THE LANGUAGE OF DIRECTION

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1 Theories of meaning for imperatives

Ordinary imperatives. OIs are of the form $!\phi$

(1) Shut the window!

Conditional imperatives. CIs are of the form $(\textit{if } \phi)(!\psi)$

(2) If the temperature drops, shut the window!

Directed imperatives. DIs are of the form $a!\phi$ or $Qx!\phi$.

(3) a. Nunzio shut the window! [Non-quantified subject]
b. Everyone$_i$ take off their$_i$ coat! [Quantified subject]

Goal. I am going to try *very hard* to make it seem like **expressivism for imperatives** is neither methodologically nor empirically viable—that propositional accounts of imperative meaning are actually the best game in town. That is going to seem like bad news for norm expressivism. But the news is actually quite good for expressivism for imperatives. That turns out to be *very good news* for norm expressivism.

1.1 Characterizing Expressivism

> "The performative aspect of [an imperative's] meaning... [explains] everything that needs to be explained about its meaning" (Portner 2007)

Methodological component. Conventional Meaning as Use (CMAU)

- $!\phi$'s meaning is a matter of what a speaker uses it to do (its *conventional function in discourse*, CF).
- CF is explanatorily fundamental.
- The job of an expressivist theory of meaning is to define an interpretation $[\cdot]$ mapping a sentence into its CF.
- I treat CFs as CCPs, or instructions for updating one's mental state—modeled as functions from an input state to an output state. (I'll use "CCP" interchangeably with "illocutionary/speech act.")

Empirical component. Imperative use as *practical*. Imperative CF contrasts with declarative CF, along two dimensions.

- Imperatives are **directive**, declaratives **representational**.
- **Performative**. Imperatives create, rather than describe, obligations.

1.2 Trouble for expressivism?

Uncontroversial. Imperatives typically have a practical use.

Controversial. Whether imperatives' practical use...

i. Is conventionalized; *could be part of* their meaning.
(Disputing empirical component.)

ii. Can be *explanatorily fundamental* in a theory of their meaning.
(Disputing methodological component.)
(Different from (i) on account of things like conventional implicatures, which are conventionalized but non-fundamental.)

This talk outlines three pressing challenges for (i) and (ii). And it shows how to develop an expressivist theory of imperative meaning that meets them all.

1.3 Two forms of expressivism for imperatives

Obligation-creation (Lewis 1979). Imperatives introduce **new deontic facts** into a discourse.

> Suppose that at t the Master says to the Slave $!\phi$; and suppose that the sphere of permissibility just before t contains some worlds, accessible at t, where ϕ is false at t. Then the sphere must contract to cut those worlds out: at t, and thereafter at least until the next change, none of those worlds are permissible. If the Master changes the sphere in this way by saying $!\phi$, we say that the Master commands that ϕ
>
> (David Lewis, 1979, "A Problem about Permission").

This is not an expressivist theory of meaning for imperatives—not, in fact, a theory of meaning at all. But we can make it into one.

- $[!\phi]$ outputs a state verifying $\Box\phi$. An imperative $!\phi$'s CF is to COMMAND.
- What is it for a state to verify $\Box\phi$?

  - A state $\sigma = \langle I_\sigma, ok_\sigma \rangle$
    $I_\sigma \subseteq W$ is the **sphere of relevant possibilities**
    $ok_\sigma \subseteq I_\sigma$ is the **sphere of permissibility** (accessible "places" SLAVE can permissibly "go" given MASTER's commands)
  - A state verifies $\Box\phi$ iff ϕ holds throughout ok_σ:
    $\sigma \vDash \Box\phi$ iff $ok_\sigma \subseteq [\![\phi]\!]$

- What does $[!\phi]$ do to make a state verify $\Box\phi$?

(4) $$ok_{\sigma[!\phi]} = ok_\sigma \cap [\![\phi]\!]$$

Reason-creation. Portner's (2004; 2007; 2010) represent the most complete account of the CF of imperatives on the market. Key parts.

- $!\phi$ proposes $[\![\phi]\!]$ for addition to the addressee σ's "To-Do List" Π_σ.

(5) $$\Pi_{\sigma[!\phi]} = \Pi_\sigma \cup \{[\![\phi]\!]\}$$

- A To-Do List for a state σ **characterizes a permissibility sphere**. How?

