Expressivism and the Explanatory Goals of Semantics

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1. Aims of semantics: **communication**, **consequence** and **composition**

2. Expressivism and these aims of semantic theory

3. Two forms of **expressivism**

    - Pragmatic thesis about communication (Yalcin)
    - Semantic thesis about all of it (Starr?)

4. Some propaganda

1 What Does Semantics Explain?

- What are linguistic meanings good for?

    1. A theory of linguistic communication (Saussure, Lewis)
        - X sends a signal σ to Y
        - How does Y appropriately respond to this signal?
            - Y exploits knowledge/dispositions specific to σ
              (Since σ is linguistic, this can't be general world-knowledge)
            - Y integrates this with all-purpose reasoning mechanism
              and information specific to this signaling event

    2. A theory of consequence (Frege, Tarski)
        - ψ follows from ϕ, but why?
            - Accepting ϕ commits one to accepting ψ; why?
            - Something about the 'nature' of these commitments

    3. A theory of composition (Frege, Davidson, Montague)
        - Speakers can interpret infinitely many sentences. How do
          they pull this off with limited memory?
            - interpret = grasp the meaning
            - Sentence meaning is determined from the meanings of
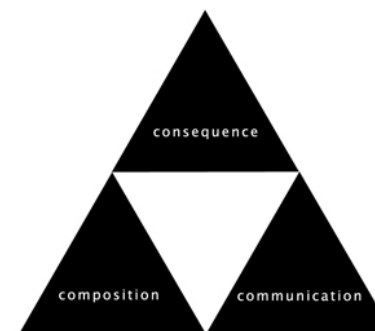   its parts and syntactic structure

Figure 1: The Semantic Pyramid

- Communication

    - Starting point: X sends a signal σ to Y, and Y needs to appropriately respond to σ.
    - Lewis-Stalnaker end point:
        - There's a mutually grasped rule associating σ with a proposition $[\![\sigma]\!]$ (set of worlds)
        - What's presupposed is also modeled with a proposition: c
            - *Presupposed*: mutually accepted for the purposes of the exchange
        - X's signal induces a change, $c' = c \cap [\![\sigma]\!]$
        - Y selects action with knowledge that presuppositions are c'
        - **Upshot**: 'uptake' is determined by $[\![\phi]\!]$ and c

- Consequence

    - Starting point: accepting ϕ commits one to accepting ψ because of what ϕ and ψ mean
    - PWS end point: $\phi \vDash \psi \iff [\![\phi]\!] \subseteq [\![\psi]\!]$ (for all $[\![\cdot]\!]$)
        - To accept ϕ is to commit oneself to ϕ being true: $w_@ \in [\![\phi]\!]$
        - Thus: if $\phi \vDash \psi$ then accepting ϕ commits one to accepting ψ

- Composition

    - Starting point: $[\![\phi]\!]$ is determined by each $[\![\phi_i]\!]$ and ϕ's syntactic structure, for the i constituents of ϕ
    - End point: $[\![\phi]\!]$ is a function of each $[\![\phi_i]\!]$ and ϕ's syn. structure
        - $[\![\mathsf{Ran(jan)}]\!] = \{w \mid [\![\mathsf{jan}]\!](w) \in [\![\mathsf{Ran}]\!](w)\}$, $[\![\phi \wedge \psi]\!] = [\![\phi]\!] \cap [\![\psi]\!]$

- How do the three relate? Two important interconnections...

A. Egan's Rutgers Seminar   1

A. Egan's Rutgers Seminar   2

1. Need for systematic, mechanistic explanations relates composition to consequence and communication
   - Consequence:
     - How would our theory of consequence suffer without a compositional semantics?
     - First: unless $[\![\phi[\![$ depended on each $[\![\phi_i]\!]$, there would be no non-trivial consequences
     - Second: $\phi(\beta) \vDash \psi$ if $[\![\alpha]\!] = [\![\beta]\!]$ (for all $[\![\cdot]\!]$) and $\phi(\alpha) \vDash \psi$ $\phi(\alpha)$ means α occurs in ϕ
       - ▷ Think $[\![$but$]\!]$ and $[\![$and$]\!]$
     - *Mechanistic*: $[\![\cdot]\!]$ characterizes the behavior of each symbol so completely that if $[\![\alpha]\!] = [\![\beta]\!]$ then they are 'interchangeable parts'
   - Communication
     - We can not only interpret indefinitely many sentences, we can communicate with them
     - Again, a mechanistic constraint seems plausible: $[\![\phi(\alpha)]\!] = [\![\phi(\beta)]\!]$ if $[\![\alpha]\!] = [\![\beta]\!]$
2. An evaluative attitude: **acceptance**! Relatedly, presupposition.
   - Ambient question: why does communication need presupposition instead of acceptance?

