Strong predicative presuppositions[*]

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What happens when non-propositional presuppositions are triggered under or inside a quantificational phrase? (How) do these objects project (viz. what happens to the open argument slot)? I consider some new data and propose an account in the tradition of Satisfaction Theories.

Follow along at... http://tinyurl.com/essllip

Data on presuppositions triggered as propositional objects well described.

Accounts on the market have similar claims to descriptive adequacy.
• Modulo symmetric satisfaction, proviso problem, &c.

Where some additional progress might be made:
• Conceptual critiques (cf. Schlenker 2009).
• Empirical domain.

We'll try the latter.

Bound weak triggers:
- Predictions of some theories
  - Satisfaction
  - D(iscourse) R(epresentation) T(heory)
  - Modern trivalent (cf. George 2008)
- Chemla's data (+George)

Bound strong triggers:
- Assessing projection patterns
- A Satisfaction Theory account
- Evaluating competing theories

Back to bound weak triggers:
- Patching up Satisfaction Theory

Weak triggers

"Bound" presuppositions triggered in...

- Nuclear scope:
  (1) Each of your students$_i$ must leave [his$_i$ camera] at the desk.
- Restrictor:
  (2) Every boy$_i$ who brought [his$_i$ camera] must leave it at the desk.

Triggered presuppositional object:
- $\approx [\![x_i$ has a camera$]\!]^g$ or poss. $\approx \lambda x \,.\, \mathbf{has.camera}\, x$

What happens to it? viz. (How) does it project?
- Universally?
  - i.e. for (1): $\overset{?}{\leadsto} [\forall x : \mathbf{student}.x][\mathbf{has.camera}\, x]$
- Otherwise?

- Does the answer depend on...
  - The particular quantifier?
  - The syntactic position of the trigger (NS/restrictor)?
- Answer given tends to depend on the framework:

(cf. Heim 1983; Schlenker 2009)

"A presupposition must be entailed by its L(ocal) C(ontext)."
- LC $\approx$ Common Ground (σ) updated with "info" to trigger's left.
- Generalized entailment:
  - For any $\vec{v}, X_{\langle \tau_{\vec{v}}, t \rangle}, Y_{\langle \tau_{\vec{v}}, t \rangle}$: $X \overset{gen}{\Longrightarrow} Y \leftrightarrow X\vec{v} \rightarrow Y\vec{v}$
- E.g. p and $\underline{q}q' \overset{\pi}{\longmapsto} [\forall w \in \sigma][pw \rightarrow qw]$ (else, $\#$)
  - Usually strengthened to q.

Quantified cases?

(3) No student [quit smoking]

- LC at trigger (cf. Schlenker 2009):
  - $\lambda w \lambda x . w \in \sigma \wedge \mathbf{student}\, w\, x$
- $\rightsquigarrow \forall w \forall x . (w \in \sigma \wedge \mathbf{student}\, w\, x) \rightarrow \mathbf{smoked}\, w\, x$ (else, $\#$)

(4)   No student who [quit smoking] passed

- LC at trigger (cf. Schlenker 2009):
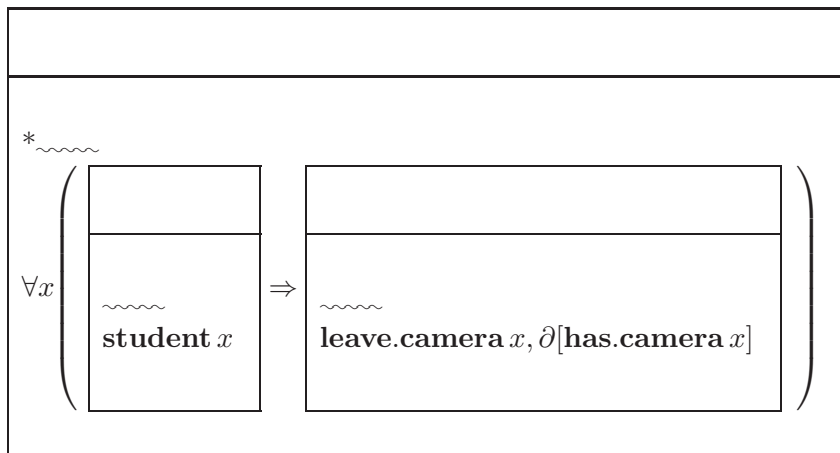 - $\lambda w \lambda x \, . \, w \in \sigma \wedge \mathbf{student} \, w \, x$
- $\rightsquigarrow \forall w \forall x \, . \, (w \in \sigma \wedge \mathbf{student} \, w \, x) \rightarrow \mathbf{smoked} \, w \, x$ (else, $\#$)

