Embedding Imperatives in English

Luka Crnič
Dept. of Linguistics
MIT

Tue Trinh
Dept. of Linguistics
MIT

`crnic@mit.edu`   `tuetrinh@mit.edu`

Abstract

Although it has generally been claimed otherwise (cf. Katz and Postal 1964, Sadock and Zwicky 1985, Palmer 1986, Rivero and Terzi 1995, Platzack and Rosengren 1998, Han 1998 among others), it holds that embedded imperatives exist in English. We describe their main characteristics and provide an account of these by relying on Schwager's (2006) propositional analysis of imperatives, where imperatives are treated as modalized sentences. The imperative modal is thereby relativized to eventualities (cf. Hacquard 2006).

1   Introduction

It has been claimed that imperatives cannot be embedded in English (cf. Katz and Postal 1964, Sadock and Zwicky 1985, Palmer 1986, Rivero and Terzi 1995, Platzack and Rosengren 1998, Han 1998, among others). This claim has been motivated in at least two distinct ways: by treating imperatives as inherent speech act objects which resist embedding on conceptual grounds (cf. Han 1998), and by taking paradigms like (1) as conclusive empirical evidence against their embeddability (cf. Sadock and Zwicky 1985, Palmer 1986 and others). (1a) and (1b) show that declarative and interrogative clauses can occur as complements of attitude verbs, while (1c) purportedly shows this not to be the case for imperative clauses.

(1)   a.   John claimed that [Mary sang]
        b.   John knows [what Mary sang]
        c.   *John said that [call Mary]

Both arguments against there being embeded imperatives in English are based on questionable premises. On the one hand, the paradigm in (1) is misleading. We should rather take the sentence in (2), where the complement of the intensional verb lacks an overt complementizer, as the indicative example. On the other hand, the assumptions that imperatives are essentially speech act objects and that such objects cannot be

arguments of attitude verbs – namely, that attitude verbs do not select for illocutionary acts – have independently been argued to be unwarranted (cf. Schwager 2006).

(2)   John said [call Mary]

The theoretical import of the existence of embedded imperatives is evident. Namely, theories of imperatives that predict their unembeddability need to be modified to accommodate (2) and similar data, while theories that predict such embeddings receive empirical support. Furthermore, if embedded imperatives exist, we can study their semantic contribution to the interpretation of the structures containing them in order to (i) get at a proper analysis of imperatives in general, embedded and matrix, as well as (ii) gain new insights about the nature of the embedding verbs. In this respect, the understanding garnered by the existence and the nature of embedded imperatives should be utilized in a way that insights about embedded interrogatives were (Karttunen 1977).

The paper is organized as follows: Section 2 presents evidence that embedded imperatives are neither quotations nor elliptical *to*-infinitives and that the embedding verb is not used parenthetically. Section 3 compares felicity conditions on embedded and matrix imperatives. Section 4 describes analogous behavior of epistemic modals and provides an analysis for it. Section 5 introduces a theory of imperatives according to which they are modalized sentences. Section 6 provides an account for the parallelism observed between embedded and matrix imperatives by combining the insights of sections 4 and 5. Section 7 points out some issues for further research, while Section 8 concludes.

2   Imperatives as complements of attitude verbs

The sentence in (2) raises several questions related to the nature of the obligatory absence of an overt complementizer, the markedness of parallel sentences with other intensional verbs (3), and the reference of the imperative subject. However, before these questions may be addressed, it must first be shown that (2) is indeed an example of an embedded imperative and not a quoted imperative. This is achieved by showing that, unlike quotes, the string resembling an embedded imperative in (2) and similar examples is not grammatically opaque. Subsequently, we provide evidence that the embedded imperative is also not a bare infinitive, and that *Mary said* is not a parenthetical.

(3)   a.   *John claimed (that) [call Mary]
         b.   *John knows (that) [call Mary]

The standard tests for determining whether certain seemingly embedded clauses are quotations (cf. Anand 2006 and others) involve checking for felicitous occurrences of demonstratives, clause-external variable binding, association with external focus-sensitive operators, *wh*-extraction, external licensing of negative

polarity items, and (non-)interaction of clause-external and clause–internal nominals with respect to binding. If what we have characterized as embedded imperatives pass these tests, this can be taken as an indication that we are dealing with indirect speech.

The facts strongly suggest that embedded imperatives are grammatically transparent. The first relevant datum is the contrast in (4). We see that in (4a), *John* and *his* can be corefential, whereas in (4b), where it is clear that the pronoun *his* is contained in a quote, the coreference reading is marked due to the unlikelihood that John would refer to himself with a third person pronoun.