- What's truth got to do with it?

  - Note truth only came up with consequence
  - There: to accept ϕ is to commit to its truth (Plausible?)

2 Expressivism and Semantic Explanation

- Frege's point (Frege 1963):

  - The meaning of logical connectives is exhausted by their role in 'the laws of truth'
  - Translation: the meaning of ¬ is exhausted by the fact that it makes truths into falsehoods and falsehoods into truths
  - $[\![\neg]\!]$ must take a proposition (truth-conditions) and return a proposition (truth-conditions)
  - $[\![\neg]\!]$ cannot operate on anything else (speech acts, emotive content, etc.)

- Geach's point (Geach 1965):

  - Since moral terms embed under logical connectives, they cannot have an emotivist/expressivist semantics

- Is expressivist *semantics* incoherent?
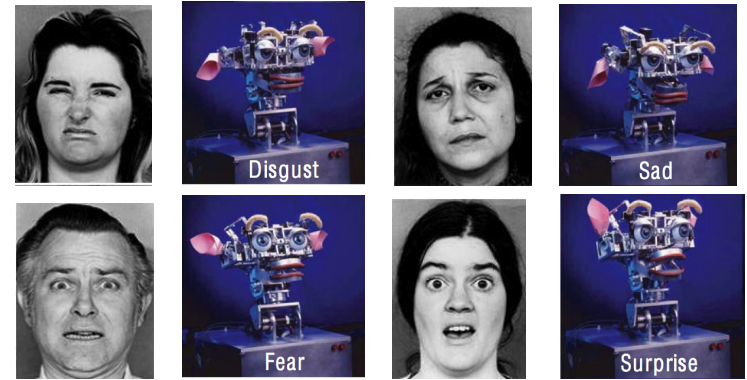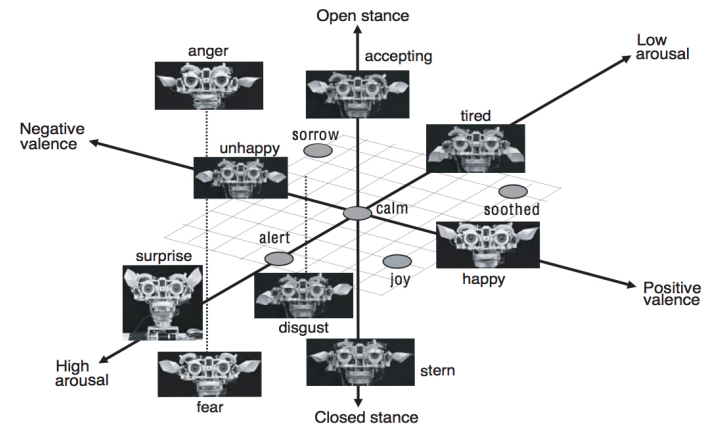
- Meet Kismet (Breazeal & Brooks 2005)

Disgust   Sad   Fear   Surprise

Table 10.1. A Possible Mapping of Facial Movements to Affective Dimensions Proposed by Smith & Scott (1997)

Meaning	Eyebrow Frown	Raise Eyebrows	Raise Upper Eyelid	Raise Lower Eyelid	Raise Lip Corners	Open Mouth	Tighten Mouth	Raise Chin
Pleasantness	↓				↑	↑	↓	↓
Goal obstacle/discrepancy	↑							
Anticipated effort	↑							
Attentional activity		↑	↑					
Certainty		↓	↓	↑		↑		
Novelty		↑	↑					
Personal agency/control		↓	↓			↓		

Up arrow indicates that the facial action is hypothesized to increase with increasing levels of the affective meaning dimension. Down arrow indicates that the facial action increases as the affective meaning dimension decreases. For instance, the lip corners turn upward as pleasantness increases and downward with increasing unpleasantness.