(cf. van der Sandt 1992; Geurts 1999)

(5)   Every student$_i$ must leave [his$_i$ camera] at the front desk.

c.p. Global resolution preferred, but yields uninterpretable DRS.
  • $\rightsquigarrow$ "every student who has a camera..." (Geurts: good!)

(6)   cf. Each of your 10 students must leave his camera at the front desk.

(cf. George 2008)

Preference for possibility of True (avoid "disappointment")..

NS: given a $\mathcal{Q}P.\underline{N}N'$ (e.g. $\mathcal{Q}$ *student(s) stopped smoking*)...
- $\mathcal{Q}$s whose truth requires verifying for every $x \in P$ that the NS holds
  $\rightsquigarrow \pi : \forall x . Px \to Nx$
  - *Every, none.*
- $\mathcal{Q}$s like *some*, whose truth just requires verifying for some $x \in P$
  that the NS holds, $\rightsquigarrow \pi : \exists x.Px \wedge Nx$

Restrictor: given a $\mathcal{Q}\underline{P}P'.N$ (e.g. $\mathcal{Q}$ *students who stopped smoking left*)
- Incremental version can posit $\top$ for N.
- No presupposition triggered.

	Satisfaction	DRT	Trivalent
$\forall$ projection from NS of $each/none$	✓		✓
$\forall$ projection from NS of non-$\forall \mathcal{Q}$s	✓		
$\forall$ projection from restrictor of a $\mathcal{Q}$	✓		

Nuclear scope
(7)   Each of these ten students$_i$ [knows that he$_i$'s incompetent]
(8)   None of these ten students$_i$ [knows that he$_i$'s incompetent
(9)   Exactly two of these ten students$_i$ [know that they$_i$'re incompetent]

Restrictor
(10)   Of these ten students$_i$ [each one who knows he$_i$'s incompetent] quit
(11)   Of these ten students$_i$ [two of the ones who know they$_i$'re incompetent] quit

Drumroll..

	Satisfaction	DRT	Trivalent	@WkTr
$\forall$ projection from NS of *each/none*	✓		✓	✓
$\forall$ projection from NS of non-$\forall\mathcal{Q}$s	✓			
$\forall$ projection from restrictor of a $\mathcal{Q}$	✓			

Corroborates that presuppositional:
- Universal inference under *none*.
- Stronger than SIs.

Strong triggers

Imagine a school auditorium full of high schoolers. You're discussing with your
fellow teachers the smoking habits of assembled student body ($n = 100$)...

(12) Two of those students smoke MARLBOROS too!

What does this presuppose? Before evaluating: notice it has two parses:
- Two of those 100 students [[smoke MARLBOROS] too]!
  - $\exists^2 x \, . \, \mathbf{student}.x \wedge \mathbf{smoke}.\mathbf{marl} \, x \wedge$
    $\exists y \, . \, y \neq \mathbf{marl} \wedge \mathbf{smoke}.y \, x$
- [[Two of those 100 students smoke MARLBOROS] too]!
  - $\exists^2 x \, . \, \mathbf{student}.x \wedge \mathbf{smoke}.\mathbf{marl} \, x \wedge$
    $\exists^2 x \exists y \, . \, \mathbf{student}.x \wedge \mathbf{smoke}.y \, x \wedge y \neq \mathbf{marl}$

(13) Two of those 100 students [[smoke MARLBOROS] too]!