  It characterizes an **ordering on possibilities**: w is at least as good as v (according to σ) iff everything in Π_σ that v satisfies is satisfied by w.

  Possibilities are ok (according to σ) just if no other possibility in I_σ is strictly better (according to $\preceq_{\Pi_\sigma}$).

Comparison. Both Lewis and Portner tie imperative CF closely to commanding.

- The Lewis-inspired account *conventionalizes* this: $\forall\sigma,\phi : \sigma[!\phi] \vDash \Box\phi$
- Portner conventionalizes something else: $!\phi$ makes ϕ-possibilities *ceteris paribus favored*. To utter $!\phi$ is to give one's addressee a reason to realize ϕ. This tends to make ϕ obligatory, but only *ceteris paribus*.

  Whenever σ is **indifferent** between ϕ and $\neg\phi$,[1] it follows that $\sigma[!\phi] \vDash \Box\phi$.

  On the other hand, typically, $\sigma[!\phi]...[!\neg\phi] \nvDash \Box\neg\phi$.

1 Definition: σ is **indifferent** between ϕ and $\neg\phi$ iff $\exists w,v \in ok_\sigma : w \in [\![\phi]\!] \wedge v \in [\![\neg\phi]\!] \wedge w =_{\Pi_\sigma} v$.

1.4 Propositionalism

Imperative meanings are typed as *propositions*.

- **The Modal Account** (Åqvist 1964; Han 1998; Schwager 2006; Aloni 2007):[2] *get lost* ≈ *you must get lost*

(6) $$[\![!\phi]\!] = [\![\Box\phi]\!]$$

Explananda for modal accounts. MAs must explain why, despite their semantics, imperatives:

- Have a **paradigmatically practical, non-representational use**.
- ***Cannot* be used to proffer their semantic contents**.
- On Stalnaker's model of assertion, since $[\![!\phi]\!] = [\![\Box\phi]\!]$ = a proposition p (a picture of a way the world might be), we expect $\sigma[!\phi] = \langle I_\sigma \cap p, \Pi_\sigma \rangle$.
- But addition to my information changes *what I believe about* what I must do, not *what I must do*.

Perhaps obligation-change is a **byproduct** of semantic interpretation?

- **Gricean reasoning?** In uttering $!\phi$, S expressed $p = [\![\Box\phi]\!]$. But if S *meant* p, S violated the Quality Maxim. S is cooperative, so S didn't mean p.

  Problem: conversational implicatures are cancelable:

(7) ✓Some dogs bark. Indeed, all do.

(8) #Go away, although I don't care if you do.

Lewis (1979) and Schwager (2006) say it's **presuppositional**:

- An utterance of $!\phi$ by S in a context c is felicitous only if c recognizes S as an **authority** about $\Box\phi$. Given a felicious utterance of $!\phi$ in c, c *deferentially adjusts* to make it the case that $\Box\phi$.
- This looks ok: expressivists require deference to authority too!
- But then isn't the modal content of the imperative idle? In fact, no...

2 Two less popular propositional views, which I have to bracket here: (i) **Explicit performative** (Lewis 1970): *leave!* ≈ *I order you to leave.* (ii) **Future-tensed indicative** (Geach 1958): *leave!* ≈ *you will leave*.

2 Problems for expressivism

2.1 *Conditional imperatives normally create conditional obligations*

20th Century speech act theory. Speech acts (forces, CFs, etc.) specifiable with terms of the form $\ulcorner F(p) \urcorner$, where F designates a kind of force, p its content.

- A command to get lost is represented as COMM(⟦*you get lost*⟧).
- **Conditional speech acts**, too.

  (9) If Ralph has quit, I designate you his replacement.

Choice 1: Wide-scoping. CIs *command that p*, for some *p*.

(10) $[(\mathit{if}\ \phi)(!\psi)] := [!(\phi \supset \psi)]$

Problem. CIs articulate constraints on planning relative to **contingencies** (situations relevant to planning, hence specified in terms of an agent's *information*).

- Consider the CI *if it rains, shut the window!* and suppose $\sigma \vDash$ *it's not raining*. σ adjusts its plans for the contingency where *it learns it's raining*.
- This generalizes the **Ramsey Test** for indicatives: to evaluate $(\mathit{if}\ \phi)(\psi)$ (for any ψ), (i) add ϕ to your information, (ii) evaluate/execute ψ.