(4)   a.   John$_1$ said call his$_1$ mom
       b.   #John$_1$ said: "Hey, call his$_1$ mom"

The data in (5) is related. In a situation where the examples in (5) are uttered and the respective indexical *that* is accompanied by a pointing gesture, (5a) but not (5b) is felicitous. Namely, if an indexical is inside a quotation, it should not be evaluated with respect to the utterance situation of (5b) but with respect to the situation of John's original utterance. The pointing gesture would thus be misplaced. Accordingly, the contrast in acceptability in (5) is an indication that the sentence in (5a) is an instance of indirect speech and does not contain a quotation.

(5)   Speaker points at a book
       a.   John$_1$ said buy *that* book
       b.   #John$_1$ said: "Hey, buy *that* book"

Furthermore, focus-sensitive adverbs like *only* are able to associate with focused elements inside the complement of *say*: (6a) conveys that the only thing that John said that you should give to his mom is roses. (6b) cannot convey this, nor does it have a metalinguistic reading in which there is quantification over parts of the quotation.

(6)   a.   John only said give roses$_F$ to his mom
       b.   #John only said: "Hey, give roses$_F$ to his mom"

The same reasoning applies to examples in (7) as well: In (7a) we see that a variable contained in the complement of *say* may be bound by a quantifier external to it; in (7b) we see that *wh*-extraction out of the complement of *say* is not ill-formed; and in (7c) it is shown that the licenser of an NPI inside the complement of the attitude verb does not have to be its immediate clausemate. All of these facts corroborate that the construction studied here allows for syntactic interaction with the rest of the clause and can appropriately be characterized as an embedded imperative.

(7)   a.   Every professor$_1$ said buy his$_1$ book
       b. $^?$Who did John say call at three?
       c. $^?$No one said buy anything

Furthermore, sentences containing embedded imperatives may be arguments of further attitude verbs (8). Along with the data introduced above, this is an indication that the cases of embedded imperatives do not involve paranthesis (cf. McCloskey 2006).

(8)   John thought Mary said call her mom

Finally, it cannot be claimed that the imperative clauses under discussion are actually *to*-infinitives in which the auxiliary has been elided: In (9) we see that although past participles may occur in *to*-infinitives, they are illicit in the constructions studied here. In (10) we see that negated *to*-infinitives cannot be the source of negative embedded imperatives.

(9)   a.   John said to have called his mom by tomorrow
         b.   *John said have called his mom by tomorrow

(10)   a.   John said not to call his mom
         b.   *John said not call his mom
         c.   John said don't call his mom

In this section it was conclusively shown that imperatives can be embedded in English. In particular, we have shown that the respective constructions do not share the characterizing properties of quotations, parentheticals and elliptical *to*-infinitives. However, embedded imperatives also differ in certain respects from embedded declaratives and interrogatives: the former are subject to certain felicity conditions that the latter two are not. These constraints will be exemplified in the next section.

3   Matrix and embedded imperatives

The use of matrix imperatives is subject to a different set of constraints than the use of declaratives and interrogatives. Embedded imperatives are restricted in a similar manner. The constraints involve primarily the authority status of the speaker, her epistemic state, and her approval of what is commanded by the imperative[1]. Between them, they condition the performative nature of the imperative (Schwager 2006). Now, it clearly holds that the performativity of imperatives does not disappear with embedding under an attitude verb: a felicitous use of an embedded imperative is conditional on the reported utterance having been performative. This is illustrated by the contrast between (11a), in which the reported utterance solely described a state of affairs, and (11b), in which the reported utterance was performative. The performativity of the embedded imperative is thereby not anchored to the actual speech context but to the speech context of the reported utterance.

---

[1] In this paper, the focus will be on the command reading of imperatives. All the observations as well as the proposed analysis holds for other readings (wish, advice etc.) of imperatives as well.

(11)   a.   John to Sue: "Peter has an obligation to call Mary"
               Sue to Peter: #John said call Mary
        b.   John to Sue: "I hereby order that Peter call Mary"
               Sue to Peter: John said call Mary

Building on the fact that the performative nature of imperatives is conserved under embedding, an entire class of similarities between matrix and embedded imperatives can be derived. In (12a), it is illustrated that a matrix imperative cannot be followed by a statement that negates the truthfulness of the person who utters the imperative. In (12b), the infelicity stems from negating the truthfulness of the person whose performative utterance is being reported. A shift in the locus of the explanation of the markedness of discourses in (12) can be observed: the locus in (12a) was in contradicting the actual speaker, while in (12b) it was in contradicting the subject of the attitude verb.

