

[8]A classic reference is Wimmer & Perner (1983). For more recent developments, see e.g. Onishi & Baillargeon (2005) or Scott et al. (2010).

are more likely to name objects people are attending to (cf. Waxman & Lidz, 2006). There is evidence that at 12 months, infants are showing some understanding of others as intentional agents (Tomasello & Haberl, 2003). We may thus wonder if in some way, the child is trying to guess what the speaker intends the referent of a word to be. But in contrast, it also appears that fixed features of the infant's visual field are central to determining how they assign referents to words (Pereira et al., 2014), which seems not to involve thinking about other agents. I think the conclusion we should draw is that if anything like social coordination is involved in first word learning, it is likely of a highly attenuated form, where limited input from still nascent understanding of intentions is all that might be at work. I am doubtful this will look much like the coordination that is involved in forming a Lewisian convention.

We have now seen two distinct phenomena of language acquisition—two ways knowledge of language can be acquired: parameter setting and the mechanisms of first word learning. I have argued that these seem markedly different from establishing Lewisian conventions. In particular, I suggested parameter setting seems radically different from establishing conventions, while early word learning seems at best to rely on intention recognition and social coordination in highly attenuated ways. We certainly have distinct phenomena here, and I think it is likely that they are far from the broadly Gricean picture of Lewisian conventions (though they can support the creation of Lewisian conventions, of course).

I am not claiming there is no room for full Lewisian conventions in our knowledge of language. I think there is. Here is one plausible candidate: technical terms learned by adults. Take, for instance:

(1) Zorn's Lemma

This is the name of a widely used mathematical result. The name is useful as it allows us to refer to the result easily. It is in a way misleading, if you take it at face value, as you might think it is referring to the lemma first proved by Zorn. The common wisdom is that this is not true; the lemma was first proved by either Kuratowski or Tukey (if the common wisdom is right). We call it Zorn's Lemma because somehow that got established, and it serves our needs of coordination. Likely enough, this is just a Lewis convention in a signaling game.

So, as I said, I think we have three distinct ways we can get rules of language in place. I should add that we might expect a lot in between

first words, which I have suggested might be learned with at best a limited role for social coordination, and full Lewisian conventions. As speakers' understanding of intentions and their social skills at coordinating develop, we might expect them to use those skills more and more in word learning. Much word leaning happens before we have clear evidence of the scope of those skills, so this is conjecture, but it is a reasonable possibility.

We thus have three phenomena, which indicate three sources of rules of language, which contribute to our general linguistic competence. Though it is fair to call them all 'conventions' in a loose sense, I have argued the first two are (probably) not like Lewisian conventions.

We thus have something like:

(2) **Level 1:** Parameter setting.

Level 2: Learning of first words.

⇓

Continuous development?

⇓

Level 3: Lewisian conventions.

Tradition puts grammar proper, especially on austere views of it, at level 1, but levels 1 and 2 are involved in the regular acquisition of language. All three levels can provide knowledge of language, and so contribute to linguistic competence. I have added level labels to the distinct phenomena we have looked at to mark that we might well expect families of phenomena to group around those levels, but I shall continue to focus on the specific phenomena that we have used to distinguish the levels. I shall continue to loosely talk about 'conventionality' to cover all three levels, and use the level numbers when I wish to distinguish among them.

2 Arguments for Conventionality

Lepore and Stone offer an array of arguments for the conventionality of aspects of language that have often been seen as non-conventional matters of inference. As I said, I largely agree. They also often conclude that conventionality indicates some phenomenon is part of grammar, in a broad sense of grammar rather than the austere one we examined above. Again, I agree.

This way of classifying misses the distinctions that our three levels of 'conventional' status provide. As I argued above, there is interest in understanding the sources of conventions these levels distinguish, and consequences from placing something at a particular level.

The strategy of arguing in favor of conventionality Lepore and Stone typically adopt does not help to distinguish the levels, and was not really supposed to. Typically, Lepore and Stone argue for conventionality by way of the following sorts of considerations. Independence from truth conditional content (Gricean detachability) points to conventional status, as it indicates something cannot be derived from the content of an utterance by general principles. Cross-linguistic differences can show the arbitrariness of some phenomenon, and also show that it is not derived by inference. Precision of meaning can also matter, as we would not expect inferred content to be as precise as that conventionally encoded.

These sorts of arguments are good, as far as they go, but it is easy to see that they do not distinguish the various levels. Any of them, from full Lewisian conventions down to parameter setting, can produce all of these effects. With that in mind, I want to explore how we might place a phenomenon more finely within the levels. I shall use as an example one that Lepore and Stone discuss: information structure. I shall illustrate, with this example, how if we are careful with the data, and take cross-linguistic evidence into account, we can go further than the argument for conventionality, and make some reasonably hypotheses about where in the levels something falls. More specifically, I shall argue that one information-structural phenomenon is not likely at level 3, and is plausibly at level 1.

3 Information Structure

In the following sections, I shall provide this illustration by looking at some of the details of the information-structural notion of *topic*. I shall broadly agree with Lepore and Stone's that it is conventional, but as I said, I shall argue a case can be made for its being low on our scale of levels. To show this, I shall review a range of current work on topics; though, I shall not offer any new data here. My claim is that the currently available data and theories make a reasonable case for placing topic at low levels, and plausibly at level 1.

Let me first introduce the general notion of information structure. In-

formation structure is a good place to study the range of conventions in language, as it stands at the intersection of not just semantics and pragmatics, but syntax and phonology as well. It is an area where virtually all of language comes together.

The label 'information structure' indicates an area broadly concerned with how the information conveyed in an utterance is packaged. Some of it is old information, some is new, some anchors the utterance in the discourse, some indicates where the discourse should go, and so on.[9]

In English, information structure is typically marked by what linguists call *pitch accents* or simply accents. Accents are points of intonational prominence, usually local maxima or minima or distinct contours in the pitch level of an uttered sentence. It is sometimes, less formally, called stress (though most phonologists see stress as technically something different). We will need to keep track of different 'tunes' that accent can produce, but for the most part, thinking of it as stress will be harmless. We often mark accents with capital letters. For instance, *Greek* is accented in:

(3) He spoke GREEK.

