

If

Kai von Fintel (MIT)

October 18, 2016 – Manchester CIDRAL Public Lecture

I am a semanticist. I work on meaning.

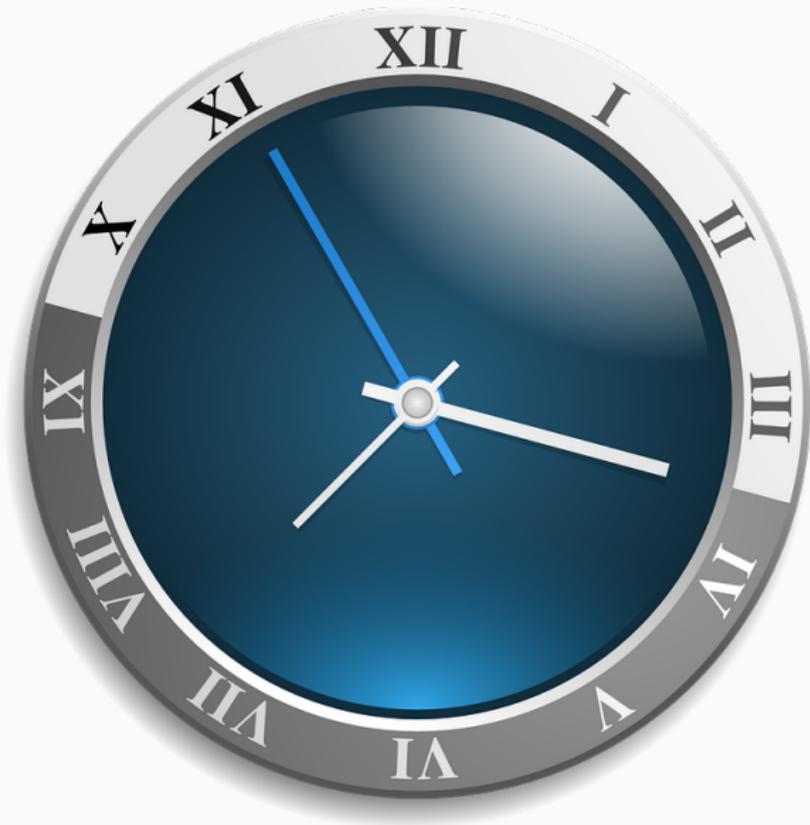
“That’s just semantics!”

1. Possible Worlds Semantics
2. Conditional Sentences
3. *If*-less Conditionals









OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

Bee Threat Elicits Alarm Call in African Elephants

Lucy E. King , Joseph Soltis , Iain Douglas-Hamilton, Anne Savage, Fritz VollrathPublished: April 26, 2010 • <http://dx.doi.org/10.1371/journal.pone.0010346>

Article	Authors	Metrics	Comments	Related Content
---------	---------	---------	----------	-----------------

Abstract

Introduction

Results

Discussion

Materials and Methods

Supporting Information

Acknowledgments

Author Contributions

References

Reader Comments (1)

Media Coverage (1)

Figures

Abstract

Unlike the smaller and more vulnerable mammals, African elephants have relatively few predators that threaten their survival. The sound of disturbed African honeybees *Apis mellifera scutellata* causes African elephants *Loxodonta africana* to retreat and produce warning vocalizations that lead other elephants to join the flight. In our first experiment, audio playbacks of bee sounds induced elephants to retreat and elicited more head-shaking and dusting, reactive behaviors that may prevent bee stings, compared to white noise control playbacks. Most importantly, elephants produced distinctive "rumble" vocalizations in response to bee sounds. These rumbles exhibited an upward shift in the second formant location, which implies active vocal tract modulation, compared to rumbles made in response to white noise playbacks. In a second experiment, audio playbacks of these rumbles produced in response to bees elicited increased headshaking, and further and faster retreat behavior in other elephants, compared to control rumble playbacks with lower second formant frequencies. These responses to the bee rumble stimuli occurred in the absence of any bees or bee sounds. This suggests that these elephant rumbles may function as referential signals, in which a formant frequency shift alerts nearby elephants about an external threat, in this case, the threat of bees.

thebaconsandwichofregret:

kimbbearly:

why dont humans have a specific noise that means "there are bees here lets leave immediately" why are elephants more advanced than us

we do have a specific noise, it sounds like this:

"there are bees here lets leave immediately"

Source: kimbbearlyold

- (1) A former meerkat expert at London Zoo has been ordered to pay compensation to a monkey handler she attacked with a wine glass in a love spat over a llama-keeper.