(12)   a.   A: Call Mary right away! B: #That's not true
        b.   A: John said call Mary right away! B: #John lied

A similar reasoning applies to (13) and (14). In (13a), we see that it is infelicitous for the speaker to be certain that her addressee will call Mary independently of the utterance of the imperative and still command it; in (13b) it is the epistemic state of the subject of the attitude verb that is responsible for the markedness of the respective discourse. In (14a), it can be seen that it is infelicitous for the speaker to command something that she does not consider to be a good outcome; in (14b), the infelicity is due to subject of the attitude verb having had such considerations.

(13)   a.   #I know you're going to call Mary. Call her!
        b.   #John knew you were going to call Mary. He said call her

(14)   a.   #Call Mary right away. But I don't think you should
        b.   #John said call Mary right away. But he didn't think you should

To summarize: certain parallels hold between the infelicitous use of embedded and matrix imperatives. The intuitive reason for the markedness of the (a) sentences in (12)-(14) is that there is a conflict between the imperative uttered by the agent of the actual speech event and the accompanying context (cf. Schwager 2006). The markedness of (b) sentences, on the other hand, is due to a conflict between the imperative uttered by the agent of the reported speech event and the context of that speech event. Thus, while the explanations of the markedness of discourses in (a) and (b) have the same underlying architecture, the ingredients are distinct – in (a) examples, the ingredients are the circumstances of the actual speech event, while in (b) examples, the ingredients are the circumstances of the reported speech event. A similar pattern has been noted in the evaluation of epistemic modals, to which we turn in the next section.

4   Matrix and embedded epistemic modals

Epistemic modality is context-sensitive (Hacquard 2006, Stephenson 2007, Yalcin 2007 and many others), i.e. it depends on the context whose epistemic state is relevant for determining the sentence's truth conditions. In particular, the epistemic agents that feature in the assessment of matrix epistemics (15a) come from the actual speech context, while the epistemic agents featured in the assessment of embedded epistemic modals are determined by the context of the reported attitude situation (15b). For the purposes of this paper, we assume that the knowledge that is relevant for matrix epistemic modals is that of the speaker (cf. DeRose 1991, Stephenson 2007, MacFarlane 2008 for a more sophisticated treatment and caveats), while the knowledge that is relevant for embedded epistemic modals is that of the subject of the respective attitude verb. This is illustrated by the paraphrases in (15a') and (15b').

(15)   a.   It might be raining
        a'.   It's not the case that I know that it isn't raining
        b.   John believes that it might be raining
        b'.   It's not the case that John knows that it isn't raining

As an illustration, these assumptions provide a natural explanation of the infelicity found in epistemic contradictions (cf. Yalcin 2007 for discussion): since the epistemic modal is evaluated in relation to her knowledge, by uttering (16a) the speaker is being cognitively dissonant. The markedness of (16b) is due to cognitive dissonance being attributed to the subject of the attitude verb.

(16)   a.   #It's raining and it might not be raining
        b.   #John believes it's raining. He also believes that it might not be raining

It is clear that an unmodified Kratzer (1978) approach does not capture this context-sensitivity: *John believes that it might be raining* is true according to that theory iff, roughly, in all the worlds w doxastically accessible to John, at least one world w' is epistemically accessible from w in which it is raining – there is no mention of whose epistemic state is relevant in determining the latter accessible worlds. Several different types of accounts of epistemic modals have been proposed that try to remedy this shortcoming. Among them is also the event-relative approach in Hacquard (2006) that is based on Kratzer's classical treatment of modality[2]. Hacquard assumes that the first argument of a modal is an accessibility relation that assigns a set of accessible worlds to the modal's second argument, an event; the modal's third argument is a proposition. The denotation of *might* is given in (17).

(17) $[[\text{might R e}]] = \lambda p. \exists w \in R(e): p(w) = 1$

---

[2] A slightly simplified version of Hacquard's (2006) approach is presented here. The simplifications, which are primarily related to the treatment of root modality and tense, are harmless since we are dealing with 'high' modals, i.e. deontic addressee-oriented modals, and the role of tense is ignored.

The accessibility relation in (17) is epistemic and Hacquard proposes that it assigns to an event a set of worlds compatible with the content of that event (18a). The content of an event is thereby the set of propositions that are associated with the event in a certain manner, e.g. they are known in the event(uality) (18b). The epistemic accessibility relation thereby presupposes that its event argument is contentful.

