Values of Event Variables?

Paul M. Pietroski
University of Maryland
Outline

• Gesture at some initial puzzles for truth conditional semantics

• Introduce some other puzzles concerning “action reports,” which were supposed to provide support for truth conditional semantics

  For example...suppose two chipmunks chased each other.  
  Alvin joyfully chased Theodore, who joylessly chased Alvin.  
  
  *There was an event, e1, of Alvin chasing Theodore joyfully.*  
  *There was an event, e2, of Theodore chasing Alvin joylessly.*  
  Was e1 (identical to) e2?
Outline

• Gesture at some initial puzzles for truth conditional semantics

• Introduce some other puzzles concerning “action reports,” which were supposed to provide support for truth conditional semantics

   Was the event of Alvin chasing Theodore joyfully the event of Theodore chasing Alvin joylessly?

• With regard to the alleged values of these event variables...
  – Argue against identity responses to the puzzles
  – Argue against non-identity responses to the puzzles
  – Conclude: action reports tell against truth conditional semantics
Outline

• Gesture at some initial puzzles for truth conditional semantics

(1) for each natural language $L$, there is a theory of truth that is the core of a correct theory of meaning for $L$

(2) the declarative sentences of a natural language have compositionally determined truth conditions

$$\text{True(‘Jupiter spins.’)} \equiv \text{Spins(Jupiter)}$$

(3) in a natural language, the words have semantic properties that determine truth conditions for the sentences, given the rules that govern sentence formation

$$\text{Denotes(‘Jupiter’, Jupiter)} \quad \forall x[\text{Satisfies}(x, ‘\text{spins’}) \equiv \text{Spins}(x)]$$
(P1) ‘My favorite sentence is not true.’ is true if and only if my favorite sentence is not true.

(P2) ‘My favorite sentence is not true.’ is my favorite sentence.

(C) My favorite sentence is true if and only if my favorite sentence is not true.

Larry is true if and only if P.
Larry is the F.
The F is true if and only if P.
(P1) ‘My favorite sentence is not true.’ is true if and only if my favorite sentence is not true.

(P2) ‘My favorite sentence is not true.’ is my favorite sentence.

(C) My favorite sentence is true if and only if my favorite sentence is not true.

So maybe we shouldn’t adopt hypotheses that imply (P1).

And if my favorite sentence doesn’t have a truth condition, then maybe other sentences don’t have truth conditions.

Snow is white.
‘Snow is white.’ is true.
‘Snow is white.’ is true if and only if snow is white.
James Atlas on Global Warming
(NY Times: Nov 25, 2012)

"a good chance that New York City will sink beneath the sea"

*but*...

"...the city could move to another island, the way Torcello was moved to Venice, stone by stone, after the lagoon turned into a swamp and its citizens succumbed to a plague of malaria. The city managed to survive, if not where it had begun."

Do the names ‘Torcello’ and ‘Venice’ have denotations?
Torcello was moved to Venice.
Venice is a nice place.

some thing is such that:
‘Venice’ denotes it;
it is a nice place;
and the denotation of
‘Torcello’ was moved to it

Torcello was moved to a nice place. ☺
Torcello was moved to Venice. Venice is a nice place. Venice will be moved. Torcello was moved to a nice place that will be moved.

France is hexagonal. France is a republic. There is a hexagonal republic. \( \exists x [H(x) \& R(x)] \)

So maybe we shouldn’t assume that

‘Venice’ denotes Venice \((i.e., \) Venice is a thing that ‘Venice’ denotes) ‘Venice’ is true of an entity \(e\) if and only if \(e\) is (identical with) Venice ‘Venice is a nice place.’ is true if and only if Venice is a nice place if Venice is a city, then ‘Venice’ has a denotation
But what about “natural kind terms”?  

Water is H₂O.  

The water from that well has a high mineral content. 😞  
The H₂O from that well has a high mineral content.

Words that can (sometimes) be used to talk about “natural kinds” do not provide support for truth conditional semantics.  

They provide further grief for the idea that expressions of a natural language have truth/denotation/satisfaction conditions.

Water is H₂O.  