Contingency planning is not reducible to planning that $\phi \supset \psi$ in the current situation! To support this, notice (11) places *consistent constraints* on our plans.

(11) a. If it rains, just bring the umbrella. $:= ![R \supset (U \wedge \neg S)]$
b. If it doesn't, just bring the sunglasses. $:= ![\neg R \supset (\neg U \wedge S)]$
c. Bring both. $:= !(U \wedge S)$

But if the CIs tell us how to plan in the current contingency, they're inconsistent! (Given we bring both, the only way the imperatives are satisfied is if $(\neg R \wedge \neg\neg R)$.)

Choice 2: Narrow-scoping (update "deferred") CIs express a conditional speech act: $[!\psi]$ is executed when the state verifies ϕ.

(12) $[(\mathit{if}\ \phi)(!\psi)] = [!\psi] \cap \{\langle \sigma, \tau \rangle : \sigma \vDash \phi\}$

Advantage. This seems vaguely consonant with the spirit of the Ramsey Test.

Problem. A CI like (13a) typically establishes a CO like (13b).

(13) a. If school is cancelled, go to the library.
b. If school is cancelled, you should to go the library.

More generally, even when σ doesn't verify ϕ, we *typically* have:

- Fact 1: σ doesn't verify $(\mathit{if}\ \phi)(\Box\psi)$
  (The point of the CI is to make the state verify the corresponding CO.)
- Fact 2: $\sigma[(\mathit{if}\ \phi)(!\psi)]$ does verify $(\mathit{if}\ \phi)(\Box\psi)$
  (The CI succeeds.)

This is *impossible* on the conditional speech act account, since, when σ doesn't verify ϕ, the update *idles*: $\sigma[(\mathit{if}\ \phi)(!\psi)] = \sigma$.

Upshot. Where expressivists have trouble identifying a meaning for a CI, the modal account has none at all:

- The meaning of the CI is identified with the corresponding CO:
  $⟦(\mathit{if}\ \phi)(!\psi)⟧ := ⟦(\mathit{if}\ \phi)(\Box\psi)⟧$ (cf. Schwager 2006)
- No need to posit a *speech act* α such that $\sigma\alpha \vDash (\mathit{if}\ \phi)(\Box\psi)$.

2.2 *It gets worse: non-command uses*

Imperatives have a wide range of standard uses—much wider than commanding (examples from Wilson & Sperber 1988).

Come earlier (if you like)	(*permission*)	Have an apple	(*invitation*)
Talk to your advisor soon	(*advice*)	Take Broadway (for 14th)	(*instruction*)
Get well soon	(*good wish*)	Throw it, just you dare	(*dare/threat*)

Some of this is explicable as variation in the *kind of plan* updated (cf. Portner 2007).

- Commands ⇒ *deontic* plan
- Suggestions, advice ⇒ *bouletic/teleological* plan[3]

3 This mimics Kratzer (1981)'s argument against the polysemy of modals: whether a modal has a deontic or bouletic interpretation depends on *what kind of ordering* determines their domain of quantification. But that is not ambiguity—it is *parametric variation in a single meaning*.

Instruction imperatives don't fit into this mold.

(14) **A**: What's the best way to get to 14th from here?
B: Take Broadway.

A cannot respond as if **B** had proposed a change to her plans. She may respond as if **B** had told her how best to get to 14th. (This basically generalizes to all instruction imperatives—recipes, IKEA guides, etc.—although their meaning varies.)

(15) No, Broadway's closed. (*or*: Right! I forgot 14th is the best way to B-Way!)

(16) **A**: How does one get to 14th from here?
B: Take Broadway.
#**A**: Sure, okay.

Modal accounts. Instruction imperatives are *goal-oriented modals* (von Fintel & Iatridou 2008): *take Broadway to get to 14th* ≈ *to get to 14th, you should take Broadway*.

(17) $[\![!\textit{take Broadway (to get to 14th)}]\!] := [\![\Box_g \textit{you take Broadway}]\!]$
$[\![\Box_g \textit{you take Broadway}]\!] = 1$ iff $ok_g \subseteq [\![\textit{you take Broadway}]\!]$
$[\![g]\!] = \{[\![\textit{you get to 14th}]\!]\}$

2.3 *Logic and inference*

The exact nature of imperatives' logical/inferential properties is controversial (partly because imperative logic lacks a solid foundation; Charlow 2009).