The natural reading here is that speaking Greek, as opposed to Latin, is new information.

It is a tempting idea that accent simply accomplishes a kind of phonological 'pointing', that highlights some part of a sentence. This makes information structure pragmatic in a strong sense: it is just what can be inferred from an unconstrained choice of 'pointing' that comes with an utterance. Such a view is suggested by Sperber & Wilson (1986, p. 203), who explicitly call it a "vocal equivalent of pointing." The same idea is echoed in the title of Bolinger (1972), "Accent is predictable (if you're a mind reader)." Bolinger goes on to talk about "emotional highlighting" (p. 644), which seems much like Sperber and Wilson's pointing.[10]

In contrast, Lepore and Stone argue that information structure is determined by linguistic conventions. I have already said that I agree. However natural and appealing the 'pointing' view may be, the accumulated evidence

[9]The term 'information structure' goes back to Halliday (1967). A related term 'information packaging' is due to Chafe (1976). Related notions were discussed at length by the Prague school. See the overview in Hajičová et al. (1998).

[10]Bolinger's work involves the detailed study pitch accents. His real interest in this paper is to argue that accent placement cannot be predicted by grammatical—syntactic or phonological—rules.

over recent years makes a strong case for Lepore and Stone's conclusion. I shall get to my main example of how we can go further on this matter than the argument for conventionality allows in a moment, but first, let me make a few comments about our general understanding of the marking of information structure in English, and how it supports a Lepore and Stone-style argument for conventionality.

First, I noted that information structure is typically marked in English by accent. This is clear, for instance, in the distinctive accent that goes with the new information the comprises an answer to a question, as in:

(4) a. What language did Cicero speak?
    b. He spoke GREEK.

(Shakespeare managed to provide a more scintillating version of this dialog.) This is the typical accent which marks what is called *focus*.

Not surprisingly, accent is complicated. Pitch accents are not all there is to intonational tunes. They come together with other elements that make up intonational phrases. Whether it is the whole phrase or just the pitch accent that marks information structure is disputed. And moreover, pitch accent is a strong correlate of perceived prominence, but not the only feature that leads to judgements of intonational prominence. But with all that said, at the level of detail we are working with here, we can usually use pitch accent as a guide to the marking of information structure.[11]

It is a striking fact about English, German, and other languages that they use specific intonation patterns to mark the semantic and pragmatic functions of information structure. But it is more striking how restricted these languages are in the ways they use intonation. Languages like English make use of a highly restricted range of pitch accents: six according to Beckman & Pierrehumbert (1986). Standard systems for describing intonational phrases also make places for an additional two boundary tones and two phrase accents, and many systems add a few more elements. But we have a highly limited stock of building blocks for linguistically relevant tunes, leading to something around 22 tunes that are used. Most of these have clearly distinguished meanings, usually pertaining to information structure, as Pierrehumbert & Hirschberg (1990) discuss. Among the many possible tunes we can form (say, if we are singing), just these are recognized and used by our language.

[11] For some surveys of relevant aspects of phonology, see Büring (2016b), Kadmon (2001), Ladd (1996), and Pierrehumbert & Hirschberg (1990).

This gives us an immediate argument, in Lepore and Stone style, for the conventional status of intonational meaning. A small range among the vastly many acoustic differences among utterances have been selected and given specific, but arbitrary meanings. That is the mark of convention. Moreover, we can see substantial variation in how information structure is marked cross-linguistically, as I shall explore more in a moment. The arbitrariness of the way topic and other features of information structure are marked again indicates convention. But as we already noted, this kind of argument does not tell us at what level the conventions fall.

One more general point about the marking of information structure in English is relevant to the general argument for conventionality, and will be important to bear in mind as we go forward. It is a standard view in the study of information structure that the intonational marking realizes a syntactic feature (F when focus is in question). These are ordinary syntactic features, on par with what distinguishes nouns from verbs, plurals from singulars, nominative from accusative case, and so on. They are interpretable (like gender, number, and so on), but still syntactic. Let me mention a few of the many reasons this is the standard assumption. One is that there are clear relations between accent placement and syntax. As Selkirk (1995) observed, there is a preference for a phrase to be marked by an accent on its internal argument, and not its head:

(5) a. What did John do?
    b. John drank BEER.

This is entirely felicitous. However, the question-answer congruence indicates that the focus is the verb phrase *drank beer*, while the perceived prominence is on *beer*.[12]

There are a number of other reasons. One is the much-discussed phenomenon of 'second occurrence focus', where semantically a focus is present, but no pitch accent is recognized (Beaver & Clark, 2008; Beaver et al., 2007; Partee, 1991). Also, it is an old observation that focus seems able to affect grammaticality (Jackendoff, 1972). And more recently, important connections between focus and ellipsis have explored (Merchant, 2001; Rooth, 1992). A number of authors have noted the role of information structure

[12]This is the phenomenon usually called focus projection. Theories have changed since Selkirk's seminal work, due to the influence of Schwarzschild (1999). For overviews, see Beaver & Clark (2008), Büring (2016b), or Kadmon (2001).

in the syntax of copular clauses (e.g. Heycock & Kroch, 2002). The persistent connections between syntax, focus and other elements of information structure, and accent placement make a general case that there are syntactic features realized by accents serving information-strutural functions. Finally, there are big-picture reasons. Many models of how syntax relates to semantics and phonology hold that semantics and phonology cannot see each-other, and so there must be features in the syntax before phonology and semantics split that can affect both. All together, these pieces of evidence, and others, have led to the standard assumption that information structure is marked in syntax and realized in some languages by accent.

