Localizing To-Do Lists

Yunhui Bai ✳ Jonathan Kendrick

NELS55 ✳ Yale University

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To-Do Lists

According to the analysis of imperatives proposed by Portner (2004, 2007), imperatives denote properties of their addressee:

(1) $[\![\text{Sit down!}]\!]^w = \lambda x_e : x$ is the addressee in c . x sits down in w

Whereas assertions update the common ground, imperatives update a to-do list (TDL) T which is a function from individuals to sets of properties.

(2) Given a TDL T, the successful use of an imperative P addressed to α results in a function T' identical to T except that $T'(\alpha) = T(\alpha) \cup \{P\}$.

Some problematic data

Problem 1: disjunction

The deontic modal in the right disjunct of (3) is restricted by the imperative in the first disjunct.

(3) Clean the table or you should help wash dishes.
$\approx$ Clean the table or if you don't, you should help wash the dishes.

However, since no item is added to the (global) TDL in (3), it's not clear how to derive this reading on the TDL-based account.

Problem 2: conditional conjunction

Imperative-*will* conjunctions often give rise to conditional readings while the imperatives are not endorsed and the TDL is not updated (Russell, 2007).

(4) Eat candy before dinner and you'll regret it.
$\approx$ If you eat candy before dinner, you'll regret it.

Following Kaufmann (2012) and von Fintel and Iatridou (2017), we will call these disjunctions and conjunctions imperatives and declaratives (IaDs).

Problem 2: conditional conjunction

Not all IaD conjunctions give rise to this purely conditional reading.

(5) a. Do the dishes and I'll cook dinner. endorsing
b. Don't do the dishes and you'll regret it. non-endorsing

That said, the modal in the endorsing conjunction still receives a restricted reading.

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Our goal: sketch a conservative extension of the TDL-based theory which captures both the restricted reading in disjunctive IaDs and the non-endorsing reading of conjunctive IaDs.

Explaining the data

Option 1: Modal subordination

Many have attempted to explain (some or all) IaDs as modal subordination or some other anaphoric phenomena (Kaufmann, 2012; Starr, 2018).

The basic idea is that in (6), the modal *will* can be restricted by the salient antecedent worlds where the addressee locks the door.

(6) Lock the door and we will go.

This explains the conditional reading of the modal-sentence.

Option 1: modal subordination

However, existing accounts don't offer a unified account for restricted readings of the overt modals in endorsing and non-endorsing IaD conjunctions and disjunctions.

- Kaufmann (2012) adopts a modal semantics for imperatives:
  (i) endorsing conjunctions involve modal subordination,
  (ii) non-endorsing conjunctions are true conditionals,
  (iii) *or* itself operates on modals.
- Starr (2018) posits an ambiguity in *and*:
  (i) endorsing conjunctions are ordinary conjunctions,
  (ii) non-endorsing conjunctions are left-subordinating conjunctions,
  (iii) restricted readings arise in conjunctions via modals' anaphoricity.
  (Starr doesn't give an account for restricted reading in disjunctions)

Problem with modal subordination in disjunction

The difficulty is that the modal subordination approach doesn't extend easily to disjunctive IaDs.

(7) Clean the table or you should help wash the dishes.

We want the modal to be restricted by the worlds where the addressee doesn't clean the table.

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However, it is not clear that *clean the table* can make salient worlds where the addressee doesn't clean the table to allow for modal subordination.

(8) **Context:** You either park here or there.

a. Don't park here! You'll be fined. (von Fintel and Iatridou, 2017)
   $\Rightarrow$ If you park here, you will be fined.

b. Park there! You'll be fined.
   $\not\Rightarrow$ If you don't park there, you will be fined.

Problem with modal subordination in disjunction

We suspect that a positive imperative can't by itself make its negative counterpart salient to serve as an antecedent for modal subordination.

And even if that is allowed, it faces a serious overgeneration problem for conjunction data: why is (9a) never interpreted as (9b)?

(9) a. Work out more and you will stay healthy.
    b. $\not\approx$ Work out more and if you don't you will stay healthy.

Option 2: local contexts

Our core observation is that *or* often licenses an *otherwise*-inference, as can be seen in Barbara Partee's famous example:

(10) There is no bathroom in the house, or it is in a funny place.
$\approx$ There is no bathroom in the house, otherwise (there is one) and it is in a funny place.

