Semantic Theory
week 11 – Projective Discourse Representation Theory

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Evaluation of the DRT analysis of presuppositions

Pros:

- Empirically sound representations
- Unified treatment of presuppositions and anaphora
- Structural explanation of filtering/cancellation principles

Cons:

- Two-stage resolution procedure for presuppositions not compositional
- Once resolved, presuppositions have lost their ‘presuppositionhood’
- Does not explain projection behaviour of other phenomena: for instance, conventional implicatures

Conventional Implicatures

- *Noam Chomsky, a famous linguist, attended the conference.*

Assertion: Noam Chomsky attended the conference

Conventional implicature: Noam Chomsky is a famous linguist

part of the conventional meaning of words/constructions (as opposed to usage)

not part of the truth-conditions of the sentence as a whole

Grice 1975; Potts 2003, 2005

Examples of conventional implicatures

(1) Ames, the former spy, is now behind bars.	appositive
(2) Ames, who stole from the FBI, is now behind bars.	non-restrictive relative clause
(3) Ames was, as the press reported, a successful spy.	as-clause
(4) Fortunately, Beck survived the descent.	parenthetical
(5) Frankly (speaking), Ed fled.	utterance modifier
(6) I hate your damn dog!	expressive adverb
(7) That bastard Conner got promoted.	epithet
(8) Yamadasensei -ga o -warai-ni nat-ta. Yamada teacher - nom hon - laugh - dat be - perf 'Professor Yamada laughed.' honorific	honorific

Potts 2003, 2005

Properties of conventional implicatures

Conventional implicatures are…

- *non-cancellable:* they cannot be directly denied
- *not at-issue:* CIs are not part of the regular asserted content
- *scopeless:* CIs project, and are not sensitive to 'presupposition plugs' (such as propositional attitude verbs)
- *speaker-oriented:* the speaker of a sentence containing a CI-trigger is committed to the CI content

Potts 2003, 2005

Conventional implicatures versus presuppositions

"Presuppositions are a special case of conventional implicatures, namely, those which, for pragmatic reasons, are presumed to be true already." Karttunen & Peters (1979)

"Conventional implicatures are distinguished from presuppositions in that they introduce new information, motivating a *multi-dimensional* approach to meaning." Potts (2005)

"Presuppositions and conventional implicatures belong to the larger class of not at-issue content." Simons et al. (2010)

Q: How to provide a unified formal treatment of projection?

Toward a unified treatment of projection

A blind man walks into a bar…

✓… he/him …	✗ … she/her …	
✓… the (blind) man…	✓… the policeman …	} backgrounded
✗ … the man, who is blind, …	✓… the man, who has a dog, …	} backgrounded
✗ … a man …	✓ … a woman …	➔ foregrounded
given information	new information	

Proposal: Projection phenomena (and asserted content) can be categorised based on their *information status*

Givenness: determines whether the contribution is *given* or *new*

Backgroundedness: determines whether the contribution is at-issue or not.

The information status of semantic content

Type	**Given**	**New**	
		backgrounded	*foregrounded*
Anaphora	+	−	−
Strong presuppositions	+	+	−
Weak presuppositions	+	+	+
CIs	−	+	−
Assertions	−	−	+
Indefinites	−	+	+

Information status in DRT

- givenness ~ anaphoric binding
- new information ~ accommodation / informativity constraint
- backgroundedness ~ embedding (?)

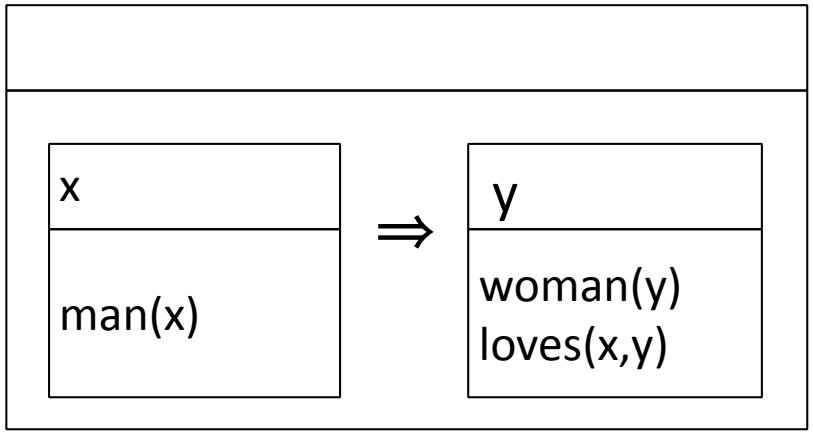
How to represent the difference between foregrounded and backgrounded information *without* assuming different levels of meaning?