Here, though, is a property that's pretty uncontroversial. Consider a dual operator for the imperative marker, the **permission operator** ¡

- Typically $\sigma[¡\phi] \vDash \Diamond\phi$.
- Fact: an imperative $!\phi$ is **inconsistent with** a contrary permission $¡\neg\phi$.
  #Go to bed, but you can stay up.

As Schroeder (2008) has noted, expressivists have difficulty accounting for such basic semantic properties.

- Expressivists must explain the inconsistency of $\{!\phi, ¡\neg\phi\}$ in terms of their meanings—their CFs (*commanding* ϕ and *permitting* $\neg\phi$).
- Now, there is a sense in which *commanding* ϕ and *permitting* $\neg\phi$ are clearly inconsistent. But, implicitly, this sense appeals to rational norms that proscribe *commanding* ϕ and *permitting* $\neg\phi$.
- Usually, though, we think of semantics as explaining the rational norms: *asserting* ϕ and *asserting* $\neg\phi$ are inconsistent because $\{\phi, \neg\phi\} \vDash \bot$.

But consider a natural extension of the modal account to the permission operator: $[\![¡\phi]\!] := [\![\Diamond\phi]\!] := [\![\neg\Box\neg\phi]\!]$. It's trivial to prove the inconsistency of $\{!\phi, ¡\neg\phi\}$.

3 The way out

3.1 *An account*

Basic idea. The modal account errs in **direction-of-fit**: imperatives *establish* (not represent) modal facts. They set targets for a plan, *specified in terms of modal facts*.

- This suggests a broadly Lewisian strategy for identifying a CF for basic, unembedded imperatives: an imperative's CF is *to propose that a salient plan come to verify a corresponding modal fact*.

  Part 1: Identify the property $\mathcal{P}$ a state has when it verifies $\Box\phi$.

  Part 2: $\mathcal{P}$ is the property that $!\phi$ proposes a state to satisfy.

  Part 3: Define $[\cdot]$ so that $\sigma[!\phi]$ satisfies $\mathcal{P}$.

Generalizing the strategy. For an imperative $C = \kappa!\phi\kappa'$, we'll say that $MOD(C) = \kappa\Box\phi\kappa'$ is C's **corresponding modal sentence**.[4] So, given *any* imperative C:

4 Notice that, for any imperative $!\phi$ embedded in $\kappa!\phi\kappa'$, with κ and κ' arbitrary strings, if $\kappa!\phi\kappa'$ is well-formed, $\kappa\Box\phi\kappa'$ is well-formed.

(18) a. If you leave, shut the door.
b. If you leave, you must shut the door.

(19) a. Stop, or I'll shoot.
b. You must stop, or I'll shoot.

Pseudo-imperatives (Russell 2007) are an apparent exception.

(20) a. Drink another beer, and we'll set a record.
b.??You must drink another beer, and we'll set a record.

Our Generalized Strategy is meant to apply only to imperative clauses. (20a) is semantically conditional, with *[you] drink another beer* subordinated to *we'll set a record* (cf. von Fintel & Iatridou 2009).

Part 1: Identify the property $\mathcal{P}$ a state has if it verifies $MOD(C)$.

Part 2: Define $[\cdot]$ so that $\sigma[C]$ satisfies $\mathcal{P}$.

Part 1 requires a semantics for modals. We need to know what property a state has when it verifies a modal sentence.

(21) $\sigma \vDash \Box\phi$ iff $ok_\sigma \subseteq [\![\phi]\!]$ (Where ok_σ gives the $\preceq_{\Pi_\sigma}$-best worlds in I_σ)

So, in the simplest case (notating the property specified by an imperative C as $[\![C]\!]$):

- $[\![!\phi]\!]$ is the property a state σ has when ϕ holds throughout σ's sphere of permissibility.

  (22) $[\![!\phi]\!] = \lambda\sigma.\sigma \vDash \Box\phi = \{\sigma \mid ok_\sigma \subseteq [\![\phi]\!]\}$

Part 2: characterization of $[\cdot]$**.** For any imperative C, the result of updating with C is a state that verifies $MOD(C)$. In short, $\sigma[C] \in [\![C]\!]$.