(18)   a. $R_{epist} = \lambda e: \text{CONTENT}(e) \neq \varnothing. \lambda w.$ w is compatible with $\text{CONTENT}(e)$
       b. $\text{CONTENT} = \lambda e. \lambda p.$ p is known in e

Furthermore, Hacquard proposes that modals may merge either with a VP – i.e. below tense and aspect – or T' – i.e. above tense and aspect. They are then relativized to the closest c-commanding event variable, which provides the temporal and individual anchoring of the modal – namely anchoring to the time and the individual participants of the event. In the case of unembedded modals that merge with T', that event is the speech event. In the case of embedded modals that merge with T', that event is the attitude event. In the cases of modals that merge with a VP, the event they are relativized to is the event introduced by the aspect operator. This event-relativization is formally captured by the event argument of the modal being bound by the closest event-binder:

(19)   Syntactic assumptions
       a.   Event and world variables are bound by the closest binders
       b.   'λw' and 'λe' can be inserted freely to ensure interpretability

This system can account for the dependence of matrix epistemics on the cognitive state of the speaker as well as the switch of dependence which occurs with embedding of epistemic modals. It also provides a natural explanation for why epistemic modals merge above aspect (and tense). Namely, their accessibility relation selects for contentful events – speech and various attitude events are contentful, while events in the denotation of most other VPs are not. Accordingly, merging the epistemic modal with a VP, where the modal's event argument is relativized to the event introduced by aspect, would lead to a clash between the requirements of the accessibility relation and the nature of the event argument (cf. Hacquard 2006 for more details).
A simplified structure for matrix epistemics is given in (20). In (20b), instead of binding the modal's event argument, we represent the speech event with e* – a more elaborate speech act projection likely dominates the structure in (20b) but will not feature in our representations. We collapse the tense and aspect heads into Infl complex, whose denotation is given in (20c); the semantic contribution of tense is ignored.

(20)   a.   John might come
       b. $[[\text{might R } e^*] [\lambda w [\text{Infl } w] [\lambda e [\text{John come}(e)]]]]$
       c. $[[\text{Infl } w]] = \lambda P. \exists e \leq w[P(e) = 1]$

The truth-conditions of (20b) are computed in (21): the minimal speech event of uttering (20a) has only the speaker as a participant. Accordingly, it is the speaker's cognitive state that determines the epistemic content of the event, i.e. the domain of the first existential quantifier contains only those worlds that are compatible with the speaker's knowlege. It is asserted that in at least one of those worlds, John comes.

(21) $[[(20a)]] = 1$ iff $\exists w \in R_{epist}(e^*): \exists e \leq w[agent(e)(John) \ \& \ come(e)]$

If an epistemic modal is embedded under an attitude verb, its event argument is co-indexed with the event(uality) argument of the attitude verb – they are both bound by the same event binder (22b). Accordingly, since the modal is relativized to the attitude event, it is the beliefs of the attitude holder that will be relevant in determining the accessible worlds. The holder of the attitude event is denoted by the subject of the attitude verb. Accordingly, the content of the event, which determines the domain of existential quantification over worlds, consists of the beliefs of the subject. This accounts for the observed shift in the epistemic agent relevant for evaluating epistemic modals from the speaker in (21) to the subject of the attitude verb in (22d).

(22)   a.   Mary believes that John might come
        b.   [Infl w*] λe' [Mary believe(e') [λw' [might R e'] [λw [Infl w] [λe [John come(e)]]]]]]
        c. $[[believe]] = \lambda e. \ \lambda p. \ \lambda x. \ holder(e)(x) \ \& \ believe(e) \ \& \ \forall w \in \cap \text{CONTENT}(e)[p(w) = 1]$
        d. $[[(22b)]] = 1$ iff $\exists e \leq w^*[holder(e)(Mary) \ \& \ believe(e) \ \& \ \forall w \in \cap \text{CONTENT}(e)[\exists w' \in R_{epist}(e)[\exists e' \leq w'[agent(e')(John) \ \& \ come(e')]]]]$, i.e. iff $\exists e \leq w^*[holder(e)(Mary) \ \& \ believe(e) \ \& \ \exists w \in R_{epist}(e)[\exists e' \leq w [agent(e')(John) \ \& \ come(e')]]]$

This section has illustrated some basic facts related to the context-sensitivity of epistemic modality. In particular, we have focused on the shift of the individual relevant for determining the possible worlds over which the modal quantifies; such a shift was shown to occur when epistemics are embedded under an attitude verb. An approach in which modals are relativized to events was adopted to account for these facts. The next section will introduce a modal semantics for imperatives. Combined with the event-relative treatment of modality, this will allow us to analyze the facts described in Section 3.

