Conventional speech act formulae in HPSG[1]

Ann Copestake and Marina Terkourafi
University of Cambridge

1 Introduction

This paper concerns the representation of formulae which conventionally encode particular illocutionary forces. We start by illustrating the idea of a formula intuitively with reference to well-known examples in English. In context, both (1) and (2) can be interpreted as requests to close a window, but (2) is intuitively more conventional/ formulaic than (1):

(1) It's cold in here.
(2) Could you close the window?

The assumptions that we will make about formulae are compatible with the idea that they are conventions of usage as discussed by Morgan (1978). However, Morgan and most subsequent authors are vague on the precise characterization of convention and the empirical criteria by which something is to be classified as conventional. Our own work is based on a corpus of over 2,000 recorded spontaneous exchanges in Cypriot Greek (hence CG) described in Terkourafi (2001). This is probably the most extensive survey that has been carried out for any language where the full context of natural interactions was directly observed (as opposed to studies on previously collected corpus data or experiments with artificial tasks). We discuss Terkourafi's data and her empirically-grounded notion of formula further in §2. There has been one previous attempt at representing this data in HPSG (Terkourafi and Villavicencio, 2003): we will discuss the differences between this and the approach suggested here below.
A defining characteristic of HPSG is the assumption that it should be possible to represent semantics and pragmatics as well as syntax. There has been relatively little work on pragmatics in HPSG and, in fact, we do not wish to argue that a full account of pragmatics should be encoded within HPSG, if only because support for the sort of inferences required to interpret utterances such as (1) requires full-blown reasoning over meaning representations from utterances, non-linguistic context and general world knowledge which does not fit well into an essentially sign-based account. However, to the extent that illocutionary force is conventionally associated with particular lexemes or constructions, it should be possible to derive it within an HPSG.

2 The formulae

Terkourafi's data shows that particular formulae preferentially realize particular speech acts (she considers offers and requests). Most of her formulae are grounded in particular lexemes, especially inflected verbs rendered with a particular accent and intonation. Imperatives may also be formulaic, and in this case need not involve a

particular lexeme. The main criterion for identifying a formula is frequency in a context, but evidence of lexicalization is also taken into consideration. Terkourafi (2001) discusses this extensively and we can only give a brief sketch here. Extra-linguistic features (speaker's and hearer's gender, age and social class, the relationship between them, the setting of the exchange, and the sequential placement of the utterance in the discourse) affect the distribution of formulae. For instance, *tha ithela VP* (lit., I would want to+V) is the most usual method for interviewees in formal interviews to make requests (3) and occurs far more often in formal interviews than in other situations in the corpus.

(3)   [On TV; Speaker: female, aged over 51, middle-class; Addressee: male, aged 31-50, middle class; Relationship: interviewee to interviewer]

tha ithela   *na prostheso   kati edho omos*
FUT want.1sg.past   SUBJ add.1sg something here though
'I'd like to add something here though'

In contrast, the formula *thelis NP/VP?* (Do you want NP/to VP?) is found in a wide range of contexts, in each of which it is the most frequent realization of an offer. For this formula there is direct evidence of lexicalization, for instance, the reduced phonology indicated in (4):

(4)   [In a shoe-shop; Speaker: female, aged 18-30, working-class; Addressee: female, aged 18-30, middle class; Relationship: acquaintances]

'lis kafe? (.) indalos in' o kafes su?
want.2sg coffee? How is the coffee your?
'Do you want coffee? How do you take your coffee?'

thelis NP/VP? occurs utterance-initially in over 90% of instances in the corpus, the only items that can precede it being address terms, or the conjunction lipon ('so').
        One standard argument for treating some English request forms as conventional is the different distribution of *please* with examples such as (1) and (2). A similar pattern holds in CG: *parakalo* (formal 'please') and *ligho* (informal 'please') do not sound natural with non-conventional requests such as (5):

(5)   [At a meeting of the philatelic society; Speaker A: female, aged over 51, middle class; Speaker B: male, aged over 51, middle class; Relationship: old colleagues]

A: *e niko? echo edho ta eksodha tis italias* (.)
B: *ne*
A: hey Nick? have.1sg here the expenses of-the Italy
B: yes
A: 'Hey Nick? I have the expenses from Italy with me.'
B: 'Yes.' (where B interpreted A's turn as a request to reimburse the expenses)

        Terkourafi's work is concerned with offers and requests, but the distinction between the two is not as clearcut as is sometimes assumed. In many contexts, an activity involves more than one agent, both of them cooperating to achieve a mutually

beneficial outcome. A clear instance is a transaction in a shop. This can be viewed as a buying event, in which case the agent is the customer, or as a selling event, in which case the agent is the shopkeeper. Terkourafi takes hearer uptake as the primary criterion for the offer/request distinction, with desirability to speaker/hearer as a secondary criterion when uptake is unavailable. For instance, for Terkourafi, (6) is an offer (to fetch a blanket), despite the fact that the agent of the action actually mentioned is the hearer:

(6) [At home; Speaker: female, aged over 51, working class; Addressee: female, aged over 51, middle class; Relationship: friends]

   thelis na scepastis?
   want.2sg SUBJ cover.pass.2sg?
   'Do you want to cover up?'