- We must choose some $\Sigma \subseteq [\![C]\!]$ such that, if $\sigma' \in \Sigma$, then $\sigma' \in \sigma[C]$.
- σ' will be *maximally conservative with respect to* σ.
  - Changes to I_σ are ruled out.
  - Also, typically—when your input plans are indifferent between ϕ and $\neg\phi$—the minimal change is just adding $[\![\phi]\!]$ to Π_σ (à la Portner).
  - What about the other cases? Whatever the answer, it won't be part of the theory of meaning.[5] Just as a theory of what makes belief-update *conservative* is not a part of the theory of meaning for declaratives.

3.2 *Conditional imperatives*

A CI $(\textit{if}\ \phi)(!\psi)$ enforces the corresponding CO:

(23) $[\![(\textit{if}\ \phi)(!\psi)]\!] := \lambda\sigma.\sigma \vDash (\textit{if}\ \phi)(\Box_{\Pi_\sigma}\psi)$

(24) $\sigma[(\textit{if}\ \phi)(!\psi)] \vDash (\textit{if}\ \phi)(\Box\psi)$

Contingency planning is about planning what to do, given monotonic increases in one's information. So: I think of a plan Π_σ as specifying, for each $I \subseteq I_\sigma$, a series of things an agent plans at I.

5 See my dissertation for a tentative definition of conservative plan-update.

- **Ramsey Test for COs.** Evaluating $(\textit{if}\ \phi)(\Box\psi)$ at σ is a matter of checking the status of $\Box\psi$ at $\sigma[\phi]$:
  i. Update temporarily with the antecedent.
     (Move temporarily to $\sigma[\phi] = \langle I_{\sigma[\phi]}, \Pi_{\sigma[\phi]}\rangle$.)
  ii. Evaluate the consequent.
     (Check to see whether $\sigma[\phi] \vDash \Box\psi$.)
  iii. If YES, $\sigma \vDash (\textit{if}\ \phi)(\Box\psi)$. If NO, $\sigma \nvDash (\textit{if}\ \phi)(\Box\psi)$.
- Similarly for CIs: evaluating $(\textit{if}\ \phi)(!\psi)$ at σ is a matter of updating σ's plans with $!\psi$ for contingencies where ϕ is known—executing $!\psi$ at $\sigma[\phi]$.

  It *follows* that updating with CIs creates corresponding COs.

Whither the Standard Account? This CF *cannot* be within the paradigm sanctioned by 20th Century Speech Act Theory.

- This is one reason, among many others, to reject the paradigm.
- **Quantified addressee imperatives** and **pair-list readings of questions** (Krifka 2001) are not so representable either: they require (something like) quantifiers *out-scoping* force-operators.

  (25) Everyone sit! $= \forall x : x!(sit(x)) \neq\ !\forall x(sit(x))$

  (26) What did each chef make! $= \forall chef\, x : ?y : made(x, y)$
  $\neq\ ?y : \forall chef(x) : made(x, y)$

3.3 *Logic and inference*

An expressivist notion of inconsistency.

(27) $\{\chi, \chi'\}$ is **expressivist-consistent** iff $\exists\sigma : \sigma \vDash \chi$ and $\sigma \vDash \chi'$.

Extending to our General Strategy for imperatives to permissions, as in (28) and (29) it follows directly that $\{!\phi, ¡\neg\phi\}$ is expressivist-incst.

(28) $[\![¡\phi]\!] := \lambda\sigma.\sigma \vDash \Diamond_{\Pi_\sigma}\phi$

(29) $\sigma[¡\phi] \vDash \Diamond\phi$

- Obviously, there is no σ that verifies both $!\phi$ and $¡\neg\phi$. So they are expressivist-incst.
- The inconsistency here stems from the fact that $!\phi$ and $¡\neg\phi$ express **non-co-satisfiable** properties of σ: no single state verifies both.

