From conversation to inference, via consequence

Dave Ripley

University of Connecticut
http://davewripley.rocks

Charles Sturt University
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From bounds to meaning

Consequence

Inference

From bounds to meaning

Positions and bounds

In understanding conversational dynamics,
a scoreboard model has proved helpful.

Just as in sports, which moves are legal
depends on the current state of play.

One aspect of the scoreboard is each participant's position: the assertions and denials they've made.

Example:

It's only appropriate to say "You're mistaken, I didn't eat it" to someone who's asserted that you did eat it.

Positions are also useful for hypotheticals;
we need to track assertions and denials under supposition as well.

Example:

A: "We should take a day trip to Kapiti Island;
surely we'll see a kiwi there"

B: "No we wouldn't; kiwis are nocturnal"

We treat some positions as impossible.

- We don't take them seriously,
- we reinterpret or challenge speakers who seem to adopt them,
- we build reductio arguments from them,
- etc.

They are out of bounds.

From bounds to meaning

Meaning from bounds

These bounds can ground a theory of meaning.

Example:

Asserting	‘Melbourne is bigger than Canberra’
and	‘Canberra is bigger than Wagga Wagga’
while denying	‘Melbourne is bigger than Wagga Wagga’

is out of bounds.

This is what it is for transitivity to be part of the meaning of ‘bigger’.

Being out of bounds is like
being queen,
being impolite,
being (racially) white.

It is a socially constructed status:
what really has the status depends on
what we take to have it.

Connecting meaning to social kinds
in this way helps explain:

the gradualness of linguistic change, and
the impossibility of certain kinds of error.

Consequence

Consequence from bounds

The bounds can also ground a theory of
multiple-conclusion consequence.

Restall (2005, etc):

A bunch of premises Γ entails a bunch of conclusions Δ
iff the position that asserts the Γs and denies the Δs
is out of bounds.

Example:

Asserting	'Melbourne is bigger than Canberra'
and	'Canberra is bigger than Wagga Wagga'
while denying	'Melbourne is bigger than Wagga Wagga'

is out of bounds.

So 'M is bigger than C' and 'C is bigger than W' together entail 'M is bigger than W'.

Consequence

Principles

Let '$\Gamma \vdash \Delta$' mean that the position that asserts the Γs and denies the Δs is out of bounds.

Then we can explore general principles for the relation $\vdash$.
Three in particular will matter here.

Identity:

$A \vdash A$

Subposition:

If $\Gamma \vdash \Delta$, then $\Gamma, \Gamma' \vdash \Delta, \Delta'$.

Extensibility:

If $\Gamma \vdash \Delta, A$ and $A, \Gamma \vdash \Delta$, then $\Gamma \vdash \Delta$.

Extensibility (contrapositive):

If $\Gamma \nvdash \Delta$, then either $\Gamma \nvdash \Delta, A$ or $A, \Gamma \nvdash \Delta$.

Controversial principle: Restall accepts it; I think it's wrong.

A compositional theory of conjunction:

Assertibility conditions:

$$A \wedge B, \Gamma \vdash \Delta \quad \text{iff} \quad A, B, \Gamma \vdash \Delta$$

Deniability conditions:

$$\Gamma \vdash \Delta, A \wedge B \quad \text{iff:}$$
$$\text{both} \quad \Gamma \vdash \Delta, A \quad \text{and} \quad \Gamma \vdash \Delta, B.$$

This is beginning to look like a sequent calculus for classical logic.

Indeed, I reckon classical logic
gives a good (partial) theory of the bounds.

Inference

Deductive inference

Steinberger (2011) insists on the

Principle of Answerability:

"Only such deductive systems are permissible as can be seen to be suitably connected to our ordinary deductive inferential practices."

('Permissible' here means for inferentialist theories of meaning.)

He uses this to object to bounds-consequence;
it is not tied, he claims, to deductive inferential practices.

After all, it only tells us what we may not assert and deny,
not what we can deduce.

One response: concede the point.

So this isn't inferentialism. But it sure scratches the same itches.

A different response focuses
on “deductive inferential practices” themselves.

One key: they aspire to be non-ampliative.

In a correct deductive inference, the conclusion
does not go beyond the premises.

The bounds can give us an understanding of non-ampliative inference.

The key is in the notion of implicit assertion.

Inference

Implicit assertion

A speaker has implicitly asserted something when they may as well have actually asserted it, when an assertion of it would be redundant.

Positions have options open to them:
assertions and denials that can be added
without going out of bounds.

An act is redundant when it does not change these options.

Implicit assertion:

A position implicitly asserts something iff actually asserting it wouldn't change which assertions and denials would take the position out of bounds.

Asserting it wouldn't close off anything
that isn't already closed off.

Suppose $A \wedge B, \Gamma \vdash \Delta$ iff $A, B, \Gamma \vdash \Delta$,
and suppose Subposition.

Then any position that asserts $A \wedge B$
implicitly asserts A.

If asserting A would close off an option,
then asserting both A and B would close it off too (by Subposition),
and so asserting $A \wedge B$ has already closed it off.

Inference

Non-ampliativity

The idea:

The inference from premises Γ to conclusion A is non-ampliative iff every position that asserts all of Γ implicitly asserts A.

That is, an assertion of A is already implicit in any assertion of Γ.

Let $\Gamma \Vdash A$ mean that the inference from Γ to A is non-ampliative.

(Eg $A \wedge B \Vdash A$.)

In our deductive inferences, we aim to reach only those conclusions already contained in our premises, in this sense.

We want to deductively infer A from Γ only if $\Gamma \Vdash A$.

This is the tie to inferential practice. What's it like?

No matter what the bounds are, this gives reflexivity and monotonicity, not now for bounds-consequence, but for non-ampliative inference.

Facts:

- $A \vdash A$
- If $\Gamma \Vdash A$, then $\Gamma, \Delta \Vdash A$.

We might also get a kind of transitivity:

If the bounds obey Subposition:

- If $\Gamma \Vdash A$ and $\Delta, A \Vdash B$, then $\Delta \cup \Gamma \Vdash B$.

We can also connect non-ampliative inference to bounds-consequence.

If the bounds obey Identity:

If $\Gamma \Vdash A$, then $\Gamma \vdash A$.

If the bounds obey Extensibility:

If $\Gamma \vdash A$, then $\Gamma \Vdash A$.

That is, given Identity and Extensibility, bounds-consequence is exactly what we want to limit our deductive inferential practices to.

It meets Steinberger's Principle of Answerability.

Even without Extensibility for the bounds,
$\Vdash$ is a perfectly sensible relation.

It still connects the bounds to deductive inference.

It is just that it may not match bounds-consequence.

- The bounds give us a way to understand linguistic meaning in terms of a particular social kind.
- They also give (at least) two workable notions of consequence: bounds-consequence and non-ampliativity.
- If the bounds are extensibile, these notions collapse.
- Either way, non-ampliativity meets Steinberger's Principle of Answerability.