We return to such examples in §3.2.3

3 The specification of formulae

The verbal formulae considered by Terkourafi all correspond to inflected forms (with certain subcategorization) rather than lexemes. Examples include *echete NP?* (=do-you.pl-have NP?), *tha ithela VP* (=I would want VP), *thelo VP* (=I want VP) and *thelis NP/VP?* (do-you.sg.-want NP/to V?). In her data, the first three almost always realize requests, while the last one almost always realizes offers. There are also formulae which involve imperatives. Thus what has to be represented in an HPSG account is a conventional association between an illocutionary force specification and a sign which has normal syntax and semantics, a particular accent (important since interrogativity in Modern Greek is signalled prosodically) and possibly reduced phonology.[2] For instance, the sign involved in the *echete NP* formula could be generated from the lexeme for *echo* ('to have') by applying the lexical rules for 2nd person plural and for rising intonation. The exact specification of the syntax of the signs is not important here, since there is nothing unusual about them. What we do have to consider is the specification of the context features (the main point of this paper) and the status of the stipulation that relates this to the rest of the sign, which we outline briefly here.

The simplest option is to treat the formulae as analogous to lexical entries (or idioms) in that a) each formula is a conventional association between phonology, synsem and context and b) all formulae are listed. The precise effect of this depends on the precise assumptions made about the nature of the lexicon (which vary somewhat between different approaches to HPSG), but would generally lead to some utterances having both formulaic and non-formulaic structures, with the former being strictly more specific than the latter. This could be regarded as a form of spurious ambiguity or genuine ambiguity (perhaps to be resolved probabilistically) or the more general form could be taken to be blocked. Such an effect also arises in other contexts: consider, for instance, in grammars for English which have a productive noun-noun compounding rule plus entries for lexicalized compound nouns. Thus these

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[2] There are examples of formulae which may have non-standard syntax and semantics, but we will not consider these here.

issues are part of more general concerns regarding the representation of semi-conventional phrases in HPSG, and as such we will not consider them further here.

3.1 Conventional illocutionary force and compositional semantics

Our aim is to provide an account of illocutionary force which allows the conventionalized formulae to be regarded as interpretive shortcuts (as first described by Morgan 1978). That is, we assume that the use of a formula in a given context guides the hearer to a particular interpretation, but that that interpretation could potentially have been reached by full inference about the speaker's desires and so on. The use of a conventional formula by a speaker can be assumed to make an intended illocutionary force clearer to the hearer, however, perhaps disambiguating intentions.

Under this assumption, the conventional illocutionary force of utterances is represented separately from the compositional semantics. The conventional illocutionary force does not replace part of the compositional interpretation, as it might on an idiom theory of speech acts, but rather adds to it. This licences dual responses. For instance, in (7), there is a response to the question as well as an action carrying out the request.

(7)   [At a pharmacy; Speaker A: female, aged 18-30, working class; Speaker B: female, aged over 51, middle class; Relationship: new customer to salesperson]

    A: *na mu kopsete apodhiksin?*
    B: *ne* ((while issuing receipt))
    A: SUBJ me cut.2pl receipt?
    B: yes
    A: 'Can you give me a receipt?'
    B: 'Yes.'

Here we will assume that a C-ILLOC feature in CONTEXT is used to represent conventional illocutionary force. This will only be specified in utterances where a formula is used. We remain neutral about whether there is any representation of inferred speaker intentions in the sign.[3] We can thus distinguish between three possibilities for utterances:

1. No conventional illocutionary force, speaker intentions must be derived by the hearer via inference from compositional semantics.

2. Conventionalized illocutionary force, C-ILLOC instantiated along with compositional semantics. Hearer assumes speaker intentions are given by C-ILLOC (possibly defeasibly).

3. C-ILLOC is instantiated, no (useful) compositional semantics: e.g., greetings like *Hello!*.

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[3] A feature structure could be used to represent such intentions, even if the formalism is not well-suited to computing them, so it would be possible to assume some external component, analogous to the way morphophonology is indicated in Pollard and Sag (1992).

In this paper, we are interested in the second class of utterance. The values of C-ILLOC we consider are REQUEST and OFFER which can be formalized along the lines of Perrault and Allen's (1980) approach. There, for instance, REQUEST(S,H,ACT) (where S is Speaker, H is Hearer and ACT is some action) has the constraint that H is the agent of ACT, the precondition that WANT(S,ACT(H)), the body BELIEVE(H,WANT(S,ACT(H))) and the effect that WANT(H,ACT(H)).