We need a more explicit notion of information status in DRT

Projective DRT

PDRT is an extension of DRT with an explicit representation of information status; projection variables (*pointers* and *labels*) indicate the *interpretation site* of all referents and conditions

Every man loves a woman.



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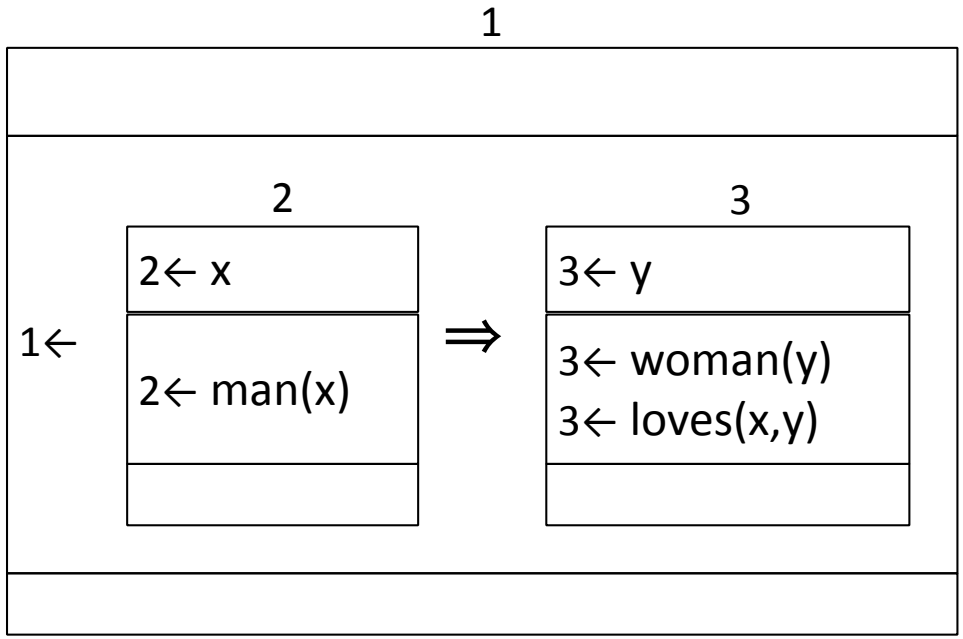

Projective DRT

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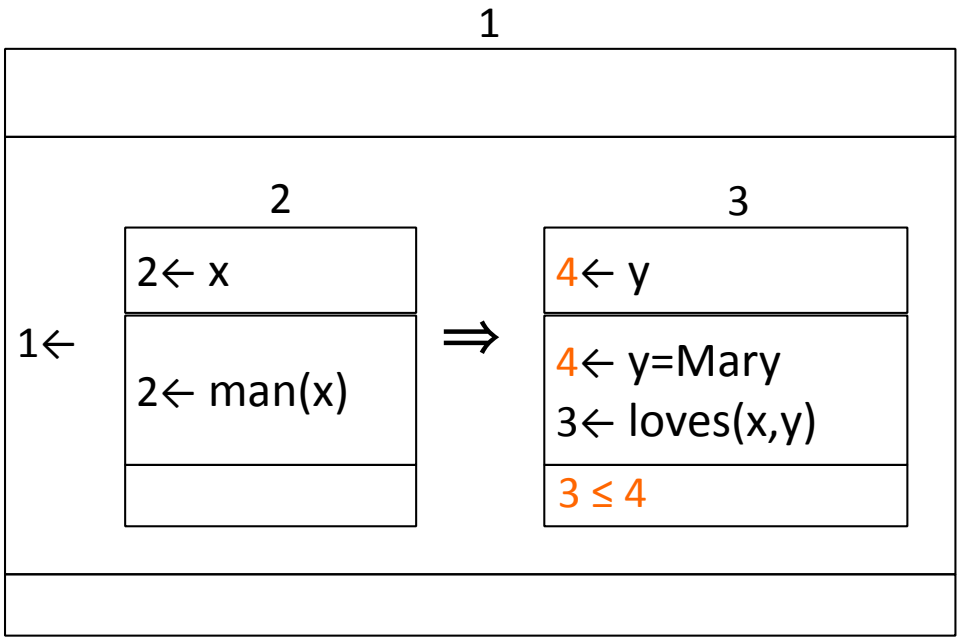
Every man loves Mary.

