A coercion-free semantics for intention reports

1 Overview

(1) **Broad goal:** Bring intention reports into the purview of formal semantics, alongside the better studied belief and desire reports.

(2) **Narrow goal:** Solve what I call the **INTENTION PUZZLE** by synthesizing a possible worlds semantics for attitude predicates with Searle’s (1983; 2009) claim that intentions are causally self-referential.

2 The intention puzzle

Predicates of belief, desire, and intention can all comfortably embed clauses whose subject is bound by the attitude holder:

(3) John \(_1\) **believes** [\(\text{he}_1\)’ll fall asleep early tonight].

(4) John \(_1\) **wants** [\(\text{PRO}_1\) to fall asleep early tonight].

(5) John \(_1\) **intends** [\(\text{PRO}_1\) to fall asleep early tonight].

But when the embedded subject is not bound by the attitude holder, an interesting asymmetry emerges:

**THE INTENTION PUZZLE:**

(6) John **intends** for Bill to fall asleep early tonight.

\[\approx\] John intends to *bring it about that* Bill fall asleep early tonight.

(7) a. John **believes** Bill will fall asleep early tonight.

\[\neq\] John believes he’ll bring it about that Bill fall asleep early tonight.

b. John **wants** Bill to fall asleep early tonight.

\[\neq\] John wants to bring it about that Bill fall asleep early tonight.

Where does the causative meaning in sentences like (6) come from?

(8) **Hypothesis A:** From the grammar via coercion

(Perlmutter 1968; Jackendoff and Culicover 2003; Grano 2014):  

(9) **Hypothesis B:** From **intend:**

\[\text{VP} \quad \begin{array}{c} \text{V} \\
\text{intend} \end{array} \quad \begin{array}{c} \text{PRO} \\
\text{CAUSE} \end{array} \quad \begin{array}{c} \text{for Bill to fall asleep early tonight} \\
\text{for Bill to fall asleep early tonight} \end{array} \]
THE TWO MAIN CLAIMS I WILL ARGUE FOR:

(10) a. The source of the puzzle is that the conditions of satisfaction for intention (unlike those for belief and desire) are causally self-referential (Harman 1976; Searle 1983, 2009).
    b. Once the causal self-referentiality of intention is built into the semantics for intend, the interpretation of sentences like (6) follows straightforwardly without coercion, thereby supporting Hypothesis B.

3 Starting point: A run-of-the-mill possible worlds approach to intend

Attitudes (relative to an individual and a world) define sets of possible worlds:

(11) ALT_{bel}(x,w) = \{w': it is compatible with what x believes in w for w to be w'\}
(12) ALT_{des}(x,w) = \{w': it is compatible with the fulfillment of x’s desires in w for w to be w'\}
(13) ALT_{int}(x,w) = \{w': it is compatible with the carrying out of x’s intentions in w for w to be w'\}

With (13), we can construct a preliminary denotation for intend:

(14) \[\text{[intend]}^w = \lambda p_{(st)} \lambda x.e. \forall w' \in \text{ALT}_{int}(x,w): [p(w')]] \quad \text{(preliminary)}
(15) \[\text{[John intends to fall asleep early]}^w = \forall w' \in \text{ALT}_{int}(j,w): [j\text{-fall-asleep-early}(w')]]

≈ ‘All those worlds compatible with the carrying out of John’s intentions in w are worlds in which John falls asleep early.’

In what follows, I will show that (14) is inadequate because it fails to build in the causal self-referentiality of intention. Once this is fixed, the INTENTION PUZZLE will fall out as a consequence.

(For ease of exposition here and in what follows, I treat controlled complements as propositions rather than properties, but this is not crucial: see Grano 2015 for an implementation à la Chierchia 1990; Stephenson 2010; Pearson 2013, as well as discussion of the de se-ness of intention.)

4 Philosophical detour: Causal self-referentiality

Searle 2009: Propositional attitudes have conditions of satisfaction:

(16) a. Beliefs are either true or false.
    b. Desires are either fulfilled or unfulfilled.
    c. Intentions are either carried out or not carried out.

Searle 2009: Assessing whether the conditions of satisfaction are met:

(17) a. A belief that p is satisfied if p is true.
    b. A desire that p is satisfied if p is true.
    c. An intention that p is satisfied if p is true and p is brought about as a planned consequence of the very intention it represents.