This is often put as the right disjunct having a local context that entails the negation of the left disjunct.

We thus build our theory on local context.

Option 2: local contexts

The idea: combine Portner's semantics for imperatives with Schlenker's theory of local context and give a theory of local to-do list.

A local context is a pair $\langle \kappa, \tau \rangle$, with a information parameter κ as in Schlenker (2009, 2010a,b), and a local to-do list parameter τ.

We'll eventually use τ to induce a partial ordering on worlds in κ that modals can be sensitive to–this is how we'll generate restricted readings in IaDs.

Option 2: local contexts

Local information à la Schlenker (2009, 2010a,b). We define local information κ in a syntactic environment a_c as the smallest set of worlds κ such that…

$$a(\kappa \wedge b')c' \Leftrightarrow ab'c'$$

for all well-formed completions b' and c'.

Schlenker's algorithm doesn't deal with unsaturated predicates (imperatives) in a, which is why we introduce τ.

Option 2: local contexts

How do we compute local to-do list τ for b in environment a_c, especially when b is propositional?

(i) We would want something like $a(\kappa \wedge \tau \wedge b')c' \Leftrightarrow ab'c'$ where τ tracks the indexed properties in a.

(ii) But, both τ and $\tau(\alpha)$ are not conjoinable with a proposition b'. For just like the global to-do list, τ is a function assigning each participant a set of properties.

Therefore, the algorithm doesn't directly apply due to type mismatch.

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To determine the local TDL for an addressee α, $\tau(\alpha)$, w.r.t an expression b in environment a_c, we saturate the arguments of each imperative indexed to α in a, with the addressee α.

The semantic value…

(11) $[\![\text{open the door}]\!]^w = \lambda x : x$ is the addressee . x opens the door in w.

Its saturated counterpart…

(12) $[\![\alpha \text{ open the door}]\!]^w = \alpha$ opens the door in w.

Option 2: local contexts

The saturation step turns indexed properties into propositions.

We then find the biggest conjunction $\bigwedge_{F \in \tau(\alpha)} F(\alpha)$ such that

(13) $a'(\kappa \wedge \bigwedge_{F \in \tau(\alpha)} F(\alpha) \wedge b')c' \Leftrightarrow a'b'c'$

holds for all well-formed completions b' and c', where $\bigwedge_{F \in \tau(\alpha)} F(\alpha)$ doesn't overlap with κ to avoid redundancy.

So α's local to-do list $\tau(\alpha)$ is the set of properties which generates the biggest transparent conjunction $\bigwedge_{F \in \tau(\alpha)} F(\alpha)$

Option 2: local contexts

We take local contexts to provide definedness conditions for expressions. Given our algorithm lifted from Schlenker's, we get:

- $[\![\text{A! or B}]\!]^{w,\kappa,\tau}$ is defined $\Leftrightarrow$ $[\![\text{A}]\!]^{w,\kappa,\tau}$ is defined and $[\![\text{B}]\!]^{w,\kappa,\tau+\neg\text{A}}$ is defined
- $[\![\text{A! and B}]\!]^{w,\kappa,\tau}$ is defined $\Leftrightarrow$ $[\![\text{A}]\!]^{w,\kappa,\tau}$ is defined and $[\![\text{B}]\!]^{w,\kappa,\tau+\text{A}}$ is defined

Assume that we start out with an empty global context. Now consider the following sentence…

(14) Eat candy before bed and you'll regret it.

We want to find a local TDL τ such that the following holds for all p where κ is empty:

(15) $\textbf{eat-candy}(\alpha) \wedge (\kappa \wedge \bigwedge_{F \in \tau(\alpha)} F(\alpha) \wedge p) \Leftrightarrow \textbf{eat-candy}(\alpha) \wedge p$

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the biggest transparent conjunction $\bigwedge_{F \in \tau(\alpha)} F(\alpha)$ is just $\mathbf{eat\text{-}candy}(\alpha)$ itself. So, the local TDL $\tau(\alpha)$ is the singleton set $\{\mathbf{eat\text{-}candy}\}$.