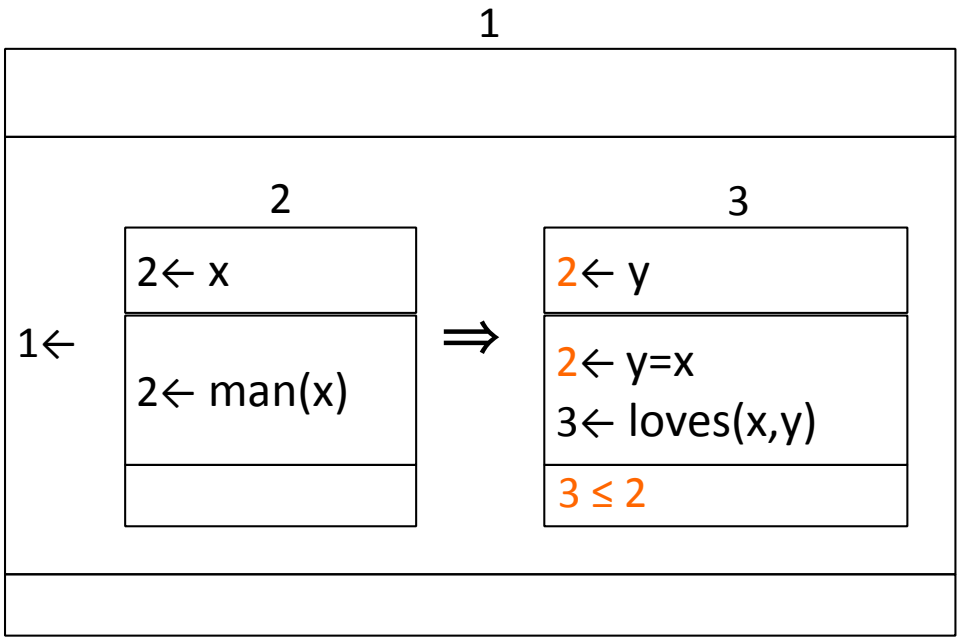


The projection site of unresolved presuppositions is *underspecified*

Anaphora in PDRT

Anaphoric expressions bind their pointer *and* referent to (the context of) their antecedent.

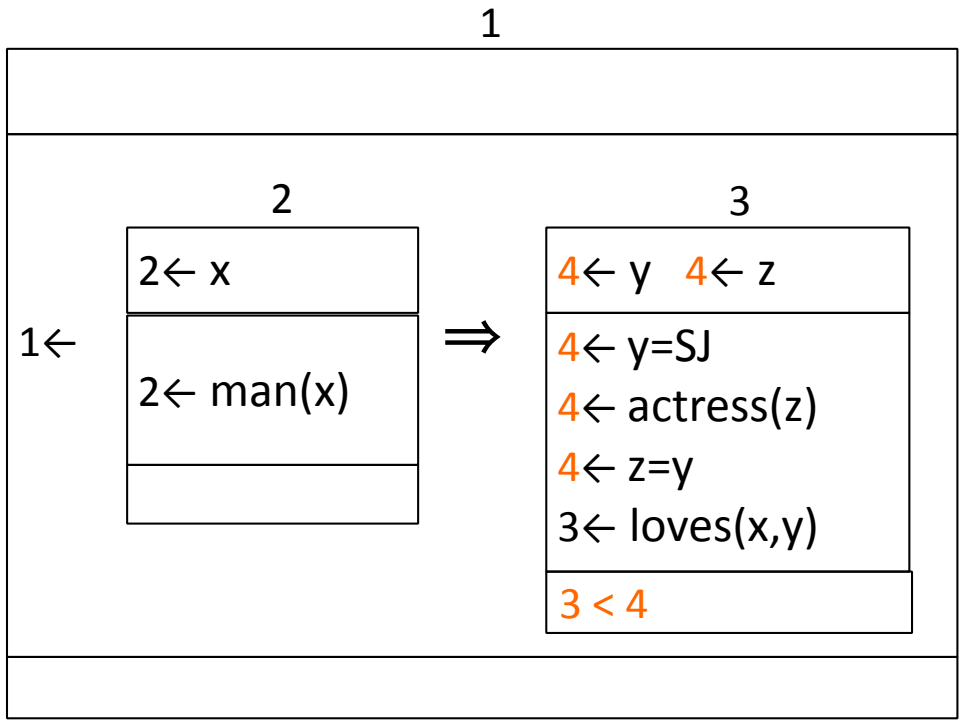
Every man loves himself.