‘water’ is true of e if and only if e is (a sample of) H₂O. 😞
‘water’ is true of e if and only if e is 99.5% (or more) H₂O

Club Soda: 99.9  ndb.nal.usda.gov/ndb/foods/show/4240
Diet soda, not cola: 99.8  ndb.nal.usda.gov/ndb/foods/show/4253
Tea: 99.7  ndb.nal.usda.gov/ndb/foods/show/4337
Diet Cola: 99.54  ndb.nal.usda.gov/ndb/foods/show/4361
stuff from my well: < 99.4 “Quality Water Analysis” from National Testing Laboratories, Ltd. deferring to experts: no arsenic, no fluoride

Coffee: 99.39  ndb.nal.usda.gov/ndb/foods/show/4287
Espresso: 97.8  ndb.nal.usda.gov/ndb/foods/show/4288
Ocean Water: 96.5 average salinity
Michelob Ultra: 95.4  ndb.nal.usda.gov/ndb/foods/show/4159
Bud Light: 95.0  ndb.nal.usda.gov/ndb/foods/show/4156
Distilled vinegar: 94.78  ndb.nal.usda.gov/ndb/foods/show/283
Suppose cup-1 is filled from the tap. It is a cup of water, but if a tea bag is dipped into it, that is no longer the case. It is now a cup of tea, something different. Suppose cup-2 is filled from a tap connected to a reservoir in which tea has been dumped (say, as a new kind of purifier). What is in cup-2 is water, not tea, even if a chemist could not distinguish it from the present contents of cup-1....

In cup-2, the tea is an “impurity” in Putnam’s sense, in cup-1, it is not, and we do not have water at all (except in the sense that milk is mostly water, or a person for that matter). If cup-3 contains pure H2O into which a tea bag has been dipped, it is tea, not water, though it could have a higher concentration of H2O molecules than what comes from the tap or is drawn from a river.
Chomsky, “Language and Nature” (Mind 1995)

Quite typically, words offer conflicting perspectives....

We have no problem understanding a report in the daily press about the unfortunate town of Chelsea, which is “preparing to move” ... with some residents opposed because “by moving the town, it will take the spirit out of it”, while others counter that “unless Chelsea moves, floods will eventually kill it”. There is a city called both “Jerusalem” and “al-Quds”, much as London is called “London” and “Londres”....The government that claims it as its capital city has been considering plans to move al-Quds, while leaving Jerusalem in place....The discussion would pose puzzles...if, failing to observe some of Wittgenstein's good advice, we were to suppose that words like “London” or “Jerusalem” refer to things in the world in some public language, and were to try to sharpen meanings and ideas for conditions under which the presuppositions of normal use do not hold.
A general pattern, I claim (see *Conjoining Meanings*):

As a proposal about languages that human children naturally acquire, Truth Conditional Semantics doesn’t look good if you focus on...

- truth and sentences (Liar Puzzles)
- denotation and names (Venice Puzzles)
- satisfaction and predicates (Water Puzzles)

It looks worse if you attend to various kinds of context sensitivity.

- There is milk in the fridge. (WAT Puzzles)
- The bald guys said so. (More Puzzles)
Gesture at some initial puzzles for truth conditional semantics

• Introduce some other puzzles concerning “action reports,” which were supposed to provide support for truth conditional semantics focusing on action reports actually reveals similar difficulties... “words offer conflicting perspectives.”

Perhaps “every sentence is a research program.” But if we (still) can’t point to any “ideal cases,” that raises an awkward question.

Are there any confirming instances of the hypothesis that natural sentences have compositionally determined truth conditions?
Event Variables

(1) Alvin chased Theodore.

\textbf{Chased(Alvin, Theodore)}

(1a) Alvin chased Theodore joyfully.
(1b) Alvin chased Theodore around a tree.
(1c) Alvin chased Theodore joyfully around a tree.
(1d) Alvin chased Theodore around a tree joyfully.

(1c) \iff (1d)

(1a) \iff (1b)

(1)
Event Variables

(1) Alvin chased Theodore.

\[ \exists e [Chased(e, Alvin, Theodore)] \]

(1a) Alvin chased Theodore joyfully.

(1b) Alvin chased Theodore around a tree.

(1c) Alvin chased Theodore joyfully around a tree.

(1d) Alvin chased Theodore around a tree joyfully.