5   Imperatives as modalized sentences

There are several distinct approaches to semantics of imperatives (Han 1998, Schwager 2006, Portner 2007 among many others). These approaches differ in whether they predict embeddability of imperatives. In particular, if a standard analysis

of embedding attitude verbs – i.e. attitude verbs select for propositions – is adopted, approaches that assume that imperatives are not propositional cannot be maintained in light of the preceding discussion. However, if imperatives are treated as denoting modal propositions, their embedding is expected. Schwager's (2006) semantics of imperatives exemplifies the second type of approach: she analyzes imperatives as performatively used deontic modal sentences. More precisely, imperatives and performative modals are treated as having the same assertive content as non-performative modals, but they additionally trigger three presuppositions[3].

An illustration of the first restriction on the use of imperatives and performatively used deontics is in (23). In (23a), it is shown that it is infelicitous to contest the verity of a peformatively used deontic modal. The same observation was shown to hold for imperatives in (12a), repeated in (23b). The restriction can be characterized as the speaker possessing a rational authority which makes disputing her truthfulness infelicitous. This is the authority condition.

(23) a. A: You must call Mary right away! B: #That's not true
      b. A: Call Mary right away! B: #That's not true

The second presupposition triggered by imperatives and performative deontics is the following: prior to the utterance of the imperative, the speaker must not believe that the addressee will fulfill the obligation imposed by the imperative independently of the utterance of the imeperative. She must not be convinced that her command will be ignored either. This is the epistemic uncertainty condition, and it is illustrated in (24) (cf. (13a) above).

(24) a. #I know you're (not) going to call Mary, (but) you must call her
      b. #I know you're (not) going to call Mary, (but) call her

The third presupposition is that the speaker must endorse what she commands. This is the accessibility relation affirmation condition (ordering source affirmation in Schwager 2006). Again, a parallelism between imperatives and performatively used modals obtains (25) (cf. (14a) above).

(25) a. #You must call Mary right away! But I don't think you should
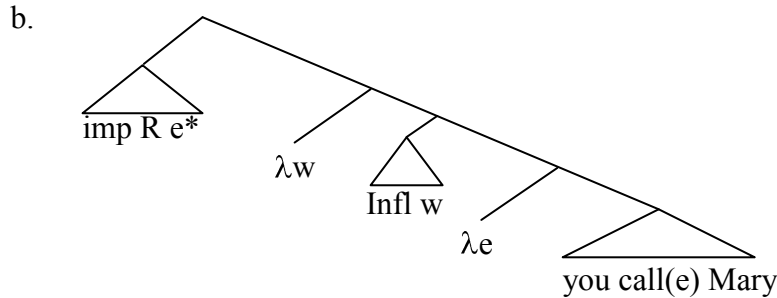   b. #Call Mary right away! But I don't think you should

The standard meaning of a universal modal is given in (26a); the LF of *You must call Mary* is in (26b). (26a) also represents the content of the assertive component of the imperative modal and the performative deontic modal *must*. In addition, both the imperative and the performative *must* select for a deontic accessibility relation that takes a contentful event of appropriate kind as its argument. They are also subject to the three conditions discussed above: the speaker has to be an authority in the speech

---

[3] A sparse version of Schwager's analysis is instrumentalized in this paper. Furthermore, some liberties are taken in formulating some points. For more details, cf. Schwager 2006.

event, she has to affirm the accessibility relation, and she must be epistemically uncertain in an event immediately preceding the speech event about whether the proposition denoted by the complement of the imperative modal would obtain. The denotation of the imperative modal is in (27a); the LF of *Call Mary* is in (27b). The truth-conditions of (27b) are computed in (27c).