[Associated Press, Oct. 14, 2015]

The sentence “A former meerkat expert at London Zoo has been ordered to pay compensation to a monkey handler she attacked with a wine glass in a love spat over a llama-keeper.”

is true if

a former meerkat expert at London Zoo has been ordered to pay compensation to a monkey handler she attacked with a wine glass in a love spat over a llama-keeper.

Meanings of sentences

- describe the world
- distinguish between ways the world may be, matching some of them, not matching others

“Ways the world may be” = possible worlds

Assertions make claims about what the world is like.

Questions ask what the world is like.

Commands order changes in what the world is like.

There are many ways the world may be.

Language is a precision instrument to distinguish between many possible ways the world may be.

Our job as semanticists:

Reverse engineer this precision instrument.

Meanings come about through a combination of

- individual elements of meaning
- the hierarchical syntactic structure they occur in
- principles of meaning composition
- inferences about the situation an expression is used in
- ...

Semantics is at the nexus of

- linguistics
- philosophy
- psychology/cognitive science
- computer science

Two (or three) kinds of elements of meaning:

- content words (*chair, love, ponder, incandescent, ...*)
- “function”/logical words (*the, most, and, if*)

- and maybe: structural configurations.

Oh, those big little words!

After cataloguing various ‘improper’ senses of *only*, Ockham remarks that

These are the senses, then, in which the exclusive expression can be taken improperly. And perhaps there are still other senses in which it can be taken improperly. But since they are not as widely used as the ones we have dealt with, I will leave them to the specialists.

“A glorious picture indeed: **monasteries crammed to the spires with specialists on *only***, laboring away on the fine points of the semantics of exclusive propositions. Those were the days!”
(Larry Horn)

*So, with the throttling hands of death at strife,
Ground he at grammar;
Still, thro' the rattle, parts of speech were rife:
While he could stammer
He settled οτι's business — let it be! —
Properly based ουv —
Gave us the doctrine of the enclitic δε,
Dead from the waist down.*

Robert Browning: "A Grammarian's Funeral"

...in this chapter we shall consider the word “the” in the singular, and in the next chapter we shall consider the word “the” in the plural. It may be thought excessive to devote two chapters to one word, but to the philosophical mathematician it is a word of very great importances: like Browning’s grammarian with the enclitic $\delta\epsilon$, I would give the doctrine of this word if I were “dead from the waist down” and not merely in prison.

Bertrand Russell: 1919, *Introduction to Mathematical Philosophy*

*The word "if", just two tiny letters
Says so much for something so small
The biggest little word in existence;
Never answers, just questions us all*

*If regrets were gold, I'd be rich as a queen
If teardrops were diamonds, how my face would gleam
If I'd loved you better, I wouldn't be lonely
If only, if only, if only*

Dolly Parton, *If Only*

If

(2) If it had rained, I would have used an umbrella.

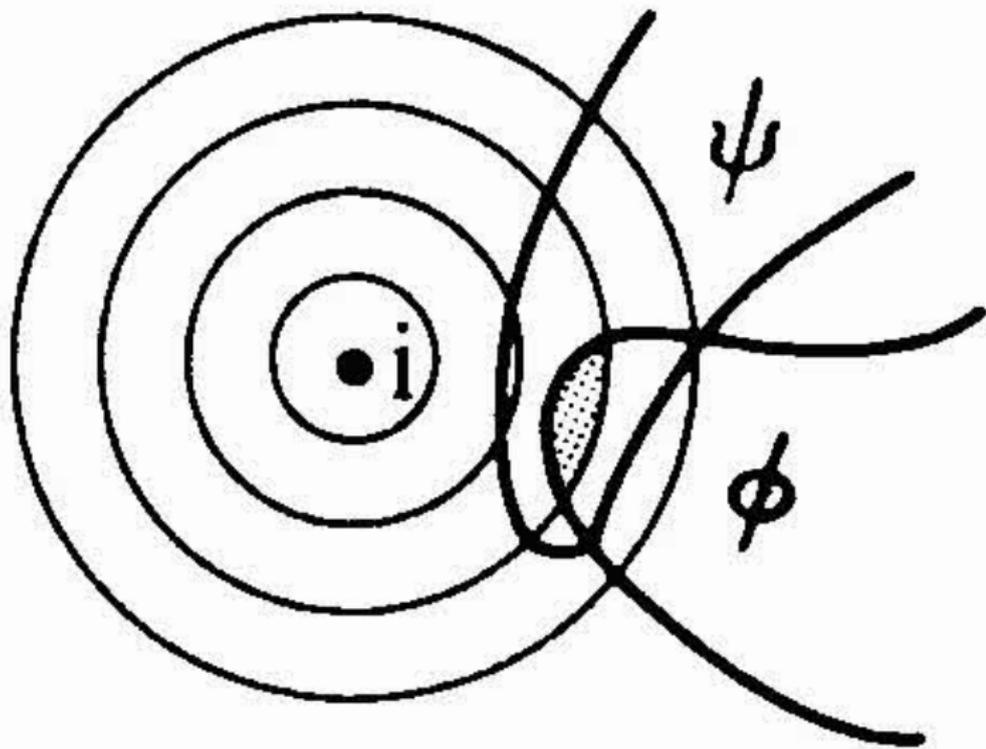
- the *if*-clause sets up a hypothetical scenario
- the consequent is used to characterize the scenario