Conventional implicatures in PDRT

Conventional implicatures are represented as “piggybacking on their projecting anchor”.

Every man loves Scarlett Johansson, (who is) an actress.

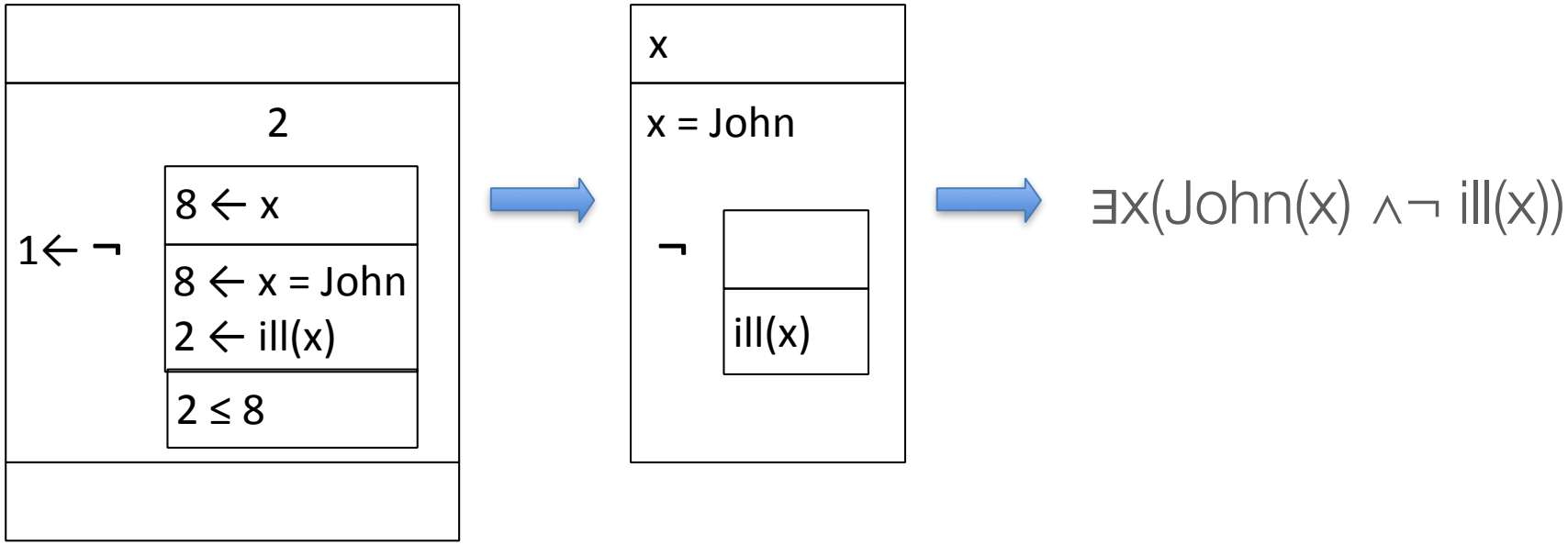


PDRT versus DRT

PDRSs contain the same information as DRSs and more!

This means that we can translate PDRSs into DRSs (and FOL)

It's not the case that John is ill.



PDRS Syntax

A PDRS P is defined as a quadruple: ⟨L,D,C,M⟩, where:

i. L is a projection variable;

ii. D is a finite set of projected referents of the form p ← x, such that p is a projection variable, and x is a discourse referent;

iii. C is a finite set of projected conditions of the form p ← c, such that p is a projection variable, and c is a PDRS condition;

iv. M is a finite set of MAPs (Minimally Accessible PDRS-contexts) of the form $p_1 \leq p_2$, such that p_1 and p_2 are projection variables.

PDRS Syntax (cont.)