(1c) \iff (1d)

(1a) \iff (1b)

(1)
Event Variables

Alvin chased Theodore.
∃e[Chased(e, Alvin, Theodore)]

Alvin chased Theodore joyfully.
∃e[Chased(e, Alvin, Theodore) & Joyful(e)]

Alvin chased Theodore around a tree.
∃e[Chased(e, Alvin, Theodore) & ∃x{Around(e, x) & Tree(x)}]

Alvin chased Theodore joyfully around a tree.
∃e[Chased(e, Alvin, Theodore) & Joyful(e) & ∃x{Around(e, x) & Tree(x)}]
Alvin chased Theodore joyfully around a tree.
∃e[Chased(e, Alvin, Theodore) & Joyful(e) & ∃x{Around(e, x) & Tree(x)}]

Alvin chased Theodore joyfully.
∃e[Chased(e, Alvin, Theodore) & Joyful(e)]

Alvin chased Theodore.
∃e[Chased(e, Alvin, Theodore)]
Alleged Argument for Event Variables: *Conjunct Reduction*

\[ \exists e [ \text{Chased}(e, \text{Alvin, Theodore}) \land \text{Joyful}(e)] \]
\[ \exists e [ \text{Chased}(e, \text{Alvin, Theodore})] \]

\[ \exists e [ \Phi(e) \land \Psi(e)] \]
\[ \exists e [ \Phi(e)] \]

if something satisfies \( \Phi(e) \land \Psi(e) \)—

if *there is some thing that makes \( \Phi(e) \land \Psi(e) \) true when that thing is (assigned as) the value of \('e'\) —

then something satisfies \( \Phi(e) \)

But the plausible appeal to *conjunct-reduction* doesn’t yet motivate appeal to a *quantifier* that binds a *variable* that ranges over (events that are) potential *values of* the variable.
Predicate Reduction: No Variables (or Values) Needed

Bright( ) + Planet( ) \rightarrow Bright( )^\text{Planet}( )

for each thing, $\Phi( )^\Psi( )$ applies to it
if and only if both $\Phi( )$ and $\Psi( )$ apply to it

$\text{Bright}( )^\text{Planet}( ) \quad \text{Φ}( )^\text{Ψ}( ) \quad a \text{ purely } formal \text{ condition:}$
$\text{predicate reduction is licensed,}$
$\text{unless the predicate is marked}$
as licensing predicate addition

$\text{Planet}( ) \quad \text{Ψ}( )\quad \smiley$

$\text{~Planet}( ) \quad \text{~Ψ}( ) \quad \smiley$

$\text{~[Bright( )^Planet( )]} \quad \text{~[Φ( )^Ψ( )]}$
Two Kinds of “License to Reduce”

∃e[Chased(e, Alvin, Theodore) & Joyful(e)]

∃e[Chased(e, Alvin, Theodore)]

if something makes Chase(e, Alvin, Theodore) & Joyful(e) true,
when it is (assigned as) the value of ‘e’,
then it also makes Chase(e, Alvin, Theodore) true.

Chased( , Alvin, Theodore) & Joyful( )

Chased( , Alvin, Theodore)

predicate reduction is licensed unless the predicate is marked as a special case
How Many Values of ‘e’-variables?

Alvin chased Theodore.
\[ \exists e [\text{Chased}(e, \text{Alvin}, \text{Theodore})] \]

Theodore fled from Alvin.
\[ \exists e [\text{Fled}(e, \text{Theodore}) \& \text{From}(e, \text{Alvin})] \]

\underline{DISTINGUISH}: the chasing \textit{by Alvin of Theodore} is distinct from the fleeing \textit{by Theodore from Alvin different subjects, different “objects”}

\underline{IDENTIFY}: the (event of) fleeing is the (event of) chasing \textit{same spatiotemporal region, same participants}
How Many Values of ‘e’-variables?

Alvin chased Theodore.
∃e[Agent(e, Alvin) & PastChaseOf(e, Theodore)]

Theodore fled from Alvin.
∃e[Agent(e, Theodore) & PastFleeFrom(e, Alvin)]

DISTINGUISH: the chasing by Alvin of Theodore is distinct from the fleeing by Theodore from Alvin different Agents, different “second” participants
How Many Values of ‘e’-variables?

Alvin chased Theodore joyfully.  
∃e[Agent(e, Alvin) & PastChaseOf(e, Theodore) & Joyful(e)]

Theodore fled from Alvin joylessly.  
∃e[Agent(e, Theodore) & PastFleeFrom(e, Alvin) & Joyless(e)]

DISTINGUISH: the chasing by Alvin of Theodore is distinct from the fleeing by Theodore from Alvin different Agents, different “second” participants

the chasing was (done by Alvin and) joyful
the fleeing was (done by Theodore and) joyless
How Many Values of ‘e’-variables?