Important at this is, it does not by itself give us any reason to place information structure any more finely in the levels. Merely having something in syntax, and something in meaning associated with it, tells us little. It is compatible with full Lewisian convention. After all, our example of a Lewisian convention is associating a meaning with a word. A word certainly has a morphosyntactic reflex, as there is a lexical entry for it, with all its features. That is what is associated with a meaning. Likewise, early word learners already individuate words, so level 2 is also associating meaning with syntax. Level one is mostly about the syntax, but if we count the meanings of functional expressions as level 1 too, then we can just as well see information structure as part of level 1 (I think we should!). Thus, we have an argument for conventionality, and a link to syntax, but that is not, enough to place information structure at any particular level.

Even so, the robust role of syntax in information structure is at least a clue that maybe it can be placed at lower levels. To explore this, we must turn to a more detailed examination of one element of information structure.

4 Topics

The element I shall explore is the notion of *topic*, sometimes called or *theme*. This notion often pairs with the notion of *focus*, and in English, is typically marked by a distinctive pitch accent.[13]

The clearest instance of topic in English is what is now often called *con-*

[13]The term 'theme' is used by Daneš (1968), Firbas (1964), and Halliday (1967), and is picked up by Steedman (1991). I am not sure who started the use of 'topic'. It appears in Reinhart (1981). The corresponding term 'focus' is discussed by Halliday (1967) as well, and is extensively discussed by Jackendoff (1972) building on Chomsky (1971).

trastive topic. It is illustrated by the following sort of example: (Büring, 1999, example 15):

(6) What did the pop stars wear?
   a. [The FEMALE pop stars]$_{CT}$ wore [CAFTANS]$_{F}$.
   b. # [The FEMALE pop stars]$_{F}$ wore [CAFTANS]$_{CT}$.

Notice that to felicitously utter (6a), a specific intonation pattern is required. The initial DP *the female pop stars* requires a distinct kind of 'fall-rise' tune, while the final *caftans* has a high tone, and then falls.

To fill in just a little more detail, the tune on *the female pop stars* is what Jackendoff (1972) following Bolinger (1958) called the B-accent, and the one on *caftans* is the A-accent. These are typically associated with an L+H* and H* pitch accent,[14] respectively. I already mentioned that the associations of pitch accent to information structure are complicated, but nonetheless, there are intonational markings that speakers perceive, and perceive differently, in the A and B patterns.[15] The A or H* marking indicates new information answering the question asked. This typically indicates *focus*. The B or L+H* marking indicates *aboutness*: the claim is about the female pop stars. But contrastive topic marks aboutness in a complex way. It is what the sentence is about, but also further specifying something about the topic the question set. Hence, in the case above, it marks a move from pop stars to female pop stars.

In keeping with observations from section 3, and following Büring (1999, 2003), I assumed that there is a syntactic feature *CT* on topic phrases. And, as we saw there, there is an immediate argument for conventionality of the meaning of this feature. But, as we also saw there, this argument does not fix at what level the convention falls. There is a weak argument to be made for an effect from level 1. The syntactic marking of topic (and focus) seems to be something we are only implicitly aware of. Hence, it is hard to see how the mechanisms of Lewisian convention, or word learning, could be brought to bear. This is weak, as of course we are aware of the intonational marking of information structure. So, even if the syntax-phonology mapping is driven

[14]This way of representing accents follows Pierrehumbert (1980), Beckman & Pierrehumbert (1986), and others. See Ladd (1996) for an extensive overview. L marks a low tone, and H a high tone, while the $*$ indicates the tone is aligned with a stressed syllable.

[15]See, among many sources, Büring (2003), Kadmon (2001), Pierrehumbert & Hirschberg (1990), Steedman (1991, 2000), and Vallduví & Zacharski (1994).

by level 1 conventions, status of the meanings attached to intonation remains undecided.

Even so, we have a hint of a level 1 effect, and I believe there is more we can say to make a case for level 1. To do that, we need to examine the notion of topic, and especially its relation to syntax, more closely.

5 The Syntax of Topic

Many languages mark kinds of topics in purely syntactic ways. To think about the status of topic as conventional, we should pause to note some examples of how that happens.

One comment first. The differences between topic generally and contrastive topic in particular are subtle, as are many information-structural phenomena. This is especially so as we look cross-linguistically. I shall try to keep track of these differences as we go. The first subject we will explore is topic in languages that mark it clearly syntactically. We will ask later how closely this relates to contrastive topic marked intonationally in English.

It has become quite common to see distinct syntactic positions glossed as topic positions. In many languages, these positions play an important role in word order and other overt syntactic phenomena. I shall discuss two influential cases for such positions, in Hungarian and Italian, and I shall briefly review the case for a topic position in English as well. This barely touches upon the range of languages for which topic positions have been proposed, which also includes Gungbe (e.g. Aboh, 2004), Japanese (e.g. Watanabe, 2003), Korean (e.g. Choe, 1995), and Modern Greek (e.g. Tsimpli, 1995), among many others. Yet, the cases of Hungarian and Italian are good representatives of the highly developed views in the current literature, and they will lead naturally to a brief discussion of English.

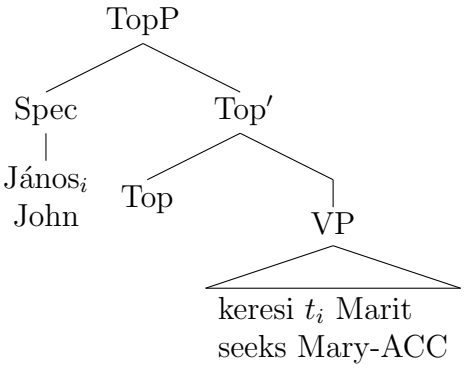
5.1 Hungarian

The idea that there are distinguished syntactic positions for the information-structural elements of topic and focus has been an important idea in Hungarian linguistics. A great deal of work on Hungarian identifies a pre-verbal focus position, which following Brody (1990), is frequently analyzed as a FocP (Focus Phrase) position. For our purposes, the important fact is that Hungarian also displays a fixed pre-verbal topic position, often analyzed as