(26) a. $[[\text{must}]] = \lambda R. \lambda e. \lambda p. \forall w \in R(e): p(w) = 1$
      b. $[\text{must } R \text{ } e^*] [\lambda w [[\text{Infl } w] [\lambda e [\text{you call}(e) \text{ Mary}]]]]$

(27) a. $[[\text{imp}]] = \lambda R. \lambda e:$ authority(agent(e),e) & affirm(agent(e),R,e). $\lambda p:$ uncertain(agent(e),p,e_{pre}). $\forall w \in R(e): p(w) = 1$
      b.

      c. $[[(27b)]]$ is defined only if the speaker is an authority, affirms the accessibility relation, and is epistemically uncertain about the addressee calling Mary. If defined, $[[(27b)]] = 1$ iff $\forall w \in R(e^*) [\exists e \leq w$ [agent(e)(the.addressee) & call(e)(Mary)]]

The above representation leaves the domain of universal quantification underspecified. We will assume that this domain consists of worlds that are compatible with what was said in the respective speech event. That is, we propose that the imperative modal selects for the accessibility relation given in (28a). The natural content of a speech event is thereby the set of propositions that the speaker conveyed to an addressee by her utterance (28b).
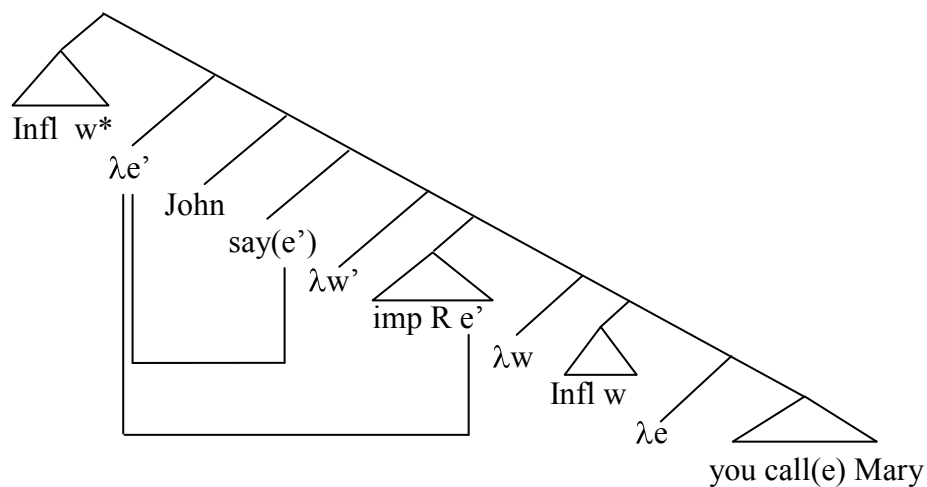
(28) a. $R_{imp} = \lambda e:$ CONTENT'(e)$\neq\varnothing$. $\lambda w.$ w is compatible with CONTENT(e)
      b.   CONTENT' $= \lambda e. \lambda p.$ p was conveyed in e

      This section introduced Schwager's propositional analysis of imperatives and performative modals, which was transposed to an event-based framework introduced in Section 4. In particular, imperatives are clauses headed by a modal that has the same semantics as non-performative modals but is subject to three additional conditions that are encoded as presuppositions: authority, epistemic uncertainty and accessibility relation affirmation. The following section will combine the proposals introduced in the last two sections to derive the facts described in Section 3.

6 Shift with embedded imperatives

The imperative modal shares a crucial property with epistemic modals: it merges above aspect (27b). The reason for this is the same as the reason for high merger of epistemic modals: the imperative modal selects for contentful events which are due to local event co-indexation (19) not available if the modal merges with the VP. Consequently, if an imperative is embedded under an attitude verb, the event argument of the imperative modal is bound by the same event binder as the event argument of the attitude verb. This can be seen in (29b), which is the LF of the sentence in (29a). The meaning of *say* is given in (29c).

(29) a.   John said call Mary
      b.

      c. $[[\text{say}]] = \lambda e.\lambda p.\lambda x.\ \text{agent}(e)(x)\ \&\ \text{say}(e)\ \&\ \forall w \in \cap \text{CONTENT}(e)[p(w) = 1]$

The imperative modal is thus anchored to the attitude event. Accordingly, this is the event that is subject to definedness conditions on imperatives discussed in Section 5, i.e. the authority, epistemic uncertainty and accessibility relation affirmation conditions. Since the agent of the attitude event is denoted by the subject of the attitude verb, it is the authority status, epistemic state and affirmative stances of this individual that the felicity of the embedded imperative depends on. This is exemplified in (30) where the truth-conditions of (29b) are computed.