→ The conditions of satisfaction for intention are causally self-referential!
Harman 1976:444:

“Mabel intends to drive to Ted’s house, to find him, and to kill him. By chance, Ted hap-
pens to walk by as Mabel backs out of her driveway and she runs him down without even
seeing him. She intends to kill and does kill him, but she does not kill him intentionally.”

In this scenario:

(18) a. Mabel intends to kill Ted.
   b. Mabel kills Ted.
   c. Mabel does not carry out her intention to kill Ted.

This means our preliminary denotation for *intend* is too weak.

An analogy from the domain of individuals:

(19) All dogs are mammals.

Back to the case at hand:

(20) Kim intends to fall asleep early.
5 Encoding causal self-referentiality

Two new meta-language predicates:

(21) \( \text{EXEC}(s,x,p,w) = 1 \) iff \( x \) brings it about that \( p \) as a planned consequence of \( s \) in \( w \).

(22) \( \text{INT}(s,x,w) = 1 \) iff \( s \) is an intention held by \( x \) in \( w \).

The new denotation for \textit{intend}:

(23) \( \text{[intend]}^w = \lambda p \lambda x \lambda s. \text{INT}(s,x,w) \land \forall w' \in \text{ALT}_{int}(x,w): \text{[EXEC}(s,x,p,w')] \)

Example:

(24) a. Kim intends to fall asleep early.
   b. \( \exists s \) \( \text{INT}(s,k,w) \land \forall w' \in \text{ALT}_{int}(k,w): \text{[EXEC}(s,k,k\text{-fall-asleep-early},w') \)
   c. ‘Kim has an intention, and all those worlds compatible with the carrying out of Kim’s intentions are worlds in which Kim brings it about that Kim fall asleep early as a planned consequence of that intention.’

6 Consequences for the intention puzzle

Intention “under control”:

(25) Kim intended to fall asleep early.

Intention “out of control”:

(26) Kim intended for \textbf{Sandy} to fall asleep early.

\( \rightarrow \) Coercion-free!
7 Beyond intention

The predicate *intend* as a member of the COMMITMENT family:

(28) promise, swear, agree, contract, pledge, vow, try, intend, refuse, choose, decline, decide, demand, endeavor, attempt, threaten, undertake, propose, offer, aim, [not in Sag & Pollard’s list: manage, remember] (Sag and Pollard 1991:65)

These predicates (marginally) accept *for-to* complements with the same causative flavor:

(29) We tried for him to get better this morning.

(30) I managed for him to notice me.
(https://twitter.com/goldyks/status/311362694768914432; retrieved 2/26/15)

(31) The only reason why my 4yr old calmed down tonight . . . was because I threatened for him to sleep in the spare room.
(http://community.babycentre.co.uk/post/a8556125/looking_for_advice_re_separate_bedrooms_for_kids; retrieved 2/25/15)

→ COMMITMENT predicates all have a semantics that involves EXEC.

Cf.:

(32) a. Kim was stupid (*for Sandy) to fall asleep. EVALUATIVE
   ≠ Kim was stupid to bring it about that Sandy fall asleep.
   b. Kim began (*for Sandy) to fall asleep. ASPECTUAL
   ≠ Kim began to bring it about that Sandy fall asleep.

→ (32) reinforces the conclusion that the causative flavor of sentences like (29)–(31) follows from the semantics of commitment predicates rather than from a general grammatical coercion strategy.

8 Conclusions

(33) Narrow conclusion: The semantics of intention reports in non-control sentences follows straightforwardly from the basic meaning of *intend*, with no appeal to coercion needed.

(34) Some broader (methodological) themes:
   a. *For semantics-philosophy:* Intentionality and action theory may be useful in understanding natural language phenomena that stand at the intersection between attitude and action. Other possibly relevant phenomena: actuality entailments (Giannakidou and Staraki 2013), have-causatives (Copley and Harley 2009), intentional verbs (Kamp 1999–2007), futurates (Copley 2008, 2009), rationale clauses (Farkas 1988), *try* (Sharvit 2003; Grano 2011), *manage* (Baglini and Francez to appear).
   b. *For syntax-semantics:* Shifting more of the explanatory burden of control theory off syntactic principles and onto lexical semantics. (A move very familiar in work on the interpretation of PRO but much less so in work on the distribution of PRO.)

Download the full paper (Grano 2015) at http://pages.iu.edu/~tgrano/intention.pdf.
References


Grano, Thomas. 2015. The logic of intention reports. Ms., Indiana University.