TopP (Topic Phrase). So, the analysis holds, there is a functional projection for topic; or more simply, there is a full syntactic position for topic, obeying the same rules as other syntactic positions. I shall present a few facts about the topic position, and its analysis as TopP. My presentation will follow that of É. Kiss (2002).[16]

Hungarian word order facts distinguish a pre-verbal syntactic position, that is often analyzed as a topic position. It is generally assumed that phrases occupy this position after moving from a position inside the vP. Frequently DPs are topics, but PPs and some APs can also occupy topic positions. Following É. Kiss (2002, ch. 2 example 10), we have:

(7)



According to É. Kiss (2002), topic movement is an A′-movement, but the exact nature of the movement will not matter to us here. All that we will suppose is that a topicalized phrase originates in the predicate, and moves to topic position somehow. Topic is different from the argument positions assigned by a verb, as subjects and objects can both be topicalized.

We can see the topic position as partitioning a sentence into a topic-predicate structure (also sometimes called a topic-comment structure). The predicate, or more properly, the complement of Top^0, is robustly individuated in Hungarian. The main stress of the sentence falls on the first constituent of the predicate. The topic indicates what the sentence is *about* (hence its being called a topic). The predicate functions to comment on what the sentence is about.

There are a number of important features of the topic position, i.e. the specifier of TopP itself. Still following É. Kiss (2002), we can observe that it requires a DP that is both referential and specific (i.e. the position carries

[16]Among many other references, see É. Kiss (1998, 2007), Puskás (2000), and Szabolcsi (1981, 1997); but see Surányi (2004) for a dissenting view.

features [+referential] and [+specific]). The referential requirement reflects the fact that for the most part, quantifiers cannot be topics (É. Kiss, 2002, ch. 2 example 4):

(8) a. * [$_{\text{Topic}}$ Kik][$_{\text{Predicate}}$ meg védték a várant a törökök
who-PL VM defended the fort-ACC the Turks
ellen]?
against
'Who defended the fort against the Turks?'

b. * [$_{\text{Topic}}$ Kevés várat] [$_{\text{Predicate}}$ meg védték a
few fort-ACC VM defended the
zsoldosok a törökök ellen]
mercenaries the Turks against
'Few forts were defended against the Turks by the mercenaries.'

The specificity requirement reflects the fact that in some cases, indefinites can be topics, if they are given an appropriate specific reading (É. Kiss, 2002, ch. 2 example 5c):

(9) [$_{\text{Topic}}$ Egy autó] [$_{\text{Predicate}}$ meg állt a házunk előtt]
'One of the cars has stopped in front of our house.'

The topicalized *egy autó* is understood as specific, in that it picks out a car that is already familiar in the discourse, even if it is an indefinite. É. Kiss (2002) glosses this as specificity in the sense of Enç (1991), which in turn is spelled out generally in terms of the novelty and familiarity conditions of Heim (1982). But the main idea is simple enough: specifics (including specific indefinites) pick out something or things that are already appropriately salient in the discourse, and so, something that is *familiar* in Heim's sense. But unlike definites, specifics need not function as if they were anaphoric on an already identified familiar discourse referent. It is sufficient for specificity that an identifiable familiar referent be available. Hence, specifics are subject to a somewhat modified form of familiarity. In this way, specificity is close to, but not the same as, definiteness. In virtue of moving to a topic position, specific DPs (including specific indefinites) effectively take wide scope (cf. Szabolcsi, 1997), but as they are already functioning to pick out some individuals, they are not really functioning as scope-taking operators to begin with.

There are a number of ways in which the requirements of referentiality and specificity need to be treated with care. In addition to issues of specific

indefinites, generics can be topicalized when they are understood as referring to kinds. Contrastive topics allow a surprising range of topicalized elements, including some universal quantifiers. According to É. Kiss (2002) following Szabolcsi (1983), when they do so, they function to pick out a set or property, and so basically function as [+referential] and [+specific].

There are a few other properties of the topic position in Hungarian we should note. It is recursive, and so a sentence can have multiple topics (in contrast to the focus position, which is not). Not every sentence in Hungarian needs to have a topic. Among those that do not, again following É. Kiss (2002, ch. 2 examples 13a,b), are those expressing general existence, or creation, or arrival, such as:

(10) a. Van elég pénz.
is enough money
'There is enough money.'

b. Született egy gyerek.
was.born a child
'A child was born.'

These constructions reveal something akin to well-known indefiniteness effects; but for our purposes, we can rest with the observation that they do not have topic constituents. Topic-predicate articulation appears to be widespread but optional (in overt syntax) in Hungarian.

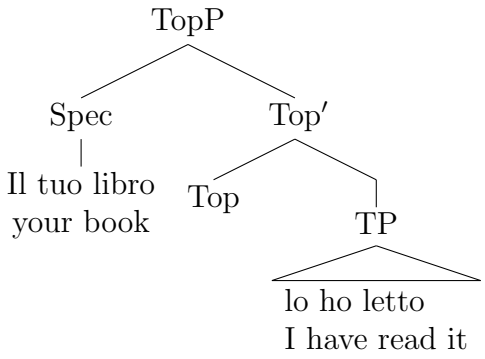
I have very briefly reviewed some facts about Hungarian, following work of É. Kiss (2002). I have done so to illustrate the way a notion of topic can appear in syntax. It appears there is a well-defined position in the syntax of Hungarian, which has here been analyzed as the Specifier of TopP. We see this position in the overt syntax of Hungarian, and do not need to appeal to semantic properties of topichood to identify it. Even so, it does have some fairly clear semantic features, which were glossed as [+referential] and [+specific]. The syntactic partition into topic and predicate provides a predication structure, and the topic is understood as the 'logical subject of predication' (É. Kiss, 2002, 2007) and as what the sentence is *about*. Aboutness, as we will discuss in a moment, is the key information-structural aspect of topic. Thus, Hungarian shows us that the information-structural notion of topic can be linked not just to a feature, but to a full syntactic projection.