(14) [[Two of those 100 students smoke MARLBOROS] too]!

(14) doesn't require any promiscuous smokers.
- Functions as a reply to (presupposes) something like e.g. *two of those 100 students smoke Newports.*
- No predicative presupposition triggered. Nothing surprising.

(13) requires 2 individuals who smoke 2 brands.
- Probably requires focused subject DP (newness). We'll bracket.
- Triggered object is of predicative type—viz. $\langle s, \langle e, t \rangle \rangle$.
- And seems to function as a reply to (presuppose) something like e.g. *all of those 100 students smoke Newports.*

Universal presuppositions can result when a strong trigger associates with an object of predicative type in the scope of a quantifier.

Some questions:
- What's the data?
- What's a reasonable semantics for it?
- Which accounts of projection fare best?

We'll use *also* from here on out.
- Works similarly to *too*.
- Less chance for syntactic ambiguity.
- *Too* helps see importance of triggered object's predicativeness.

Data

(15)   Just five of those 100 students smoke. Those five all smoke Newports.

- Nuclear scope:
  #(Unfortunately) two of those 100 students also smoke MARLBOROS.
  ✓(Unfortunately) two of those five students also smoke MARLBOROS.

- Restrictor (assume there are some Marlboro smokers):
  #Of those 100 students, two of the ones who also smoke MARLBOROS are boys.
  ✓Of those five students, two of the ones who also smoke MARLBOROS are boys.

(16)   Each of those 100 students smokes. They all smoke Newports.

- Nuclear scope:
  ✓Fortunately, none of those 100 students also smokes MARLBOROS.
- Restrictor:
  ✓Of those 100 students, two of the ones who also smoke MARLBOROS are boys.

Inference persists in non-upward monotone contexts:

(17) Excuse me, sir. Do any of those 100 students also smoke MARLBOROS?

(18) If any of those 100 students also smoke MARLBOROS, the principal will be pretty upset.

(19) I highly doubt that any of those 100 students also smoke MARLBOROS.

• If CG $\models$ $[\![$many of those students don't smoke$]\!]$ $\rightsquigarrow$ #

Non-cancellable:

(20) I highly doubt any of those 100 students also smoke MARLBOROS. #And in fact, some of them don't smoke at all.

Imagine we're at a murder trial. There are 10 defendants being tried together. The defense lawyer rises to make his closing argument...

(21)   Ladies and gentlemen of the jury: two of these ten defendants$_i$ [also [killed their$_i$ FATHER'S mistress]]
        #The rest are innocent of any crime.

Presupposes ⟦every defendant$_i$ murdered a mistress of his$_i$ relative's⟧
  • But that's not all..
  • (21) presupposes every defendant has a relative(?) with a mistress

⤳ Predicative presuppositions normally discharged non-universally are discharged universally when associated with a strong trigger.

	Satisfaction	DRT	Trivalent	@WkTr	StrTrigs
∀ projection from NS of *each/none*	✓		✓	✓	✓
∀ projection from NS of non-∀$\mathcal{Q}$s	✓				✓
∀ projection from restrictor of a $\mathcal{Q}$	✓				✓

A much less subtle pattern of projection than for weak triggers.

Some semantics

$\llbracket also_{\langle set, set \rangle} \rrbracket$:

- $\lambda P \lambda w \lambda x \,.\, P\,w\,x\, \wedge$
  $\partial[\lambda w \lambda y \,.\, \exists Q \in \mathtt{alt}^c_P \,.\, Q\,w\,y \wedge Q \neq P]$
- ∂: set of individuals x such that x did some proper alternative to P.
- Fairly vanilla.

also smokes MARLBOROS triggers the presuppositional object...

- $\lambda w \lambda y \,.\, \exists Q \in \mathtt{alt}^c_{\mathbf{smoke.marl}} \,.\, Q\,w\,y \wedge Q \neq \mathbf{smoke.marl}$
- $\mathtt{alt}^c_{\mathbf{smoke.marl}}$ contains objects like $\mathbf{smoke.newports}$ &c.