Alvin chased Theodore joyfully and athletically, but not skillfully.  
\[\exists e [\text{Chased}(e, \text{Alvin}, \text{Theodore}) \land J(e) \land A(e) \land \sim S(e)]\]

Theodore chased Alvin joylessly and unathletically, but skillfully.  
\[\exists e [\text{Chased}(e, \text{Theodore}, \text{Alvin}) \land \sim J(e) \land \sim A(e) \land S(e)]\]

DISTINGUISH: the chases exhibit different properties that can be specified in various ways

IDENTIFY: each chase exhibits the same sortal, same participants, same spatiotemporal region no two ships/statues/chipmunks/chases in the same place at the same time
How Many Values of ‘e’-variables?

Simon played a song *dramatically on his tuba*.
∃e[Played(e, Simon, a song) & Φ(e)]

Simon played his tuba *skilfully and melodiously*.
∃e[Played(e, Simon, his tuba) & Ψ(e)]

? Simon played a song *skilfully and melodiously*.
? ∃e[Played(e, Simon, a song) & Ψ(e)]

?? Simon played his tuba *dramatically on his tuba*.
?? ∃e[Played(e, Simon, his tuba) & Φ(e)]

Recall: ‘chase’ and ‘play’ were supposed to be *good* cases for Davidson
How Many Values of ‘e’-variables?

Simon played a song dramatically on his tuba.
∃e[Chased(e, Alvin, Theodore) & J(e) & A(e) & ~S(e)]

Simon played his tuba skillfully and melodiously.
∃e[Chased(e, Theodore, Alvin) & ~J(e) & ~A(e) & S(e)]

DISTINGUISH: the events exhibit different properties that can be specified adverbially or thematically

IDENTIFY: each performance exhibit the same sortal, same participants, same spatiotemporal region

no two ships/statues/chipmunks/performances in the same place at the same time
Outline

✔ Gesture at some initial puzzles for truth conditional semantics

✔ Introduce some other puzzles concerning “action reports,” which were supposed to provide support for truth conditional semantics

Was the event of Alvin chasing Theodore joyfully
the event of Theodore chasing Alvin joylessly?

• With regard to the alleged values of these event variables...
  – Argue against identity responses to the puzzles
  – Argue against non-identity responses to the puzzles
  – Conclude: action reports tell against truth conditional semantics
How Many Values of ‘e’-variables?

Alvin chased Theodore joyfully and athletically, but not skillfully. 
$$\exists e [\text{Chased}(e, \text{Alvin}, \text{Theodore}) \land J(e) \land A(e) \land \sim S(e)]$$

Theodore chased Alvin joylessly and unathletically, but skillfully. 
$$\exists e [\text{Chased}(e, \text{Theodore}, \text{Alvin}) \land \sim J(e) \land \sim A(e) \land S(e)]$$

DISTINGUISH, but RELATE: e₁ ≠ e₂, but e₁ ≈ e₂

IDENTIFY, but RELATIVIZE: a big ant can be a small animal; a creature that is big for an ant can be a small for an animal
How Many Values of ‘e’-variables?

Alvin chased Theodore joyfully and athletically, but not skillfully.
∃e[Chased(e, Alvin, Theodore) & J(e) & A(e) & ~S(e)]

Theodore chased Alvin joylessly and unathletically, but skillfully.
∃e[Chased(e, Theodore, Alvin) & ~J(e) & ~A(e) & S(e)]

DISTINGUISH, but RELATE: e₁ ≠ e₂, but e₁ ≈ e₂

IDENTIFY, but RELATIVIZE: a quick *swimming of the Channel* can be
(an event that is also) a slow *crossing of the Channel*;
an event can be joyful *qua chase-by-Alvin* yet
joyless *qua chase-by-Theodore*
How Many Values of ‘e’-variables?

