Truthmaking, Content and Same-Saying

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Main thesis: *Propositions are sets of states of affairs. Truthmaking is membership. (Or: they pairs of sets of states of affairs.) This best accounts for the nature of a proposition, and it gives good* same-saying *predictions.*

1 Roles for Propositions

- Semantic contents ✓
- Primary bearers of truth & falsity ✓
- Primary bearers of contingency & necessity ??
- Objects of attitudes × (Jago 2014)
- Denotations of *that*-clauses ×

2 Theories of Propositions

- Structured entities: Russellian & Fregean
- Pleonasitic and Primitive entities
- Sets of possible worlds
- *The States-of-Affairs account*

Single Propositions

- *Single propositions* are *truthmaker conditions*
- Sets of possible states of affairs
- Refinement of the possible worlds notion
- $\langle A \rangle$ is true iff a member of A obtains/actually exists
- $\langle A \rangle$ is true at w iff w overlaps a member of $\langle A \rangle$

Problem: what about $\langle A \wedge \neg A \rangle$, $\langle 1+1=3 \rangle$, $\langle a \neq a \rangle$, ...?

Double Propositions

- *Truthmaker* + *falsemaker conditions*
- Pairs of sets of possible states if affairs, (T, F)
- E.g. a is a falsemaker for $a \neq a$, so $\langle a \neq a \rangle = (\varnothing, \{a\})$

3 The Nature of Propositions

P1. *Bearing a truth-value* is of the nature of a proposition

P2. Propositions are set-theoretic entities

P3. The nature of a set is explained wholly by its membership

C. **Therefore, a proposition's bearing a truth-value must be explained wholly by its membership**

- I'm using 'nature' and 'essence' interchangeably
- P2 may be inessential
- Let's see how theories of propositions fare by **C** ...

4 Structured Propositions

- Their nature is to contain particulars & properties (or senses)
- Structure is part of their nature
- But *bearing a truth-value* is a contingent property, conventionally associated with such structures (King 1995)
- So structural account can't explain nature of propositions (Jago 2015)
- *Q:* what if structures aren't sets? (I don't think it matters)

5 Unstructured Propositions

- Sets of p.w. have *truth-at-a-world* in their nature
- They have *truth simpliciter* in their nature if there's a unique concrete actual world
- Not clear they explain *falsity*: is non-membership part of a set's nature?
- The states view does better: truthmakers and falsemakers are parts of their nature
- Truth or falsity simpliciter is of their nature if only actual states are concrete

6 Identity Conditions

⇒ *Exact truthmaker equivalence* gives identity conditions on logically complex propositions

($\wedge$) α is a truthmaker for $A \wedge B$ if and only if, for some β, γ where β truthmakes A and γ truthmakes B, $\alpha = \beta \sqcup \gamma$. (Compare van Fraassen 1969)

($\vee$) α is a truthmaker for $A \vee B$ if and only if either α truthmakes A, or α truthmakes B, or else if $\alpha = \beta \sqcup \gamma$ for some truthmakers β for A and γ for B.

Exact Truthmaking Semantics

From Fine and Jago 2015, Fine forthcoming:

$$
\begin{array}{rll}
\alpha \Vdash p & \text{iff} & \alpha \in tp \\
\alpha \dashv\vert p & \text{iff} & \alpha \in fp \\
\alpha \Vdash \neg A & \text{iff} & \alpha \dashv\vert A \\
\alpha \dashv\vert \neg A & \text{iff} & \alpha \Vdash A \\
\alpha \Vdash A \wedge B & \text{iff} & \exists\beta\gamma(\alpha = \beta \sqcup \gamma \;\&\; \beta \Vdash A \;\&\; \gamma \Vdash B) \\
\alpha \dashv\vert A \wedge B & \text{iff} & \alpha \dashv\vert A \text{ or } \alpha \dashv\vert B \text{ or} \\
& & \quad \exists\beta\gamma(\alpha = \beta \sqcup \gamma \;\&\; \beta \dashv\vert A \;\&\; \gamma \dashv\vert B) \\
\alpha \Vdash A \vee B & \text{iff} & \alpha \Vdash A \text{ or } \alpha \Vdash B \text{ or} \\
& & \quad \exists\beta\gamma(\alpha = \beta \sqcup \gamma \;\&\; \beta \Vdash A \;\&\; \gamma \Vdash B) \\
\alpha \dashv\vert A \vee B & \text{iff} & \exists\beta\gamma(\alpha = \beta \sqcup \gamma \;\&\; \beta \dashv\vert A \;\&\; \gamma \dashv\vert B)
\end{array}
$$

Exact Truthmaking Entailment: $\Gamma \vDash A$ iff, for any model M and any state α of M: $\alpha \Vdash A$ whenever $\alpha \Vdash B$ for each $B \in \Gamma$.

Some Entailments & Equivalences

$$
\begin{array}{rcl}
A \wedge B \dashv\vDash B \wedge A & & A \wedge (B \wedge C) \dashv\vDash (A \wedge B) \wedge C \\
A \vee B \dashv\vDash B \vee A & & A \vee (B \vee C) \dashv\vDash (A \vee B) \vee C \\
A, B \vDash A \wedge B & & A \wedge (B \vee C) \dashv\vDash (A \wedge B) \vee (A \wedge C) \\
A \vDash A \vee B & & A \vee (B \wedge C) \vDash (A \vee B) \wedge (A \vee C) \\
\neg\neg A \dashv\vDash A & & \neg(A \wedge B) \dashv\vDash \neg A \vee \neg B \\
& & \neg(A \vee B) \dashv\vDash \neg A \wedge \neg B
\end{array}
$$

7 Same Saying

ABOUTNESS CRITERION: A says the same as B only if A and B are about the same thing(s).

TRUTHMAKING CRITERION: A says the same as B iff $\langle A \rangle$ and $\langle B \rangle$ share their truthmakers and falsemakers.

SIMPLE ACCOUNT: A says the same as B iff $\langle A \rangle = \langle B \rangle$

- Same-saying is more fine-grained than sets of p.w., but more coarse-grained than structured propositions.
- TRUTHMAKING CRITERION + states-of-affairs account supports the SIMPLE ACCOUNT
- Structural account can take same-sayings to be EQ-classes of tuples (based on TM-equivalence?)
- P.w. account can take same-sayings to be pairs of p.w. propositions with truthmaker-falsemaker pairs.
- Either way, the states-of-affairs account provides a simplification of the view.

What about aboutness?

We might take proposition (T, F) to be about:

(a) Its possible truthmakers and its falsemakers: $T \cup F$

(b) All parts of all its possible truthmakers and its falsemakers: $\{\alpha \mid \alpha \sqsubseteq \bigsqcup(T \cup F)\}$

(c) The atomic parts of all its possible truthmakers and falsemakers: $\{\alpha \mid \alpha \sqsubseteq \bigsqcup(T \cup F) \;\&\; \alpha \text{ is atomic}\}$

(d) The sum of all its possible truthmakers and falsemakers: $\bigsqcup(T \cup F)$

$$a, b, c, d \quad \Rightarrow \quad ab(A) = ab(\neg A)$$

$$c, d \quad \Rightarrow \quad ab(A \wedge B) = ab(A \vee B)$$

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