

Deliberation as Interactive Reasoning

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Pittsburgh Behavioral Models Conference

October 11, 2013

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(plus a little extra)

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What do we want from a model of behavior?

What *should* we want from a model of behavior?

Two things

1. Communication down

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Every assumption is a promissory note.

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Every assumption is a promissory note.

Those promises eventually have to be cashed out
physiologically.

2. Communication up

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Every conclusion is a potential reason.

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Every conclusion is a potential reason.

These reasons eventually have to enter arguments
normatively.

This view is *inferentialist*.

But what can inferentialism do for you?

Let's take deliberative democracy as an example.

What do we mean by deliberative democracy?

It depends on the “we.”

Deliberativists seem to mean

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No lying

Deliberativists seem to mean

No lying

No manipulating

Deliberativists seem to mean

No lying

No manipulating

Immediate goal is to understand
and be understood

Formal theorists seem to mean

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Cheap talk

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Cheap talk

Preference/Outcome Uncertainty

Formal theorists seem to mean

Cheap talk

Preference/Outcome Uncertainty

Immediate goal is to maximize utility
(minimize loss)

The stakes are different too.

Deliberativists think deliberation is about reasons, broadly understood.

Formal theorists think deliberation is about
information revelation.

Can't they both be right?
(And don't you kind of think they are?)

Can't they both be right?

Deliberation

A collaborative process for
deepening coherence and
getting normative soup
out of positive bones

Deliberation

Atomic parts:
statements and speech acts

In this setting, there are
no true statements,

In this setting, there are
no true statements,
no false statements,

In this setting, there are
no true statements,
no false statements,
no first principles.

Instead of truth, there is *coherence*.

Coherence is established by giving and asking for reasons (*speech acts*).

All *speech acts* (e.g., assertion) entail commitments.

Deliberation in this model
is about exploring and staking out positions
in the space of arguments.

The model

The model
Participants

The model
Participants
Statements

The model
Participants
Statements
Opinions

The model
Participants
Statements
Opinions
Cognitive Structures

The model
Participants
Statements
Opinions
Cognitive Structures
Speech Acts

The model
Participants
Statements
Opinions
Cognitive Structures
Speech Acts
Discursive Priorities

Statements

Start with simple statements.

Form a lattice with *and/or/not*; augment with *because*.

Define the whole set recursively based on operations.

Speech acts

Functions that take statements, participants,
as arguments.

assert, disavow, query-whether, query-why, challenge

Cognitive Structure

Define a participant's ***web of beliefs*** as a directed, weighted network on statements.

similar to *because*

The (immense) portion of these webs that overlaps is what philosophers mean by *lifeworld*.

Cognition is minimally/myopically logical.

Two statements are ***connected*** if

- (1) a participant is aware of both and
- (2) they have a common simple substatement.

Cognition is minimally/myopically logical.

Contradiction between two statements =
both have the same substatement,
one and only one of which is preceded by not.

Cognition is minimally/myopically logical.

$$\mathit{agree}_\rho(s, t) = (1 - 2 \mathit{contradict}(s, t)) \mathit{connect}_\rho(s, t)$$

Cognitive Structure

Opinions about statements & participants include info like ***salience, confidence, and coherence***.

Also, each participant has an opinion about the ***reliability*** of other participants.

What does a speech act do?

Say you assert s.

What does a speech act do?

Say you assert s.

I update:

What does a speech act do?

Say you assert s .

I update:

the *salience* of s (goes up)

What does a speech act do?

Say you assert s .

I update:

the *salience* of s (goes up)

my *confidence* in s (depending on how reliable you are),

What does a speech act do?

Say you assert *s*.

I update:

the *salience* of *s* (goes up)

my *confidence* in *s* (depending on how reliable you are),

my measure of your *reliability*

(depending on my confidence in *s* and its *coherence*)

Coherence

For any participant,
the ***coherence*** of a statement is the
agreement- & salience-weighted
average confidence
for all *connected* statements.

Discursive Priorities

Speech acts are ordered (probabilistically) on a list.

Order depends on the substantive statements in an act.

Discursive Priorities

Each participant decides what to say based on the ***germaneness, potential impact, and urgency*** of a speech act.

Discursive Priorities

Germaneness depends on the number of substantive connections between the statements in a speech act and recently uttered speech acts.

Discursive Priorities

Potential impact depends on the *coherence* of the statements in a speech act and a participant's *conjecture* about how that act might change coherence.

Discursive Priorities

Urgency is just a Cobb-Douglas function of the two.

Discursive Priorities

Some speech acts trigger automatic responses.

(challenges, queries)

This is a stochastic process model,
so we're interested in several aspects of
how and when consensus emerges.

How much overlap do you need for consensus?

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Conjectures:

Complete overlap leads to consensus almost surely.

Complete non-overlap leads to consensus almost never.

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Conjectures:

Complete overlap leads to consensus almost surely.

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What happens in the middle is a mystery,
but expect some phase transitions.

What else can you do with this?

Kant's noumenal realm

Posit the truth, see if its discoverable.

(We're still working on it.)