Simon played a song *dramatically on his tuba.*
∃e[Played(e, Simon, a song) & Φ(e)]

Simon played his tuba *skillfully and melodiously.*
∃e[Played(e, Simon, his tuba) & Ψ(e)]

? Simon played a song *skillfully and melodiously.*
? ∃e[Played(e, Simon, a song) & Ψ(e)]

?? Simon played his tuba *dramatically on his tuba.*
?? ∃e[Played(e, Simon, his tuba) & Φ(e)]
Against Simple Identity: **Non**Entailments

Simon played the song *dramatically on his tuba*.
\[ \exists e [ \text{Played}(e, \text{Simon}, \text{the song}) \& \Phi(e)] \]
Simon played his tuba *skillfully and melodiously*.
\[ \exists e [ \text{Played}(e, \text{Simon}, \text{his tuba}) \& \Psi(e)] \]

? Simon played the song *skillfully and melodiously*.
? \[ \exists e [ \text{Played}(e, \text{Simon}, \text{the song}) \& \Psi(e)] \]

*It seems to depend on the details and operative standards.*
Against Simple Identity: \textit{Non}Entailments

Simon played the song \textit{dramatically on his tuba}.
\[\exists e [\text{Played}(e, \text{Simon}, \text{the song}) \& \Phi(e)]\]
Simon played his tuba \textit{skillfully and melodiously}.
\[\exists e [\text{Played}(e, \text{Simon}, \text{his tuba}) \& \Psi(e)]\]

?? Simon played his tuba \textit{dramatically on his tuba}.
?? \[\exists e [\text{Played}(e, \text{Simon}, \text{his tuba}) \& \Phi(e)]\]

\textit{Here, identification just seems wrong.}
So maybe we should Distinguish after all...

Simon played the song.
\[ \exists e [ \text{Played}(e, \text{Simon}, \text{the song})] \]
\[ e_1 = \text{the event of Simon playing the song} \]

Simon played his tuba.
\[ \exists e [ \text{Played}(e, \text{Simon}, \text{his tuba})] \]
\[ e_2 = \text{the event of Simon playing his tuba} \]

DISTINGUISH, but RELATE: \( e_1 \neq e_2 \), but \( e_1 \approx e_2 \)

My Claim: while this strategy is plausible for some cases, it is not plausible for these cases.
Plausible Cases of “Distinct but Related”

- Booth shot Lincoln with a pistol
- Booth pulled the trigger with his finger
- Booth didn’t shoot Lincoln with his finger
- Booth didn’t pull the trigger with a pistol

It seems that (modulo some niceties)
the pulling was a \textit{part} of the shooting...
the pulling ended \textit{before} the shooting did

- Booth pulled the trigger long before Lincoln died
- Booth killed Lincoln long before Lincoln died

But each chipmunk-chase has \textit{the same} spatiotemporal features/participants.
Likewise, it seems, for Simon’s \textit{song-playing} and his \textit{tuba-playing}.
Not Implausible Cases of “Distinct but Related”

Grant that statues are not lumps of clay (fusions of molecules, etc.)
• The artist made the statue
• The artist did not make the lump of clay
• The statue can lose a bit (and still be the same statue)
• The fusion of molecules cannot lose a bit (and be the same fusion)

In these cases, it seems to be important that the **sortal** differs:
  - no two statues/fusions/artists
    - in the same place at the same time
Less Plausible Cases of “Distinct but Related”

Simon *played the song*
Simon *played his tuba*

Are these different event sortals? And if so, what linguistic differences *don’t* make for different sortals?

Simon *played his favorite record*
Simon *played his favorite song*
Simon *played a hit record*
(While working as a DJ) Simon *played a Beatles tune on the radio*

**Russell:** *retain a “robust sense of reality”*
**Davidson:** *genuine values of variables are describable in many ways*
Less Plausible Cases of “Distinct but Related”

Simon *played the song*

Simon *played his tuba*

If *any* grammatical difference can make for a sortal difference, in a way that allows for distinct but co-located events...

Simon *played the song on Monday*

Simon *played the song on his tuba*

Simon *played the song on his tuba on Monday*

...then why think that the song-playing *is* a song-playing on a tuba on Monday?
Two Kinds of “License to Reduce”

\[ \exists e [ \text{Chased}(e, \text{Alvin, Theodore}) \& \text{Joyful}(e)] \]

\[ \exists e [\text{Chased}(e, \text{Alvin, Theodore})] \]

if \textit{something} makes \text{Chase}(e, \text{Alvin, Theodore}) \& \text{Joyful}(e) true,  
when \textit{it} is (assigned as) the value of ‘e’, 
then \textit{it} also makes \text{Chase}(e, \text{Alvin, Theodore}) true.

\[ \text{Chased}(\ , \text{Alvin, Theodore}) \land \text{Joyful}(\ ) \]
\[ \text{Chased}(\ , \text{Alvin, Theodore}) \]

predicate reduction is licensed \textit{unless} the predicate is \textit{marked} 
as a special case
So maybe we should Identify after all...