(30)   If defined, $[[(29b)]] = 1$ iff $\exists e \leq w^*[\text{agent}(e)(\text{John})\ \&\ \text{say}(e)\ \&\ \forall w \in$
      $\cap \text{CONTENT}(e)[\ \forall w' \in R_{\text{imp}}(e)[\exists e' \leq w'[\text{agent}(e')(\text{the.addr.})\ \&$
      $\text{call}(e')(\text{Mary})]]]]$ iff $\exists e \leq w^*[\text{agent}(e)(\text{John})\ \&\ \text{say}(e)\ \&\ \forall w \in R_{\text{imp}}(e)\ [\exists e' \leq w$
      $[\text{agent}(e')(\text{the.addr.})\ \&\ \text{call}(e')(\text{Mary})]]]]$.
      $[[(29b)]]$ is defined only if in the reported speech event, John is an authority, he is uncertain about the addressee calling Mary and affirms the addressee calling Mary.

These truth-conditions are accountable for the patterns observed in Section 3, repeated in (31). Namely, the operative condition responsible for the markedness of (31a) is John having to be an authority in the reported saying event. The second sentence of (31a) contradicts this condition. In (31b), the first sentence expresses that prior to uttering the imperative, John was epistemically certain about the addressee calling Mary. The use of an embedded imperative in the second sentence, however, comes with the precondition that the subject of the attitude verb was uncertain prior to the utterance of the imperative whether the addressee will call Mary. This precondition cannot be satisfied in light of the first sentence. Finally, as it is illustrated in (30), the first sentence in (31c) presupposes that John has an affirmative attitude towards the addressee calling Mary, while the second sentences negates this.

(31)   a.   A: John said call Mary right away! B: #John lied
       b.   #John knew you were going to call Mary. He said call her.
       c.   #John said call Mary right away. But he didn't think you should.

In summary, the infelicity of discourses in (31) can be shown to follow from the incompatibility of the event-relative semantics of the imperative modal and the accompanying context: by relativizing modals to events, the definedness conditions of imperatives become characterizable as restrictions on events in which the imperative is uttered. If these events cannot fulfill the felicity requirements imposed by the imperative modal, as is the case in (31), the sentence is marked. This accounts for the parallel behavior of matrix and embedded imperatives described in Section 3. The next section describes another prediction of the analysis developed here and touches upon some further issues.

7   Some puzzles

There are two puzzles concerning embedded imperatives that were mentioned only very briefly in the preceding exposition: the limitations on the embedding verb and the nature of the imperative subject. The first puzzle was illustrated in (3), which is repeated below. It concerns the fact that the only attitude verb that allows for embedding of imperatives in English is *say*.

(3)   a.   *John claimed (that) [call Mary]
       b.   *John knows (that) [call Mary]

The approach to imperatives and modality espoused above allows for a natural explanation of some restrictions on what the embedding verb may be: it has to be a verb of saying that describes events in which, roughly, a command has been expressed. Namely, as it is defined in (28), the accessibility relation of imperatives and other performative deontic modals selects only for events in which certain properties hold of the agent, e.g. the speaker in the speech event. The sentences in (3) have the structures given in (32) where the event arguments of the imperative modal are co-indexed with

the event arguments of the attitude verbs *claim* and *know*, respectively. On the one hand, although a minimal knowing event(uality) e does contain a cognizing individual – a holder of certain beliefs and knowledge – that individual is not an *agent* of the event and, accordingly, $R_{imp}(e)$ is undefined (presuppositions of the imperative modal require there to be an agent in the respective speech event). On the other hand, the agent of a claiming event does not satisfy the authority presupposition triggered by the perfomative modal. This explains why embedded imperatives can occur only under attitude verbs that can be used to describe events in which a command was uttered.

(32)   a.   [Infl w*] λe' [John claim(e') [λw' [imp R e'] [λw [Infl w] [λe [you call(e) Mary]]]]]

        b.   [Infl w*] λe' [John know(e') [λw' [imp R e'] [λw [Infl w] [λe [you call(e) Mary]]]]]

However, it is not all verbs of commanding that allow embedded imperatives; for example, *demand* and *order* are unacceptable with an imperative complement (33). Descriptively, all the verbs of commanding that are such that if they take a CP argument, that CP has to have an overt complementizer (34), do not embed imperatives.

(33)   a.   *John demanded (that) call his mom

        b.   *John ordered (that) call his mom

(34)   a.   John demanded *(that) Mary call his mom

        b.   John ordered *(that) Mary call his mom

Accordingly, the fact that the only verb of saying that can embed imperatives is *say* could be explained along the following lines: It is a common assumption that imperatives are CPs where either an imperative feature (Schwager 2006) or some directive feature (Han 1998) is situated in C. This is a position that is also targeted by the complementizer *that*, which cannot have an imperative feature. Therefore, if an attitude verb selects for CPs with an overt complementizer *that* (e.g. *claim, order*), an embedding of imperatives is illicit.