3 Two Forms of Expressivism

Figure 2: Promiscuous Modals in the Wild

- Yalcin (2007, 2011, 2012) defends expressivism about epistemic modals

  1. This form of expressivism is *pragmatic*
  2. The semantics is truth-conditional
  3. It's the *uptake* that's expressivist: it is a speech act whose characteristic effect on the common ground is not (merely) to add some new representational content, but rather to influence its 'structural character' (Yalcin 2012: 144)
  4. 2 and 3 require decoupling communication and composition:

     ...[T]here has been a tendency – not just in the expressivist literature, but in the philosophy of language literature at large – to conflate (i) the compositional semantic contribution of a clause with (ii) the sort of thing the sentence characteristically adds to the common ground of a conversation. But it is a mistake to conflate these notions. They correspond to very different theoretical roles. (Yalcin 2012)

- **Critical point**: this decoupling leaves basic questions unanswered

  ○ It is not clear how speech acts involving epistemic modals change the common ground
    ▸ Especially ones like *Andy is in the bar and he might be drinking a beer*; *Andy has a beer or Josh might have some whiskey*; *Don't through rocks because people may be below*
  ○ Most natural amendment to Yalcin's story eliminates the expressivism, I think; though view is still *interesting*

- **Positive point**: worries can be addressed, and expressivism regained, with a dynamic semantics

  ○ This view leaves the 'Semantic Pyramid' intact:

  ▸ It does not conflate compositional semantic meaning with the object added to the common ground
  ▸ Because meanings operate on the common ground, often in ways that can't even be construed as 'adding a content'
○ This has other positive consequences for understanding consequence and the meaning of *if*-clauses

3.1 Pragmatic Expressivism

- Epistemic contradictions don't embed (Yalcin 2011, 2007)

  (1) # It's raining and it might not be raining

- Why? A descriptivist-friendly explanation:

  ○ Well, (2) is also bad

    (2) It's raining and I don't know it's raining

  ○ It is Moore-paradoxical: it asserts something whose truth undermines the epistemic grounds for the utterance itself
  ○ But on descriptivist views (1) says, basically, (2)
    ▸ So let's just give the same (pragmatic) explanation!

- Yalcin: embedded, *might* version remains bad, but *know* version doesn't

  (3) a. # Suppose it's raining and it might not be raining
      b. Suppose it's raining and I don't know that it's raining
  (4) a. # If it's raining and it might not be raining...
      b. If it's raining and I don't know that it's raining...

- The pragmatic analysis of (1) does not extend to (3) or (4)

  ○ It required both conjuncts to be *asserted*

- Yalcin uses an **information parameter** s (a set of worlds):

  Yalcin Semantics $[\![\mathsf{Might}(\phi)]\!]_{k,w,s} = 1 \iff \exists w' \in s : [\![\phi]\!]_{k,w',s} = 1$

  ○ Key: w is not mentioned on the right-hand side

- What does this semantics say about epistemic contradictions:
  $[\![\phi \wedge \mathsf{Might}(\neg\phi)]\!]_{k,w,s} = 1 \iff [\![\phi]\!]_{k,w,s} = 1 \ \& \ \exists w' \in s : [\![\phi]\!]_{k,w',s} = 0$

  ○ There are k, w, s for which the epistemic contradiction is true, so it is not a contradiction
  ○ But, there is no s in which the epistemic contradiction is *accepted* (Yalcin 2007: 1004)

Acceptance ϕ is accepted in s iff $\forall w \in s : [\![\phi]\!]_{k,w,s} = 1$

- ▸ $\mathsf{p} \wedge \mathsf{Might}(\neg\mathsf{p})$ requires $\forall w \in s : [\![\mathsf{p} \wedge \mathsf{Might}(\neg\mathsf{p})]\!]_{k,w,s} = 1$.
  - ▷ The first conjunct requires: $\forall w \in s : [\![\mathsf{p}]\!]_{k,w,s} = 1$
  - ▷ The second: $\exists w' \in s : [\![\mathsf{p}]\!]_{k,w',s} = 0$
  - ▷ These are inconsistent demands on s!
- ○ So epistemic contradictions are unacceptable!