Simon played the song *dramatically on his tuba*.
\[ \exists e [ \text{Played}(e, \text{Simon, the song}) \ & \ \Phi(e)] \]

Simon played his tuba *skillfully and melodiously*.
\[ \exists e [ \text{Played}(e, \text{Simon, his tuba}) \ & \ \Psi(e)] \]

?? Simon played his tuba *dramatically on his tuba*.
?? \[ \exists e [ \text{Played}(e, \text{Simon, his tuba}) \ & \ \Phi(e)] \]

**IDENTIFY, but RELATIVIZE:** a song-playing that *is* a tuba-playing can be Dramatic and OnHisTuba *qua song-playing* yet fail to be Dramatic and OnHisTuba *qua tuba-playing*

My Claim: while this strategy is plausible for *some* cases, it is not plausible for *these* cases
Plausible Cases of “Identify but Relativize”

• Every **big ant** is (still) a **small animal**.
• The **good wrench** was a **poor weapon**.

And perhaps...

• Simon played his tuba well, but he did not play the song well.

  \[\exists e[\text{Played}(e, \text{Simon, his tuba}) \land \text{Well}(e)] \land \neg \exists e[\text{Played}(e, \text{Simon, the song}) \land \text{Well}(e)]\]

Simon’s playing of his tuba was a good one, but his playing of the song was not a good one.
In Favor of Relativization, Sometimes

The concept GOOD-FOR (GOOD-AS, GOOD-ONE) may be more basic than GOOD simpliciter. And likewise for many adjectives (e.g., ‘big’) that plausibly lexicalize relational concepts.

‘big ant’ → BigAnt(x) → Ant(x) & Big(x)

→ TheAnts(X)[BigOne(x, X)]

∀e[Played(e, Simon, his tuba) & GoodOne(e, PlayingOfHisTuba)] &

¬∃e[Played(e, Simon, the song) & GoodOne(e, PlayingOfTheSong)]
Less Plausible Cases of “Identify but Relativize”

Simon played the song on his tuba in two minutes.
\[ \exists e [\text{Played}(e, \text{Simon}, \text{the song}) \& \text{OnHisTuba}(e) \& \text{InTwoMinutes}(e)] \]

Simon played his tuba for two minutes.
\[ \exists e [\text{Played}(e, \text{Simon}, \text{his tuba}) \& \text{ForTwoMinutes}(e)] \]

\[ (e_1 = e_2) \implies \exists e [\text{Played}(e, \text{Simon}, \text{the song}) \& \text{Played}(e, \text{Simon}, \text{his tuba}) \& \text{OnHisTuba}(e) \& \text{InTwoMinutes}(e) \& \text{ForTwoMinutes}(e)] \]
Less Plausible Cases of “Identify but Relativize”

Simon played the song on his tuba in two minutes.

\[ \exists e \left[ \text{Played}(e, \text{Simon, the song}) \& \text{OnHisTuba}(e) \& \text{InTwoMinutes}(e) \right] \]

Simon played his tuba for two minutes.

\[ \exists e \left[ \text{Played}(e, \text{Simon, his tuba}) \& \text{ForTwoMinutes}(e) \right] \]

\((e_1 = e_2) \implies \exists e \left[ \text{Played}(e, \text{Simon, his tuba}) \& \text{OnHisTuba}(e) \& \text{InTwoMinutes}(e) \right] \]

?? Simon played his tuba on his tuba. \textit{(weird thought, but grammatical)}

?? Simon played his tuba in two minutes. \textit{(somehow ungrammatical, despite an available unwieldy thought)}
if it is *true* that

$$\exists e [\text{Played}(e, \text{Simon, the song}) \land \text{Played}(e, \text{Simon, his tuba}) \land \text{OnHisTuba}(e) \land \text{InTwoMinutes}(e) \land \text{ForTwoMinutes}(e)]$$

then why *can’t* we understand the following as true sentences?