5.2 Italian

Another language that has been argued to reveal a distinguished topic position in overt syntax is Italian, and more generally Romance languages. Following work of Cinque (1990), Rizzi (1997) argues that a topic-comment structure is displayed by the *clitic left dislocation* (CLLD) construction in Italian and other Romance languages. I shall briefly review Rizzi's conclusions, and note that they are strikingly in line with the facts about Hungarian.[17]

In the CLLD construction, Rizzi argues that the left dislocated phrase occupies Spec of TopP, much as we saw in Hungarian (Rizzi, 1997, example 3):

(11)



The clitic *lo* helps to distinguish this construction from a related focus-fronting construction. In the focus construction, the fronted constituent bears a pitch accent, and the clitic is not allowed. Left dislocation of topics from object position requires the clitic, while apparently it is optional with topicalized subjects.

So far, we have a specifier of TopP position, which forms a 'high' subject of predication position to which DPs can move, much as we saw with Hungarian. Also as with Hungarian, quantifiers cannot be topicalized in CLLD, except in extraordinary circumstances. Rizzi (1997, example 19b) notes:

(12) * Tutto, lo ho fatto.
'Everything, I did it.'

Rizzi also notes the lack of weak crossover effects with CLLD, which is a mark of lack of quantificational force. This is consistent with the observations in

[17] This point is also argued in depth by Puskás (2000).

Hungarian that though we might have an A′-movement, it is not quantificational, and rather involves a referential and specific phrase. As Rizzi notes, if we follow the distinction between quantificational and non-quantificational A′-dependencies of Lasnik & Stowell (1991), this is just what we should expect.

As with Hungarian, CLLD in Italian does allow topicalizing quantifiers in some special cases. According to Rizzi (1997, example 34c), we can have:

(13) Tutti i tuoi libri, li ho rimessi a posto.
'All your books, I put them back.'

Rizzi himself offers a syntactic analysis of this phenomenon, effectively putting the restrictor of the quantifier in topic position. But it is tempting to speculate that there may be similar interpretive restrictions to those reported for Hungarian. It is thus tempting to speculate that there may well need to be a salient set of elements, which underlies the interpretation of the restricted quantifier, but also to which the topicalized phrase is understood as in effect referring (cf. Puskás, 2000).

Cross-linguistic comparisons of information-structure notions can be delicate; but still, the similarities between Italian and Hungarian are striking. Both seem to provide for a high topic position, which produces a topic-predicate articulation well above the vP level. Both require essentially non-quantificational elements to be topics, and only allow quantifiers when they receive marked or specific readings. The gloss as 'logical subject of predication' appears to be apt for both languages. In both cases, the topic position plays a central information-structural role of marking what the sentence is about.[18]

5.3 English

So far, I have reviewed literature indicating there are distinguished topic positions in Hungarian and Italian (or more generally Romance), and I have suggested that they show broadly similar behavior. The case for English is

[18]This conclusion is also reached by Puskás (2000). She takes the stronger position that where Italian CLLD has an overt clitic, Hungarian will rely on a null *pro*, which can be identified via the morphological case system of Hungarian. I do not need this stronger claim about the internal syntactic structure of topicalization, but it does add strength to my conclusion that topic in Hungarian and Italian can be treated as roughly the same.

somewhat more delicate, but I shall review reasons to see a topic position in it as well.

There is a widely discussed *topicalization* construction in English, such as:

(14) This book, you should give e to Paul.

The distribution of topicalization in English is somewhat uneven, and there is some variation among speakers, but this sort of construction is widely enough attested to be confident that it is allowed, in at least some forms.

The analysis of English topicalization has been a contentious issue. Even so, it can be brought in line with the analyses of Hungarian and Italian we have seen, as has been argued by Cinque (1990) and Rizzi (1997). Effectively updating Chomsky (1977), they propose that the fronted DP occupies the specifier of TopP, as it does in Hungarian and Italian CLLD. Chomsky crucially argued that there is a null operator mediating between the topic phrase on the left and an empty category in TP. We thus have something like:

(15) $[_{\text{TopP}}$ This book OP_i [you should give e_i to Paul]]

Interestingly, Rizzi suggests that in CLLD, the function of the null operator in the English topic construction is is taken up by the resumptive clitic in Italian, and that generally, languages opt for either the null operator or clitic strategy for encoding topic. Either can create an appropriate link between the topic phrase and the open position in the TP.[19]

English imposes semantic constraints on the constituents that occupy the topic position that are, again, strikingly reminiscent of those we saw in Hungarian. The rich data set of Birner & Ward (1998) suggests that topics in English require an element or set of elements they pick out to be identifiable in the discourse (with additional complications for contrastive topics). Indefinites can be topic when they meet this condition (Ward & Prince, 1991). These conditions are in line with the [+referential] and [+specific] conditions

[19]There are other sorts of considerations that can be brought to bear to argue for a topic position in English. For instance, Beghelli & Stowell (1997) and Szabolcsi (1997) suggest that the differential scope potentials of quantifiers in English can be accounted for by providing a highly articulated left-peripheral structure, including a position that is effectively a topic position, to which, among things, specific indefinites move to take wide scope. I have focused on Rizzi's arguments, as they are parallel to those we have examined for Italian. The Chomskian analysis that Rizzi and Cinque essentially follow has been challenged, for instance, by Lasnik & Saito (1992).

we saw above, and at least roughly, it appears safe to assume that English shares with Hungarian and with Italian some strong constraints on the interpretation of topic phrases.[20]

I have now reviewed a few details of select syntactic analyses of topic constructions in Hungarian, Italian, and in English. There are a number of details in each analysis, and a number of potentially interesting cross-linguistic variations, which I have only barely touched upon, and have explored only enough to state the basic elements of each analysis. But these elements do indicate that there is plausible reason to take syntax to include a distinguished topic position. It should also be noted that usually, evidence of a syntactic projection in some languages is also (highly partial!) evidence that languages that mark things differently can also contain such a projection. Thus, it is some evidence that languages that mark topics morphologically, or by intonation, might still have a full projection for topic, and not just a morphosyntactic feature.[21]