The world as it would have been like if it had rained
is a world where I used an umbrella.

if p takes us to the world that is just like the actual world in all respects other than that *p* is true (and whatever is needed to make *p* true)

the consequent *q* is then used to describe the world that *if p* took us to





(3) If Caesar had fought the Korean War, he would have used catapults.

vs.

(4) If Caesar had fought the Korean War, he would have used nuclear weapons.

<http://youtube.com/watch?v=0lpY0Kt4bn8>

(5) If kangaroos had no tails, they would topple over.

What use are claims about other possible worlds?

(6) If there was an earthquake tomorrow, this house would collapse.

(6) If there was an earthquake tomorrow, this house would collapse.

In a world just like ours (where the house is built the same way, the same laws of physics apply, ...) but where there is an earthquake, this house collapses.

There are many kinds of conditionals, with subtle (or not so subtle) differences in meaning.

Prediction vs. Deduction:

- (7) If Alex leaves before rush hour, she will be in the office on time.

- (8) If Alex is in the office, she left before rush hour.

Open possibility vs. Counterfactual:

- (9) If Alex leaves before rush hour, she will be in the office on time.
- (10) If Alex had left before rush hour, she would have been in the office on time.

Factual Conditionals:

(11) If you're so smart, why are you at this boring lecture?

Biscuit Conditionals:

(12) If Alex is hungry, there are granola bars in the car.

Is it all about *if*?

In a world where there's no *if*, could we express conditional thoughts?

Are we just lucky to have “invented” *if*?

Evans & Levinson:

Consider that instead of saying, “If the dog barks, the postman may run away,” we could say: “The dog might bark. The postman might run away.” In the former case we have syntactic embedding. In the latter the same message is conveyed, but the “embedding” is in the discourse understanding – the semantics and the pragmatics, not the syntax. It is because pragmatic inference can deliver embedded understandings of non-embedded clauses that languages often differ in what syntactic embeddings they allow. For example, in Guugu Yimithirr there is no overt conditional – and conditionals are expressed in the way just outlined.

- (13) Alex might leave before rush hour. He would get there on time.
- (14) Alex might get hungry. There's granola bars in the car.

(15) Alex goes in there, he'll get shot.

(16) Alex is in his office, he left early.

(17) You're so smart, why don't you do this yourself?

(18) You're hungry, there's pizza.

(19) No pain, no gain.

(20) No shoes, no shirt, no service.

(21) No shirt, no shoes, no problem.

(22) No shirt, no shoes, full service.

(23) Shirt (and) shoes, service.

So, we can express conditionals simply by juxtaposing antecedent and consequent.

Connecting two propositions into a conditional meaning is one of the very few fundamental ways of connecting propositions.

And it's the only one where the two propositions aren't both claimed to be true of the actual world.



- (24) Louie sees you with the loot and he puts out a contract on you.
- (25) You drink one more can of beer and I'm out of here.
- (26) One more can of beer and I'm out of here.
- (27) Ignore your homework and you will fail this class.
- (28) You only have to look at him and he shies away in fear.