*Simon played his tuba on his tuba.*

*Simon played his tuba in two minutes.*

*Simon played his tuba on a brass instrument in two minutes.*

*Simon played his tuba well on a large brass instrument for a tuba-playing.*
Another Worry About Identifying

Simon played the song, and Simon played his tuba.

\[ \exists e [ Player(e, \text{Simon}) \& \text{PastPlaying}(e) \& \text{ThingPlayed}(e, \text{the song})] \]
\&

\[ \exists e [ Player(e, \text{Simon}) \& \text{PastPlaying}(e) \& \text{ThingPlayed}(e, \text{his tuba})] \]

\((e_1 = e_2) \implies \text{one event of Playing has more than one ThingPlayed}\)

Can one “e-variable value” have two participants of the same sort?

Simon lifted the piano.

\[ \exists e [ \text{Lifter}(e, \text{Simon}) \& \text{PastLifting}(e) \& \text{ThingLifted}(e, \text{the piano})] \]

Recall: ‘chase’ and ‘play’ were supposed to be good cases for Davidson
Two Kinds of “License to Reduce”

∃e[Chased(e, Alvin, Theodore) & Joyful(e)]

if something makes Chase(e, Alvin, Theodore) & Joyful(e) true, when it is (assigned as) the value of ‘e’, then it also makes Chase(e, Alvin, Theodore) true.

Chased( , Alvin, Theodore)^Joyful( )

predicate reduction is licensed unless the predicate is marked as a special case
Two Kinds of “License to Reduce”

∃e[Chased(e, Alvin, Theodore) & Joyful(e)]

∃e[Chased(e, Alvin, Theodore)]

specify meanings in terms of...

*predicates that can be reduced* ✔

*variables that have events as values* ✗

Chased( , Alvin, Theodore)^Joyful( )

Chased( , Alvin, Theodore)
Torcello was moved to Venice.
Venice is a nice place.

Torcello was moved to a nice place.  😊

Torcello was moved to Venice.
Venice is a nice place.
Venice will be moved.
Torcello was moved to a nice place that will be moved.  😞

Specifying meanings in terms of...

- predicates that can be reduced  ✔
- variables that have entities as values  ❌
Outline

✔ Gesture at some initial puzzles for truth conditional semantics

✔ Introduce some other puzzles concerning “reports,” which were supposed to provide support for truth conditional semantics

Was the event of Alvin chasing Theodore joyfully
the event of Theodore chasing Alvin joylessly?

✔ With regard to the alleged values of these event variables...
  – Argue against identity responses to the puzzles
  – Argue against non-identity responses to the puzzles
  – Conclude: action reports tell against truth conditional semantics
Values of Event Variables?

THANKS!
I find myself torn between two conflicting feelings—a ‘Chomskyan’ feeling that deep regularities in natural language must be discoverable by an appropriate combination of formal, empirical, and intuitive techniques, and a contrary (late) ‘Wittgensteinian’ feeling that many of the ‘deep structures’, ‘logical forms’, ‘underlying semantics’ and ‘ontological commitments’, etc., which philosophers have claimed to discover by such techniques are Luftgebäude.

Saul Kripke, 1976

Is there a Problem about Substitutional Quantification?

natural language semantics:

deep regularities, yes...
ontological commitments, no
As Frege and Tarski Taught Us, We Need Variables for...

<table>
<thead>
<tr>
<th>Bright( ) &amp; Planet( )</th>
<th>Bright(x) &amp; Planet(x)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bright(x) &amp; Planet(y)</td>
</tr>
<tr>
<td>Above( , ) &amp; Planet( )</td>
<td>Above(x, y) &amp; Planet(x)</td>
</tr>
<tr>
<td></td>
<td>Above(x, y) &amp; Planet(y)</td>
</tr>
</tbody>
</table>

∃? [Above( , ) & Planet( )]  
∃x [Above(x, y) & Planet(x/y/z)]

∃y [Above(x, y) & Planet(x/y/z)]
∃z [Above(x, y) & Planet(x/y/z)]

<table>
<thead>
<tr>
<th>Between( , , ) &amp; Above( , )</th>
<th>Between(x, y, z) &amp; Above(u, v)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Between(x, y, z) &amp; Above(u, z)</td>
</tr>
<tr>
<td></td>
<td>Between(x, y, z) &amp; Above(y, z)</td>
</tr>
</tbody>
</table>
But if there is only one possibility for how “slots can be linked,” then we don’t need variables to distinguish among options.