We have also seen that this position is reasonably called a topic one, as it does relate to what the sentence is about. It provides a 'logical subject of predication', which picks out a given or familiar element. In keeping with this, the position is marked with features requiring something like a specific reading. Identifying a syntactic projection for topic adds some more evidence in favor of topic being a level 1 notion. We already generally supposed there are some syntactic features corresponding to information structure, but in seeing how topic can affect word order, we see that it is clearly part of grammar in the core or austere sense we described above, and so at least the syntax is very likely at level 1. But the case so far is weak, as it leaves open that the semantics could be fixed by conventions at any level. Our observations so far have been about referentiality and specificity, which square well with the posited information-structural role of topic. It is likely that these are marked in the grammar too, and so could be level 1. But this leaves open whether the interpretations of these features is level 1, 2, or 3. More importantly, it leaves open the possibility that the syntax and minimal semantics of specificity is low level, but that speakers may later form level

[20]Even so, we should be careful in supposing the constraints are exactly alike. English is very permissive in the constituents it allows to be preposed (Birner & Ward, 1998), and it is doubtful that every preposing is a TopP-like construction. Indeed, so-called 'Yiddish dialects' of English are extremely permissive in preposing in many ways (Prince, 1981a).

[21]For a treatment of topics in a very different framework from the Chomskian one supposed here, see Steedman (2000).

3, fully Lewisian, conventions to add the information-structural function of topic marking. Indeed, speakers of languages like Hungarian would have a much more clear sense of which positions are topic ones, and so could much more easily engage in Gricean reasoning about them.

I think this is likely not so. To see some reasons why, we should turn to the semantics of topichood itself.

6 The Semantics and Pragmatics of Topics

We have noted that the topic position, when visible, is associated with an information-structural content of *aboutness*, which I have roughly glossed as making something given or familiar in a discourse. It is associated with some particular semantically interpretable features, including referentiality and specificity. These are not themselves sufficient to fix the content of topic positions, as clearly specificity, referentiality, and so on appear in non-topic positions as well. In this section, I shall briefly review some ideas about what the distinctive content of topic positions is. I shall be brief, as the theories of topic get very complicated, and what we need for our purposes is only the general idea of what the content of these positions might be like.

6.1 Topics and Aboutness

We will intuitively find that a sentence is 'about' whatever occupies the specifier of TopP. In languages like English, absent other marking, we will often think of the sentence as about its subject or even as about its first DP in linear order.[22] This sense of aboutness for topics is stronger than simply being an argument of a predicate. Though Hungarian and Italian allow multiple topics, the aboutness understanding is not attached to all the arguments of a verb, only the ones that occupy topic positions.

There have been a number of attempts to build such intuitions into a genuine semantics for topichood. Most of these attempts rely on some some kind of structured representation of the content of a sentence, which singles out some element as what the sentence is 'about'. This is naturally captured in the apparatus of dynamic semantics, as a distinguished index to a file in the

[22]It is sometimes suggested that subjects are unmarked topics. More systematically, the tradition of Halliday (1967) identifies topics (more properly *themes*) with sentence-initial elements.

sense of Heim (1982) or a DRS in the sense of Kamp (1984). Such approaches are pursed by a number of authors. Notably Vallduví (1990) uses a DRT-like structure to capture what he views as a distinguished level of information structure (making the representational properties of DRT essential), while Portner & Yabushita (1998) and Reinhart (1981) pursue non-representational approaches more akin to file change semantics.[23] For our purposes, the details of these theories will not matter. All we need is to suppose that semantically, topic distinguishes an individual (or other element), which is the thing the sentence is about.

6.2 Old and New

The idea that the topic marks what a sentence is about goes together with some ideas that are, perhaps more clearly, related to information structure. First, it is a common idea that what a sentence is about should be *old information*, that was already established in a discourse. This is sometimes described as the idea that what the topic is should be *given*, rather than new. The idea is that what we talk about in discourse is not typically any random thing, but an established topic. Thus, what the sentence is about should be given or old in the discourse.

This has been elaborated in different ways by different theories. Some seek to characterize directly what it is to be given, in terms of either being familiar to the speaker, or having been evoked or made salient in the discourse.[24] Topics, on this picture, have a discourse function of linking sentences in contexts to old information in the discourse.

6.3 Questions under Discussion

A related idea about the semantics of topic, but one that has been given a much more extensive formal development, is in terms of questions and answers. The idea is that sentences are uttered in the presence of a discourse topic. Rather than thinking of a discourse topic as a thing, think of it as like a question, that sets what we are talking about. The discourse topic

[23]See McNally (1998) for some discussion. The idea of 'aboutness' as a characteristic of topic is quite common, though it is often put in more pragmatic terms, as a relation between a speaker and the thing they are talking about (cf. Gundel, 1985; Strawson, 1964).

[24]Prince (1981b) gives a good overview of these ideas. See also Birner (1992), Birner & Ward (1998), Chafe (1976) Prince (1992), Schwarzschild (1999), and Ward (1985).

may be set implicitly or explicitly, and when set explicitly, it is set by asking a question. Following Roberts (1996), we may call this the question under discussion (QUD). The sentence is supposed to be *about* the QUD, acting as a discourse topic, and so the topic of the sentence must in the right way be congruent to, or match, the discourse topic.

This captures a clear notion of aboutness, and it also captures a specific sense in which topics can be said to be old information, as they must relate to an already established discourse topic. Hence, we do not need to see this idea as conflicting with the motivations of either the aboutness or old information approaches. But, it allows for an elegant formal model of the semantics of topic, and relates closely to work on the semantics of focus. Topic, especially looking cross-linguistically, is a complicated matter, so I would hardly be surprised if aspects of all these approaches are needed before a theory is completed. But still, to my mind, the question approach holds a lot of promise.