Greek

- (29) *O skilos mu akui keravnus ke krivete kato apo*
the dog my hears thunder and hides under
to trapezi
the table

'My dog hears thunder and hides under the table'

- (30) *Ena lathos akoma ke tha se apoliso*
One mistake more and will you fire

'One more mistake and I will fire you'

Palestinian Arabic

(31) *Bet-talla' fee-ha w be-hmarr wejh-o*
b-look.3sgm in-her and b-redden3sgm face-his

'He looks at her and his face reddens'

(32) *Kamaan ghaltah w betorr-o-ok*
Another mistake and b-fire.3-pl-you

French

(33) *il voit son patron et il s'enerve*
he sees his boss and he gets nervous

(34) *une biere de plus et nous vous expulserons*
one beer more and we you fire

'One more beer and we will fire you'

Albanian

(35) *Mesuesi e-cl shikon dhe ai fshihet nen*
The teacher looks at him and he hides under
tavoline
table-the

(36) *nje gabim dhe do te te pushoj (nga puna)*
one mistake and fut you fire (from work)

‘One mistake and I will fire you’

Turkish (also Bangla, Hindi)

- (37) **kadın-lar-a gülümse-me -si yeter*
woman-pl-dat smile -'ing'-3.sg.poss sufficient
ve hemen kendisin -e
and immediately he (logophoric pronoun, 3.sg) -dat
tut -ul -ur- lar
capture -(impers.) pass -aor -3.pl.

int.: 'It's enough for him to smile at women and they immediately fall for him'

(38) ??/**Bir hata daha ve sen -i iş*
one mistake more and you (sg.) -acc work
-in -den at -ar -lm
-2.sg.poss -abl. throw -aor. -1.sg

‘one more mistake and I’ll fire you from your job’

- (39) John is not here and he's at home.
≠ (If) John's not here, he's at home.

- (40) a. One more can and I would have fired you.
- b. *You had drunk one more can and I would have fired you.
- c. *Drink one more can and I would have fired you.

- (41) a. One more can and I would have fired you.
- b. *You had drunk one more can and I would have fired you.
- c. *Drink one more can and I would have fired you.

(42) ??You're so smart and you should do it yourself.

(43) !!You're hungry and there's biscuits on the sideboard.

Finally, the type of sentence we've recently worked on:

(44) Drink one more can and I am out of here.

This has a conditional meaning. It's a conjunction of an imperative and a declarative consequent (*IaD*).

Greek:

(45) *Fae ena apo afta ke tha pethanis mesa se 24*
Eat.IMP one from these and FUT die within 24
ores
hours

‘Eat one of these and you will die within 24 hours’

Palestinian Arabic:

(46) *Ilmis-ha w b-tindam tool 'omr-ak*
touchIMP-it and b-regret.2sgm all life-your

'Touch it and you will regret it the rest of your life'

French:

(47) *ignore tes devoirs et tu échoueras*
ignore your homework and you fail-FUT

'Ignore your homework and you will fail'

Albanian:

(48) *haje kete dhe do te vdesesh brenda 24 oresh*
eat this and you will die within 24 hours

'Eat this and you will die within 24 hours'

Same exception: Turkish

(49) ??/**Cok* *CallS* *ve* *baSarl-ll* *ol-ur* *-sun!*
much work (imp.) and success-with be-aor -2.sg

‘Study hard and you’ll succeed’

(50) ??/**Ev* *Odev-in* *-i* *unut* *ve*
home work-2.sg.poss -acc. forget (imp.) and
baSarl *-siz* *ol-ur-sun!*
success -without be-aor.-2.sg

‘Ignore your homework and you will fail’

Again, Bangla and Hindi work like Turkish: no IaDs!

Our conclusions:

- Imperatives don't directly contribute commands as their meaning.
- Their meaning is more minimal (kind of as minimal as *one more beer*).
- The conditional thought pattern can use imperatives as antecedents.
- The command (and other) meanings of the imperative on its own arises from the way its meaning interacts with a model of the goals of conversations. (But that's a story for another day.)

- Conditionals are a pattern at the very core of grammar.
- *If ... then* is just one convenient way of expressing the pattern, but there are many others.
- Possible worlds semantics is the best framework for thinking about the meanings of conditional sentences.

The logic of ordinary speech provides a field of intellectual study unsurpassed in richness, complexity, and the power to absorb.

(P.F. Strawson)

<http://kvf.me/cidral>