As a concrete example, take the case of *thelis* ('do you want x?') with a VP argument where the speaker is the agent of the VP (e.g., (8)).

(8)　　[At a shoe-shop; Speaker: female, aged 18-30, working class; Addressee: female, 31-50, working class; Relationship: salesperson to new customer]

thelis na valumen kanena pataki mesa?
want.2sg SUBJ put.1pl any insole in?
'Do you want us to put an insole in?'

C-ILLOC is specified as an OFFER in the formula, with the argument to the *thelis*_rel in the compositional semantics being coindexed to the argument position of OFFER. Schematically:

CONTENT: int(want (h, $\boxed{1}$ put-insole-in(s)))
C-ILLOC: OFFER(S,H, $\boxed{1}$)

Thus the action offered is directly specified from the compositional semantics, although, as we discuss later, this is not possible for all formulae. The value of C-ILLOC on a phrase is taken to be the unification of the C-ILLOC values of the daughters. Only a single conventional illocutionary force can be specified and thus if there were multiple formulae, they would have to be mutually consistent.

On our account, C-ILLOC is only instantiated if a formula is involved. It is not present for (9), for instance, even though the compositional semantics directly indicates that a request is being made, because this is not a use of a conventional formula.

(9)　　[Discussion in parliament; Speaker: male, representative of the Disabled Persons' Association, addressing the House of Lords; 2004-11-06; source: http://www.parliament.cy/parliamentgr/010/010_01_02.HTM]

Zito ke parakalo na ghini anavathmisi tu kendru
ask.1sg and entreat.1sg SUBJ be-done upgrading of-the centre.
'I ask and petition that the centre be upgraded.'

The inference from this to the speaker's intentions is presumably simpler than it is in (1) or (5), since the intention follows directly from the verb semantics, but this is not something that need be explicitly encoded.

Our approach is in contrast to Terkourafi and Villavicencio (2003), who assume that a conventional formula gives a default illocutionary force in the feature structure which may be overridden by an inferred value. However, *please* etc, depend on the utterance being a conventional request, a distinction which they cannot capture. Furthermore, if the value is a default there is little predictive power in the account, since in any constraint-based approach to defaults there can be no penalty for

overriding a default. Finally, the overriding account implies a single computed illocutionary force and gives no insight into dual responses.

3.2 Conventional formulae with non-direct interpretations

Although we specified above that the argument of OFFER was linked to the compositional semantics, in a subset of the examples of conventional formulae this direct link is not possible. A relatively straightforward example is (4) where the argument to *thelis NP/VP?* is an NP. Here, the interpretation involves conventionalized metonymy and the argument to OFFER could be fleshed out as OFFER(S,H,TRANSFER(S,H,NP)), where TRANSFER is some suitably generic predicate.

A more complex case was shown in (6). Terkourafi characterizes this example as an offer, but our formal OFFER requires that the agent of the action is the speaker. Thus the C-ILLOC of (6) cannot be OFFER(S,H,cover-up(H)). To allow for these examples, we have to distinguish between the cases where *thelis* takes a VP with the speaker as the subject, which can be construed directly as conventional offers, and the cases where the subject is the hearer, which we treat as conventional offers with an indirection between OFFER and the specified action. Thus the C-ILLOC of (6) corresponds to something like:

$$\text{OFFER(S,H,ACT}'\text{(S))} \wedge \text{PRECONDITION(ACT}'\text{(S),cover-up(H))}$$

That is, there is some implicit action ACT′ which is offered, which is a precondition to the explicitly mentioned action of the hearer.

4 Conclusion

We have outlined an approach to encoding conventional speech acts as conventions of usage within HPSG that is grounded on extensive empirical data. Our account is intended to capture Morgan's (1978) insight that conventional speech acts are interpretive shortcuts. Although modern versions of the performative hypothesis, such as Ginzburg and Sag (2001), could perhaps be extended to the formulae considered here, we believe that such an approach is inherently too inflexible to account for the observed use of the formulae. We do not have space here to discuss in full why the shortcut approach is preferable, but we believe that Morgan's argumentation is still essentially valid.

However, this account remains somewhat schematic. Although Green (2000) discusses a wide range of issues that affect the treatment of CONTEXT, overall the literature is limited and this makes it difficult to refine our assumptions about C-ILLOC, for instance. One important aspect of Terkourafi's work is the finding that the use of formulae is heavily dependent on extra-linguistic features as described in §2. Terkourafi and Villavicencio (2003) give a formalization of this in terms of a set of features in BACKGROUND. The intention there seems to be to hardwire these features as part of the formulae, but an alternative is to regard the distribution as more probabilistic in nature. Future work will be aimed at fleshing out this account, by looking at data from English and Japanese in addition to the Cypriot Greek data and by considering discourse particles in more detail, as well as refining the encoding of the background features for extra-linguistic information.

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