Here is a simple sketch of this approach. Consider a topicalization again:

(16) a. i. What should I do with this book?
ii. This book, you should give to Paul.
b. i. What should I do with this pen?
ii. # This book, you should give to Paul.

Here the overt question sets up the QUD. Semantically, a question is interpreted as a set of answers (Groenendijk & Stokhof, 1984; Hamblin, 1973). Very roughly, ⟦What should I do with this book?⟧ looks something like {⟦Give book to Paul⟧, ⟦Take book to library⟧, ⟦Use book as decoration⟧, . . .}. The topic constituent sets up a requirement that semantic value of the topic-marked sentence has to be in the value of the QUD, i.e. ⟦This book, you should give to Paul⟧ ∈ ⟦What should I do with this book?⟧. This is satisfied in the felicitous case, but it fails in the infelicitous case, as the QUD value is {⟦Give pen to Paul⟧, ⟦Use pen to write⟧, . . .}. I should note that this illustration is vastly over-simplified, and that in fact, the most interesting QUD-based analyses really address contrastive topic better than the kind of (resumptive) topics we are looking at now. But still, it is an important idea about the semantics and discourse function of topics generally.[25]

[25] A real theory in this vein is given by von Fintel (1994), though using the framework of Rooth (1992) rather than the QUD framework. Related ideas about QUD are found in

We have now seen some ideas about what the semantics of topic might be. I do not think there is yet a full consensus on what the right semantics is, and it may be that ideas from several of the approaches we just reviewed could combine to build a refined analysis. But, we have seen enough to see what the semantics of topic may be like. Not surprisingly, it is much like what we would expect for the semantics of functional projection. It provides an abstract aspect of meaning, and does describe things and actions the way nouns and verbs do.

With some ideas about the syntax and semantics in hand, we can now try again to see what level of conventionality it falls in.

7 The Conventional Status of Topic

Above I noted that the presence of a syntactic projection for topic opens the possibility that it is a level 1 phenomenon. It seems to be a robust syntactic phenomenon, that could really be part of UG and set parametrically. But I also noted that even if the syntax of topic is part of UG, that does not establish that the information-structural content is a level 1 convention. It is still open, as we saw, that this could placed at any level.

I think there is more we can say in favor of placing topic lower in the scale of conventions. First, the semantics of topic suggests lower level conventions. As I just mentioned, topic gets just the kind of meaning we should expect for a functional projection. It is a specific, but highly abstract content, encoding in some way the information-structural function of being about. We are not sure just how to characterize that, but it is clear enough that the semantics of topic positions are one of a few abstract information-structural contents that language encodes. This is much like the situation with other functional projections, like tense or determiners. I should also note that it is not clear how much variation there is in the semantics of topics across languages. It might be that with some limits, we have differences between say Japanese and Hungarian. But again, we do not see free variation, as best as we can tell. Simply a small range. This suggests parametric variation, in keeping with level 1 convention.

That raises the possibility that topic really is a level 1 phenomenon. It does not conclusively show it is. It may be that the semantics of topic encoded

Büring (1999), van Kuppevelt (1995), and of course, Roberts (1996). The most developed theory I know is from Büring (2003), which we will discuss later.

in UG is quite minimal. As I already mentioned, it might be that it is merely marked as specific, or something along those lines. Then the full semantics would have to be learned, and we would have a level 2 or 3 phenomenon. The abstractness of the content, and consistency with the contents of other functional expressions, makes me doubt it is level 3. It could be that the mechanisms that first allow us to learn word meanings, with less than full Lewisian conventional status, are engaged to learn these contents. It might thus be a combination of some level 1 content, and some level 2. But in general, the kind of learning distinctive of level 2 pertains to the lexicon, and not to functional categories. Functional category meanings are closed classes, whereas the strategies for word leaning, even early word learning, lead to open classes. If we associated meanings with the topic position the way we associate meanings with nouns, we might expect to be able to add more of them as our interests grow. Why is there not an information-structural notion of 'being something I read on the internet', which might interpret a topic or other position? That seems not to be possible, in keeping with the idea that functional category meanings are level 1.

So, I am inclined to think we see level 1 information structure in the case of topics. Though this cannot be said with certainty, it seems like the likely result, and there is some substantial evidence to support it.[26]

8 Contrastive Topics

With this in mind, let us turn to the original issue, of the kind of contrastive topic that is marked by the B-accent in English. I think the case for topic being level 1 indirectly supports the claim that contrastive topic is also level 1. It is a closely related phenomenon, so it is likely that they fall at the same level.

Even so, contrastive topic raises some specific issues, which we should look at more carefully.

Contrastive topic is called topic, as it signals aboutness. But as its name suggests, it also signals a kind of contrast. This is made vivid in the question-answer congruence of the original example from Büring (1999):

(17) a. What did the pop stars wear?

[26]Evidence about the acquisition of topic would be helpful. I am afraid I am not aware of much.

b. [The FEMALE pop stars]$_{CT}$ wore [CAFTANS]$_{F}$.

The topic the sentence is about refines the one set by the QUD. But contrastive topic is compatibile with the devices we have to fix topic in English. For instance:

(18) Well, as for [the FEMALE pop stars]$_{CT}$, they wore [CAFTANS]$_{F}$.

Intuitively, in the felicitous (18), the utterance is about *the female pop stars*, as signaled by the *as for* construction, and by the question the felicitous utterance is directed towards. The focused constituent *caftans* provides the information answering the question. Contrastive topic intonation is infelicitous with overtly resumptive topics::

(19) a. What did Max wear?
b. ?? [MAX]$_{CT}$ wore [a CAFTAN]$_{F}$.

This is generally judged bad (though there is some variation in the judgment). It thus appears that contrastive topic both signals what an utterance 'is about', but also signals some contrast with something already under discussion.