\[
\text{Bright( ) + Planet( ) } \Rightarrow \text{Bright( )}^{\text{Planet( )}}
\]

\[
\text{Above( , ) + Planet( ) } \Rightarrow \exists \text{[Above( , )}^{\text{Planet( )}]} \\
\text{no-variable analog of \hspace{1cm} \exists y [Above(x, y) & Planet(y)]}
\]
\[ \exists \text{Agent}(\ , \ ) \wedge \text{Al}(\ ) \wedge \exists \text{Patient}(\ , \ ) \wedge \text{Theo}(\ ) \]

no-variable analog of

\[ \exists y [\text{Agent}(e, y) \wedge \text{Al}(y)] \wedge \exists y [\text{Patient}(e, y) \wedge \text{Theo}(y)] \]

\[ \exists [\text{Agent}(\ , \ ) \wedge \text{Al}(\ ) \wedge \text{Chase}(\ ) \wedge \exists \text{Patient}(\ , \ ) \wedge \text{Theo}(\ )] \wedge \text{Joyful}(\_\_\_\_\_\_) \]

no-variable analog of

\[ \exists [\text{Agent}(\ , \ ) \wedge \text{Al}(\ ) \wedge \text{Chase}(\ ) \wedge \exists \text{Patient}(\ , \ ) \wedge \text{Theo}(\ )] \wedge \exists y [\text{Agent}(e, y) \wedge \text{Al}(y)] \wedge \text{Chase}(e) \wedge \exists y [\text{Patient}(e, y) \wedge \text{Theo}(y)] \wedge \text{Joyful}(e) \]

\[ \exists y [\text{Agent}(e, y) \wedge \text{Al}(y)] \wedge \text{Chase}(e) \wedge \exists y [\text{Patient}(e, y) \wedge \text{Theo}(y)] \]
‘water’ is true of $e$ if and only if $e$ is (a sample of) water

Is this an empirical hypothesis? What does it imply with regard to...

<table>
<thead>
<tr>
<th>Substance</th>
<th>Purity</th>
</tr>
</thead>
<tbody>
<tr>
<td>ice</td>
<td>100</td>
</tr>
<tr>
<td>steam</td>
<td>100</td>
</tr>
<tr>
<td>Diet soda, not cola</td>
<td>99.8</td>
</tr>
<tr>
<td>Tea:</td>
<td>99.7</td>
</tr>
<tr>
<td>Diet Cola:</td>
<td>99.54</td>
</tr>
<tr>
<td>stuff from my well:</td>
<td>&lt; 99.4</td>
</tr>
<tr>
<td>Coffee:</td>
<td>99.39</td>
</tr>
<tr>
<td>Ocean “Water”</td>
<td>96.5</td>
</tr>
<tr>
<td>Bud Light:</td>
<td>95.0</td>
</tr>
</tbody>
</table>

‘air/fire/sky’ is true of $e$ if and only if $e$ is (a sample of) air/fire/sky

‘Venice’ is true of $e$ if and only if $e$ is (identical with) Venice
On the one hand...

Morgan and Ainsley kissed. Each kissed the other, quite happily.

*Nonetheless...*

Morgan kissed Ainsley *a tad more energetically than Ainsley kissed Morgan.*

Ainsley kissed Morgan *a tad more softly than Morgan kissed Ainsley.*

Perhaps we can and should posit two coordinated kissings. So perhaps it’s OK to posit two coordinated chasings.
On another hand...

Carnegie Deli faces Carnegie Hall.
Carnegie Hall faces Carnegie Deli.

Simon played a song on his tuba.
Simon played his tuba.

Positing two facings/playings seems less plausible.

So do we really have good reasons for proliferating chasings (or even kissings)?

*The Kisses
Telicity Worry about Identifying/Relativizing

Simon jogged to the park in an hour, getting there at 2pm.
Simon jogged for an hour, ending up in the park at 2pm.
*Simon jogged in an hour, thereby getting to the park at 2pm.

But if the jogging to the park is the jogging, which ends in the park, then that event is both In-An-Hour and For-an-Hour.

Simon put the polish on the brass for/in an hour.
Simon polished the brass for/in an hour.

Simon put polish on the brass for/*in an hour.
Simon polished brass for/*in an hour.

If the putting of (the) polish on the brass is the polishing of (the) brass, then that event is both In-an-Hour and For-an-Hour.