- This makes precise the intuition Dreier (2009) is driving at:

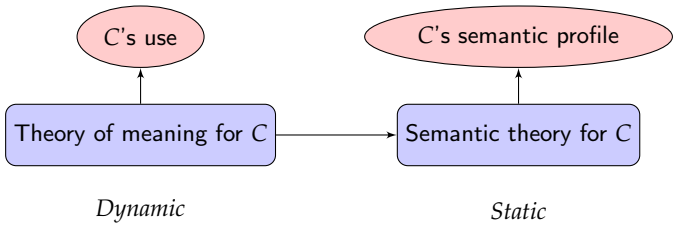
> A pair of attitudes could be in disagreement if holding them together is incoherent. Of course, there is no incoherence in *your* preferring soup to salad and *my* preferring the converse; the idea is rather that I'll find your attitude unacceptable just in that *I could not add it to my own without changing my mind about something or other*.

3.4 *Non-command uses*

Instruction imperatives. Because $[\![!\phi]\!]$ specifies a property of *plans* (i.e., is a function from plans into propositions), feeding it a plan Π yields a proposition—namely, the modal proposition $[\![\Box_\Pi \phi]\!]$ (roughly: *in view of* Π, *should* ϕ).

4 The Payoff

4.1 *Expressivism in meta-ethics*



Expressivism in meta-ethics. Norm expressivism *can* (and *ought to*) be evaluated *empirically*. (Sounds uncontentious, but it actually isn't.) Norm expressivism says:

- **Methodological**: a theory of the meaning of normative language is a theory of their CF (CMAU).
- **Empirical**: the CF of normative language is non-representational.
- Meta-ethicists have focused on the methodological claim, arguing that no theory of the meaning of normative language which explains its meaning in terms of a non-representational CF could *possibly* work.
- Here, though, is a theory of meaning for imperatives which *does* work. Whether it extends to normative language is a matter of whether normative language *has a non-representational* CF. That is an empirical question.

4.2 *Valid imperative inference*

Practical reasoning often employs imperatives, and it's desirable to have a theory of when such reasoning is *formally correct*. We have such a theory.

Practical reasoning and dynamic non-monotonicity. The verification relation $\vDash$ is, notice, non-monotonic!

(30) $$\sigma \vDash \phi \;\not\Rightarrow\; \sigma[\psi] \vDash \phi$$

Consider the following episodes of practical reasoning.[6] Let $\sigma = \langle W, \emptyset \rangle$.

(31) You plan to go outside. $\sigma[!out]$
You plan to be warm. $\sigma[!out][!warm]$
You realize wearing a coat is the only way to be warm outside.
$\sigma[!out][!warm][(warm \wedge out) \supset coat]$
So, you plan to wear a coat.
$\sigma[!out][!warm][(warm \wedge out) \supset coat] \vDash !coat$

The "validity" of the practical inference is predicted by our account. Cool! Then you pick up a copy of *GQ* and your plans change.

(32) You decide to be stylish. $\sigma[!out][!warm][(warm \wedge out) \supset coat][!stylish]$
You realize wearing a light blazer is the only way to be stylish outside.
$\sigma[!out][!warm][(warm \wedge out) \supset coat][!stylish][(stylish \wedge out) \supset blazer]$
So, you still plan to go out.
$\sigma[!out][!warm][(warm \wedge out) \supset coat][!stylish][(stylish \wedge out) \supset blazer] \vDash !out$
But, you no longer plan to wear a coat. You plan to wear a blazer.
$\sigma[!out][!warm][(warm \wedge out) \supset coat][!stylish][(stylish \wedge out) \supset blazer] \nvDash !coat$
$\sigma[!out][!warm][(warm \wedge out) \supset coat][!stylish][(stylish \wedge out) \supset blazer] \vDash !blazer$

Again, the validity of these inferences is predicted by our account.[7] Cool!

4.3 *Other stuff*

- **Conversational dynamics**. (i) what agents are doing when they issue imperatives (hint: *not* exchanging information, not primarily anyway), (ii) how their interlocutors interpret them.
  - **Decision theory**. A theory of diachronic rationality = *belief-dynamics* (update on information) + *plan-dynamics* (update on directives).

6 For more, see my (2010).

7 I feel some pull to say that you don't plan to do either. But, although the account could accommodate this with some tweaking, I don't go for it. If at t a *rational* agent plans to be stylish *after* some t' at which she planned to be warm, for some contingency C where she knows she cannot do both, she plans to be stylish at C, and gives up her plan to be warm at C.

- **Linguistic methodology.** A theoretical success for expressivist methodology. Indeed, a strict empirical improvement on propositional accounts of imperatives. (Unavailability of proposition-proffering interpretations.)

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