The intonational marking of contrastive topic in English—the occurrence of B-accent or an L + H* accent—is independent of the topicalization construction in English. It can occur, for instance, in both subject and object position of simple sentences. We find, with the right questions in place, the following are acceptable, as Jackendoff (1972) essentially noted:

(20) a. We have a bunch of people, and we want to know who ate what?
b. [FRED]$_{CT}$ ate [the BEANS]$_{F}$.

(21) a. We have a bunch of food, and we want to know who ate what?
b. [FRED]$_{F}$ ate [the BEANS]$_{CT}$.

But it appears that English topicalization can host contrastive topic accent:

(22) a. Who should I give these things to?
b. [This BOOK]$_{CT}$, you should give to Paul.

Many similar examples can be found in corpora (see Birner & Ward, 1998). Many researchers have concluded that contrastive topic and topic are related information-structural phenomena, but not the same (e.g. Büring, 2016a; Roberts, 2011).

Semantically, the most well-developed accounts concentrate on question-answer congruence and QUD, and indeed, those accounts really emerged in studying contrastive topic. Büring (2003) presents the most developed account I know. It works with a richer structure of discourse, involving not just with questions and answers, but with whole *strategies* for answering questions. A strategy is a question and a set of subquestions that address it. A contrastive topic indicates a strategy around the current question under discussion, and answers one of the sub-questions in the strategy. Thus, for instance, if our question under discussion is *Who ate what?*, we find that (20b) indicates a strategy of answering *What did Fred eat? What did Mary eat? ...* and answers the question of what Fred ate.[27]

Contrastive topic appears widely cross-linguistically. As in English, Hungarian contrastive topics, bearing what appears to be the same accent, can occur in TopP positions (Molnár, 1998). Quantifiers appear easier to topicalize with contrastive topic marking.

I am not sure what the status of contrastive topic marking in Italian CLDD is. It may be incompatibel with the $L + H^*$ pitch accent, though it seems to host other accents (Bocci, 2007). Complicating matters further, it has been suggested that for some language, such as Spanish (Arregi, 2003) and perhaps Modern Greek (Alexopoulou & Kolliakou, 2002), CLLD constructions act like contrastive topics. Hence, caution is in order, and this illustrates how complicated the cross-linguistic situation can be. We should also mention, finally, the possibility that where we find *in situ* marking of contrastive topic, it might be that we have covert movement to a topic position.

With this brief overview, we can return to the question of what level contrastive topic, marked intonationally, should be placed at. Though it is likely that contrastive topic is a distinct information-structural notion from topic simpliciter, we still have good reason to suspect it is at level 1, as I suggested topic positions may be. The same reasons that supported placing syntactically marked topic at level 1 still support placing contrastive topic there too.

Syntactically, we do not have a full projection, and see somewhat limited effects on word order. But we still have good reason to posit a syntactic feature CT, as we discussed above. Does this place contrastive topic within the

[27]Contrastive topic raises some complicated questions for old information accounts, but I shall not explore this issue here.

scope of UG and parameters? Even if the evidence is weaker, as I mentioned, we can argue that if one aspect of information structure is clearly within UG, then it is plausible that closely related ones are too. So, we might conclude, UG knows about topic, focus, and so son.

Semantically, the case for level 1 is just as before. The meaning of topic, both contrastive and resumptive, is the kind of meaning we expect for a functional category, and not the kind that goes with open-class lexical items. This, plus the closed-class nature of intonational meanings, still suggests a level 1 phenomenon.

In this case, facts about acquisition might add some further support, though the situation is not entirely clear. It is known that children are sensitive to some aspects of prosody very early—as early as 3 or 4 days (cf. Guasti, 2002; Speer & Ito, 2009)! What the recognize at this age seems to be more the general tonal structure of their language; but nonetheless, anything that emerges this early seems likely to be part of UG. Thus, lacking over syntax does not indicate that we have gone outside of austere grammar. As the survey by Speer & Ito (2009) makes clear, studying accent in children has proved challenging, and its development is not fully understood. But they note studies that place sensitivity to accent around 6 or 8 months. When children understand the meaning of accent is less clear. Speer and Ito review studies that suggest perhaps by age 2, some intonational meaning is acquired. But they also note that children display puzzling asymmetries between comprehension and production of accents, and even 5 year olds or older showed significant difficulties in comprehending the meanings of some accents. They speculate that the role of context in information structure makes on-line comprehension harder (and certainly makes it harder to design good experiments). So, the limited evidence on acquisition makes it reasonable that accent itself is level 1, but the meaning of accent could still be at any level.

As with syntactically marked topic, I think there is a plausible case to be made for placing contrastive topic at level 1. The case is certainly not conclusive, and as I mentioned before, it remains possible contrastive topic could be at higher levels (as some of the acquisition data might suggest?). And, we should also leave open the possibility that it is an overlap of level 1 and higher phenomena, as the ways contrastive and syntactic topic can overlap might suggest. But still, I think the evidence pointing to level 1 is substantial.

9 Conclusion

I have followed Lepore and Stone's lead in viewing much of language as conventional, including information structure. But I have also argued that it is useful to distinguish a range of levels with the broad category of the conventional. I then attempted an exercise of placing a phenomenon within those levels. In particular, I argued that the information-structural notion of topic might well be at level 1.

I made this claim in a limited way. I argued that there is evidence that makes the level 1 status of topic plausible, but there is also evidence that suggests other levels, and the result is not conclusive. This is not really surprising. Information structure, as I mentioned, is not only very complicated, but takes in an incredibly wide range of aspects of language, from phonology to syntax to semantics to pragmatics. Our understanding of this has increased over the years, but remains incomplete. Even so, I think the exercise is productive. It illustrates how we can sort evidence from multiple domains, to try to understand the nature of a complex linguistic phenomenon.

With Lepore and Stone, I agree that recognizing the conventional status of aspects of language is a crucial step to understanding them. But I think it is the first step, and there are more to go.

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