     The second puzzle concerns the reference of the imperative subject. In matrix imperatives, the subject refers to the addressee in the actual context. This is frequently captured by assuming that the imperative subject *pro* has a second person feature that requires the denotation of *pro* to be the addressee of the utterance. In embedded imperatives, however, the referent of the imperative subject is not necessarily the actual addresse.

(35)   a.   John said call his mom, so you should

        b.   John said call his mom, and I did

        c.   John said call his mom, and Bill did

        d.   John said call his mom, so we will

The sequences in (35) are felicitous. If the denotation of the imperative were just the actual addressee, only (35a) would be expected to be licit: the obligation of the actual addressee to call John's mom cannot be satisfied by anyone other than the actual addressee. The behavior of the subject of the embedded imperative thus resembles the behavior of arbitrary PRO. The fact that such behavior is not observable with matrix imperatives might be due to pragmatic reasons. A further investigation of this issue is mandated.

In this section, the restricted distribution of embedded imperatives in English was to some extent derived from the semantics of the imperative modal and event-relativity of modality. Furthermore, it was suggested that cases of non-embedding of imperatives under verbs of commanding were due to syntactic restrictions. Finally, it was shown that the denotation of the subject of the embedded imperative does not always straightforwardly correspond to the actual addressee.

8   Conclusion

Although it has often been claimed otherwise, there are embedded imperatives in English. Their semantic properties thereby closely resemble the properties of embedded epistemic modals: their evaluation is to some extent context-sensitive. We have captured this resemblance by adopting Schwager's (2006) account of imperatives (imperatives denote modal propositions) and Hacquard's (2006) approach to modality (modals are event-relative).

There are several issues that require further investigation: the restriction of English attitude verbs that allow embedded imperatives to *say*; the cross-linguistic variation in the embedding of imperatives; the semantics of the embedded imperative subject and its implications for the analysis of imperative subjects in general. First steps in resolving some of these issues were made above, but a lot of theoretical and typological work still lays ahead.

Acknowledgements

References

Anand, Pranav (2006) *De De Se.* PhD thesis, MIT.

DeRose, Keith (1991) "Epistemic possibilities." *The Philosophical Review* **100**, 581–605.

Hacquard, Valentine (2006) *Aspects of Modality*. PhD thesis, MIT.

Han, Chung-Hye (1998) *The Structure and Interpretation of Imperatives*. PhD thesis, University of Pennsylvania.

Katz, Jerrold and Paul M. Postal (1964) *An Integrated Theory of Linguistic Descriptions*. Cambridge, MA: MIT Press.

Kratzer, Angelika (1978) *Semantik der Rede. Kontexttheorie, Modalwörter, Konditionalsätze*. Königstein: Scriptor.

MacFarlane, John (2008) "Epistemic modals are assessment-sensitive." Manuscript, UC Berkeley.

McCloskey, Jim (2006) "Questions and Questioning in a Local English." In R. Zanuttini et al. *Crosslinguistic Research in Syntax and Semantics: Negation, Tense, and Clausal Architecture.* Washington, DC: Georgetown University Press, 87–126.

Palmer, Frank R. (1986) *Mood and Modality*. Cambridge: Cambridge University Press.

Platzack, Christer and Inger Rosengren (1997) "On the subject of imperatives; a minimalist account of the imperative clause." *Journal of Comparative Germanic Linguistics* **1**, 177–224.

Portner, Paul (2007). "Imperatives and modals." *Natural Language Semantics* **15**, 351–383.

Rivero, Maria-Luisa and Arhonto Terzi (1995). "Imperatives, V-movement and logical mood." *Journal of Linguistics* **31**, 301–322.

Sadock, Jerrold M. and Arnold M. Zwicky (1985). "Speech act distinctions in syntax." In T. Shopen (ed.) *Language Typology and Syntactic Description*, Volume I. Cambridge, MA: Cambridge University Press, 155–196.

Schwager, Magdalena (2006) *Interpreting Imperatives*. PhD thesis, University of Frankfurt/Main.

Stephenson, Tamina (2007) "Judge Dependence, Epistemic Modals, and Predicates of Personal Taste." *Linguistics and Philosophy* **30**, 487-525.

Yalcin, Seth (2007) "Epistemic modals." *Mind* **117**, 983-1026.