- Yalcin (2007: 998): indicative conditional semantics to predict (4)

  Indicative Conditional $[\![\phi \to \psi]\!]_{k,w,s} = 1 \iff \forall w' \in s_\phi : [\![\psi]\!]_{k,w',s_\phi} = 1$

  - ○ $s_\phi := \mathrm{MAX}\, s' \subseteq s : (s' \neq \varnothing\ \&\ \forall w' \in s' : [\![\phi]\!]_{k,w',s'} = 1)$

- On this view, indicative conditionals, like epistemic modals, constrain the information parameter only, and not the world parameter

- The basic idea is to shift to an information state where ϕ has been accepted and make sure that ψ has been accepted.

  - ○ But when ϕ is $\mathsf{p} \wedge \mathsf{Might}(\neg\mathsf{p})$, there will be no such state

- So the truth of the indicative conditional could not be defined

  - ○ Hence epistemic contradictions are infelicitious in antecedents of indicatives

- The semantics for belief/supposition works similarly (Yalcin 2007: 995)

  Belief $[\![\mathsf{Bel}_\mathsf{A}(\phi)]\!]_{k,w,s} = 1 \iff \forall w' \in s_A^w : [\![\phi]\!]_{k,w',s_A^w} = 1$

  - ○ s_A^w is the set of worlds compatible with what A believes in w

- It says that ϕ has been accepted in A's state of information in w

- False for epistemic contradictions: no info state accepts them!

- What about classical **consequence**? Objection (Yalcin 2007: 1011):

  - ○ Intuitively $\neg \diamond \phi$ follows from $\neg\phi$
  - ○ But not classically
  - ○ "Suppose the following. (1) Nobody – including ourselves – knows whether or not there is lead on Pluto, and indeed nobody is even close to having any evidence on the question of whether there is lead on Pluto. (2) As a matter of fact, there is no lead on Pluto. Now, on the basis of the information provided by these two premises, is the following sentence true or false?

    (5) There might be lead on Pluto

    There is a strong pull to answer 'false'." (Yalcin 2007: 1011)

- This suggests that the notion of consequence appropriate to epistemic modals is *acceptance*, not truth:

  - ○ **Informational Consequence**
    $\phi_1, \ldots, \phi_n \vDash \psi \iff \forall \mathcal{M}, k, s: \psi$ is accepted in s if $\phi_1, \ldots, \phi_n$ are
    - ▸ The key: you evaluate ψ against a state that accepts premises

- This predicts the inference from $\neg\phi$ to $\neg \diamond \phi$

  - ○ Once you've accepted $\neg\phi$ you've ruled out ϕ-worlds, so there does not exist a world that makes ϕ true.
  - ○ That's just way $\neg \diamond \phi$ says

- Yalcin sharply distinguishes two kinds of truth

  - ○ The truth of a content (real truth!)
  - ○ The semantic value 1 used to distinguish a space of points (the other truth)

- It is this distinction on which his expressivism hangs

  - ○ This move strikes me as a cost
    - ▸ A bad semantic value...
  - ○ But let's grant it and ask: *what about content?*
  - ○ We need that for communication, right?

- How does **communication** with epistemic modals work?

  - ○ "Relative to a context, an epistemic possibility claim determines a condition, or property, on states of information – on states of mind. It is the satisfaction of this property that the speaker aims to coordinate his listeners on. The speaker thereby expresses a feature of his state of mind, and does so without describing himself, or the world." (Yalcin 2011: 329)

- We're only giving a semantics in terms of semantic-value-1-isms

  - ○ How are they put to use to convey something?
  - ○ The only way I know how to think of this from a static perspective is taking a content and integrating it into another

- Is the content of an epistemic modal claim the set of states s compatible with it? $\{s \mid [\![\diamond\phi]\!]_{k,s,w} = 1\}$?

  - ○ **Problem 1**: how do you update a Stalnakerian context c?
  - ○ **Solution**: you don't. Use it to change a more richly structured context, for example a partition of c or a division of c into relevant alternatives (Beaver 2001; Yalcin 2011; Willer 2013). Call this $C = \{c_0, \ldots, c_n\}$, where $c = \bigcup C$.