PDRS conditions may be either basic or complex, and are defined as follows:

i. $R(x_1, ..., x_n)$ is a basic PDRS condition, with $x_1 ... x_n$ are discourse referents and R is a relation symbol for an n-place predicate;

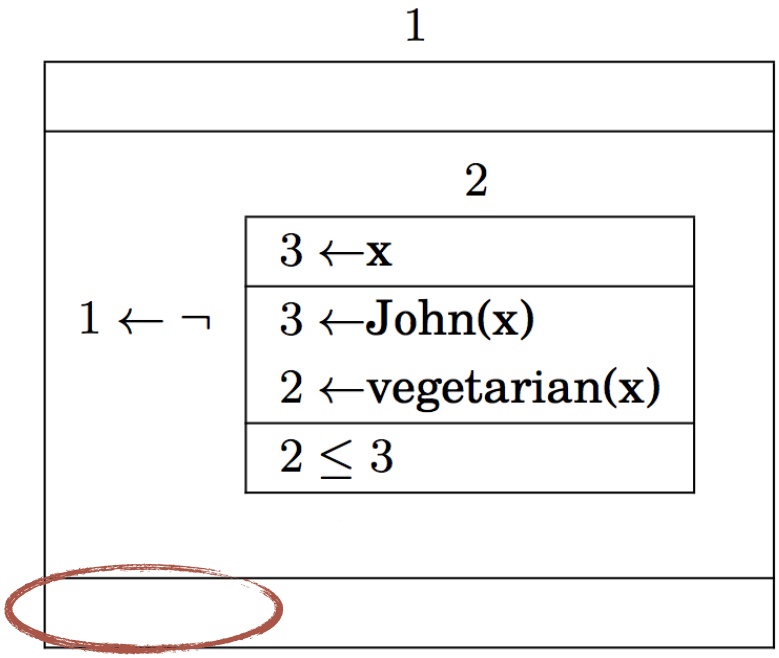
ii. $x_1 = x_2$ is a basic PDRS condition, with x_1 and x_2 are discourse referents;

iii. $\neg P$ is a complex PDRS condition, with P is a PDRS;

iv. $P_1 \vee P_2$ and $P_1 \Rightarrow P_2$ are complex PDRS conditions, with P_1 and P_2 are PDRSs.

Accessibility in PDRT

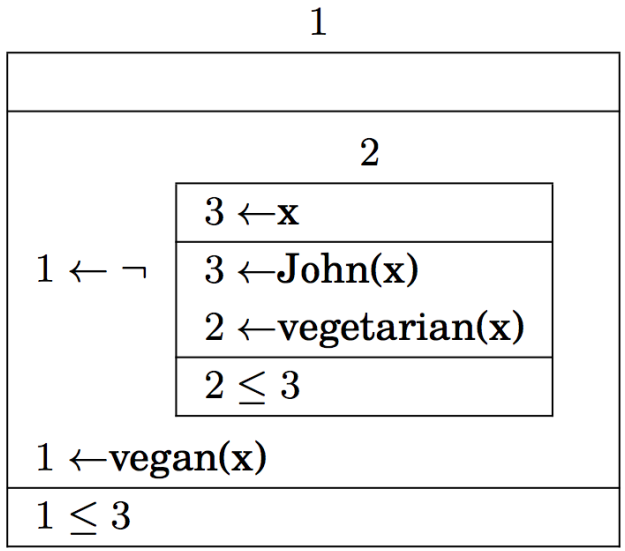
It is not the case that John is a vegetarian. He is a vegan.

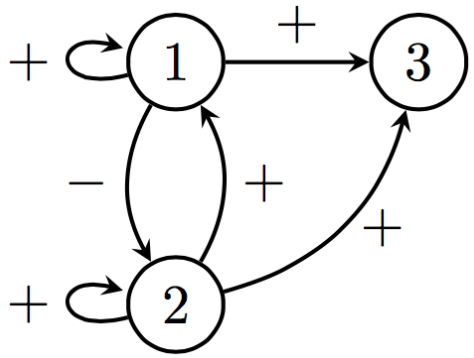


Accessibility in PDRT is determined based on the *interpretation site* of the semantic content

Accessibility using projection graphs

A projection graph is a partial order over PDRS-contexts





A projected referent with pointer p_1 is accessible from a projected condition with pointer p_2 in (global) PDRS P *iff*:

i. there is a path p from p_1 to p_2 in the projection graph of P, and

ii. p consists only of positive edges.

Summary PDRT

- Unified treatment of different types of projection phenomena (presuppositions, anaphora, and conventional implicatures)
- PDRT provides rich representational structures that extend all formal properties of DRT in terms of the accessibility constraints and model-theoretic interpretation
- Projection becomes part of semantic construction; no need for a two-stage resolution procedure