Option 2: local contexts

We further assume that modals like *will* is subject to the following constraint, so that their domain can be restricted by local contexts.

$$[\![\text{will}]\!]^{w,f,g} \text{ is defined relative to } \langle \kappa, \tau \rangle \text{ only if } \textsc{max}(w, f, g) \subseteq \kappa_{<_\tau}$$

Crucially, we assume τ induces an ordering $<_\tau$ on κ.

Option 2: local contexts

Intuitively, we want $\kappa_{<_\tau}$ to pick out the best worlds in κ where the properties τ assigns to each participant are all realized.

Ordering by τ. For a local context $\langle \kappa, \tau \rangle$, $w \in \kappa_{<_\tau}$ iff $w \in \kappa$ and for any participant i, there is no $w' \in \kappa$ such that $w <_{\tau^i} w'$.

In words: Intersect the sets of best (maximal) worlds for each participant according to τ.

Ordering by participants. For any $w_1, w_2 \in \kappa$ and any participant i, $w_1 <_{\tau^i} w_2$ iff for some $P \in \tau(i)$, $P(w_2)(i) = 1$ and $P(w_1)(i) = 0$, and for all $Q \in \tau(i)$, if $Q(w_1)(i) = 1$, then $Q(w_2)(i) = 1$.

In words: Rank the worlds for a participant α according to τ by how many properties ascribed to α in τ are realized at that world.

Option 2: local contexts

Consider the following example...

(16) Close the window or it will be cold.

For (16) to be defined, the modal *will* needs to defined relative to $\langle\kappa, \tau + \neg\textbf{close-window}(\alpha)\rangle$, which requires that...

$$\textsc{max}(w, f, g) \subseteq \kappa_{<_{\tau+\neg\textbf{close-window}(\alpha)}}$$

Since best worlds in κ (according to the local TDL) are all not-closing-the-window worlds, the modal domain will only contain those worlds.

Practical Moore sentences

Mandelkern (2021) observes that the following sentence is infelicitous:

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Mandelkern posits that directives require epistemic posturing–the speaker must act as though they're certain the addressee will realize the imperative.

This type of pragmatic solution seems not especially promising, since the sentence remains bad when embedded...

(18) #If there are dishes in the sink, do the dishes, and you might not.

Here the speaker clearly is not certain that the addressee will do any dishes, but the infelicity remains.

Practical Moore sentences

But if we assume that epistemic *might* is subject to locality constraint,

(6) #If there are dishes in the sink, do the dishes, and you might not.

then for the *might*-conjunct to be defined, the domain of *might* needs to be a subset of the following. . .

$$(\kappa + [\![\text{there are dishes in the sink}]\!])_{<_{\tau+\textbf{does-dishes}(\alpha)}}$$

Since no world out of the dish-doing worlds is a non-dish-doing world, the *might*-conjunct cannot be true when defined.

Practical Moore sentences

Mandelkern (2019, 2024) has proposed that epistemic *might* is subject to locality constraint via local information κ…

$$\textsc{max}(w, f, g) \subseteq \kappa$$

We are suggesting that there is evidence to reformulate the constraint in terms of $\kappa_{<_\tau}$–the best worlds compatible with the local information…

$$\textsc{max}(w, f, g) \subseteq \kappa_{<_\tau}$$

Summary

We have suggested a way to lift Schlenker's local context algorithm so that it works with a minimalist semantics for imperatives.

We think local to-do list is the mechanism that gives rise to restricted readings of the modals in all three cases of interests: endorsing conjunctions, non-endorsing conjunctions and disjunctions.

This is a theoretical advantage over existing accounts.

Summary cont.

One feature of our theory is that the computation of local TDL for, say, the declarative in a disjunctive IaD…

(19) Clean the table or I will be mad.

is roughly equivalent to computing local context over the abstract…

(20) $[\![\text{clean the table or I will be mad}]\!]^{w,g,c} = \lambda x : x$ is the addressee. x clean the table in w or the speaker in c will be mad in w.

Outlook

Endorsing vs. non-endorsing IaD conjunctions: what exactly is the difference?

What is the meaning of the whole disjunction?

One possibility is that the global context is a set of $\langle \kappa, \tau \rangle$, and disjunction updates the global context by $\cup$...

Another possibility is type-shifting...but the declarative disjuncts in IaDs intuitively is not part of a property of the addressee

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