- ▸ Now you can update by intersection, keeping just those alternatives with a ϕ-world!
- ○ **Problem 2**: what about the content of $\Diamond A \wedge B$ or $\Diamond A \vee B$?
- ○ **Solution**: define contents as $\{\langle w, s \rangle \mid [\![\phi]\!]_{k,s,w} = 1\}$
  - ▸ You could actually now give up the whole semantic-value-ism
  - ▸ Assign contents of this kind, define $\wedge$ as $\cap$, etc.
  - ▸ Semantic value-ism begins to look like aether: truth in a world is just $\langle w, s \rangle \in [\![\phi]\!]$
- ○ **Problem 3**: how do you update C with contents of this kind?
- ○ **Solution**: it's not so hard
  - ▸ $C + [\![\phi]\!] = \{s \mid \langle w, s \rangle \in [\![\phi]\!] \ \& \ \exists c_i \in C : s = c_i \cap W_\phi\}$
    - ▷ Where $W_\phi = \{w \mid \langle w, s \rangle \in [\![\phi]\!]\}$
  - ▸ Keep ϕ states, but only the ones that arise from states/alternatives in C by incorporating any constraints on worlds carried by ϕ
- ○ **Problem 4**: if expressivism means 'doesn't eliminate worlds' then this isn't an expressivist pragmatics. Suppose C contains an alternative c which does not contain a ϕ-world and happens to contain the only ψ-world. Then accepting $\Diamond\phi$ will eliminate the ψ-world. Maybe this is a technical issue; doesn't seem to be.

  > "But unlike the factualist, [the expressivist] rejects the view that the sentences of the relevant discourse are apt for truth in a richer sense, the sense of truth which applies to factual information content – the kind of content whose main business is to rule out ways things might be." (Yalcin 2011: 330)

- ○ **Problem 5**: what about the question *Might it be raining?* It can't partition worlds in which the modal claim is true from worlds where its false.
  - ▸ A hyper partition bewteen the alternatives which contain a rain world and those that don't? Is this compositional?
  - ▸ To be fair, can't do this on a dynamic analysis...
- • Where do we stand?
  - ○ The semantic pyramid is in ruin
  - ○ Expressivism seems illusive

3.2 Dynamic Expressivism
- • Propositional logic (s is a set of worlds, worlds are valuations):

Definition 1 (Update Semantics)

(1)	$s[\mathsf{p}]$	$=$	$\{w \in s \mid w(\mathsf{p}) = 1\}$	(2)	$s[\neg\phi]$	$= \ s - s[\phi]$
(3)	$s[\phi \wedge \psi]$	$=$	$(s[\phi])[\psi]$	(4)	$s[\phi \vee \psi]$	$= \ s[\phi] \cup s[\psi]$

- • Semantics does not directly assign propositions
  - ○ My spin: their role in information processing
- • Truth is not central here
- • Central evaluative concept is **support**; truth a special case (Starr 2010)

Definition 2 (Support, Truth in w)
(1) Support $s \vDash \phi \Leftrightarrow s[\phi] = c$ (2) Truth in w $w \vDash \phi \Leftrightarrow \{w\}[\phi] = \{w\}$
  - ○ Support is essentially 'acceptance' from previous section
  - ○ von Fintel & Gillies (2007: 50) don't distinguish the two
  - ○ "The universe... would only be one fact and one great truth for whoever knew how to embrace it from a single point of view." (d'Alembert 1995: 29) [1751]
  - ○ Correspondence with the truth amounts to acceptance once uncertainty has been resolved
  - ○ So it just isn't *useful* to talk about the truth conditions of claims which turn crucially on uncertainty for their use
- • Here's how support is the key semantic notion:

Definition 3 (Dynamic Consequence)
$\phi_1, \ldots, \phi_n \vDash \psi \Leftrightarrow \forall c : c[\phi_1] \cdots [\phi_n] \vDash \psi$

Definition 4 (Classical Consequence)
$\phi_1, \ldots, \phi_n \vDash \psi \Leftrightarrow \forall w : \{w\}[\phi_1] \cdots [\phi_n] \vDash \psi$

- • One can define propositions, if one wants to:

Definition 5 (Propositional Content) $[\![\phi]\!] = \{w \mid w \vDash \phi\}$

- • So far we could just have been talking about propositions
  - ○ Until you add vocabulary which exploits uncertainty...
- • Example: Veltman's (1996) semantics of *might*

Definition 6 (Dynamic Epistemic Modals)
(1) $c[\Diamond\phi] = \{w \in c \mid c[\phi] \neq \varnothing\}$ (2) $c[\Box\phi] = \{w \in c \mid c \vDash \phi\}$
(3) $c[(\text{if } \phi) \ \psi] = \{w \in c \mid c[\phi] \vDash \psi\}$

- This theory doesn't explain:
  - How modals are informative
    - Various options (Beaver 2001; Yalcin 2011; Willer 2013; von Fintel & Gillies 2011)
    - Partial Idea: move from a probability space $\langle W, F, P \rangle$ whose field does not contain $[\![\phi]\!]$ to one that does and assigns a non-zero probability to $[\![\phi]\!]$
  - What c is!
    - Again, various options (Willer 2013; Starr to appear a)
- The dynamic theory captures all of Yalcin's data, including $\neg\phi \vDash \neg\Diamond\phi$
  - Epistemic contradictions:
    - $s[\mathsf{p} \wedge \Diamond\neg\mathsf{p}] = s[\mathsf{p}][\Diamond\neg\mathsf{p}] = \varnothing$
      - After eliminating the $\neg\mathsf{p}$-worlds the $\Diamond\neg\mathsf{p}$ test will fail!
    - This sentence is **inconsistent**: it turns any state into $\varnothing$.
- But it offers a unified perspective on communication, consequence and composition
  - Composition is particularly interesting
  - Speculation: to explicitly formulate the meaning of *if* on theories where it 'shifts' a context *if* will be assigned a dynamic meaning: *if* ϕ not only shifts the context, in order to say how exactly it will require antecedent and context to have ccp's as meanings
- Is it expressivism?
  - Yes, because truth is not the central explanatory concept
  - We get the truth/support distinction rather than the slippery semantic-value 1/true-content distinction
  - This possibility was foreshadowed in the set up
    - Acceptance really seemed to be all that was needed
  - Intuitive distinction: the meaning relation is not a generalization of the reference relation
- Does the expressivism help for deontic discourse?
  - Semantically, *yes*
  - Philosophically, *can I have a grant to find out?*

4 Propaganda and Speculation

- A vision (w/a Dutch spirit animal)
- Skills to pay the bills
  - (Most) Traditional arguments for dynamic semantics are about sentence-level context change
    - Susceptible to competing pragmatic explanations
    - Exception: donkey anaphora (binding beyond syntactic scope)
      - Susceptible to competing semantic explanations
  - But there are arguments that can be made about sub-sentential context change
    - The shifty meaning of *if* (see above)
    - The interrogative meaning of *if* and conditionals w/multiple *if*-antecedents, *if A and if B then C* (Starr to appear c)
    - Composition of subjunctive antecedents (Starr to appear b)
    - Imperatives and the ways they embed (Starr 2012)
    - Variable-binding (Starr 2013)
  - Harder to resist
    - How could sub-sentential context change be pragmatic?
    - How could meanings that shift contexts not be context-change potentials?
  - There are other arguments which appeal to a dynamic conception of consequence
    - Incremental information preservation
    - Incremental permission preservation
- Aside: why *set-theoretic* doodads (STDs)?
  - What are set-theoretic doodads?
    - Things in the mind-independent world and abstractions thereof
  - Why not representational doodads?
    - The language of thought? Distributed representations?
  - Why not physical, neural doodads?
    - Particular physical processes in actual brain structures?
  - STDs allow you to have your Stalnaker (1984) and eat it too...
    - Existing explanations should be independent of talk about internal representation
      - Most data in current semantics literature is not rich enough to distinguish different representational hypotheses

▷ Exception: Pietroski *et. al.* on *most*

▶ But we needn't assume that internal representation has nothing to do with semantics

○ Will a complete representational theory eliminate STDs?

▶ Worries about consequence and incompleteness

▶ Regularities involving word-thing correlations

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