(22) Some student also smokes MARLBOROS

LC at the trigger is $\lambda w \lambda x \,.\, w \in \sigma \wedge \mathbf{student}\, w\, x$

Generalized entailment gives...
- $\forall w \forall x\,.$
  $w \in \sigma \wedge \mathbf{student}\, w\, x \rightarrow$
  $\exists Q \in \mathtt{alt}^c_{\mathbf{smoke.marl}} \cdot Q\, w\, y \wedge Q \neq \mathbf{smoke.marl}$

"The Common Ground must entail that every student smokes something besides Marlboros."
- $\forall\exists$... seems correct.

Local Contexts predicts universal presupposition identical to above for...
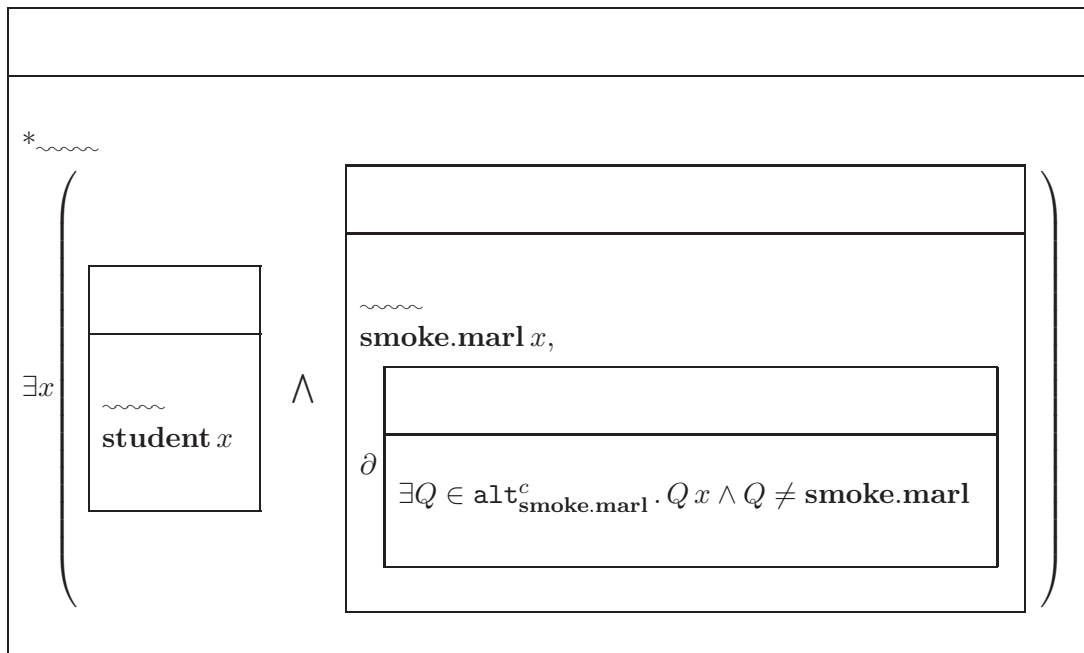- NS of non-universal quantifiers (cf. though Schlenker 2009).
- Restrictor positions.

	Satisfaction	DRT	Trivalent	@WkTr	StrTrigs
$\forall$ projection from NS of $each/none$	✓		✓	✓	✓
$\forall$ projection from NS of non-$\forall \mathcal{Q}$s	✓				✓
$\forall$ projection from restrictor of a $\mathcal{Q}$	✓				✓

Theoretical upshots

Bound presupposition can only be resolved within scope of quantifier.
- Universal inferences not derived.
- Predicts infelicity when main DRS has relevant universal proposition.

$$\ast \underset{\sim\sim\sim}{} \quad \exists x \left[\begin{array}{|c|} \hline \\ \hline \underset{\sim\sim\sim}{} \\ \mathbf{student}\, x \\ \hline \end{array} \right] \wedge \left[\begin{array}{|c|} \hline \\ \hline \underset{\sim\sim\sim}{}\\ \mathbf{smoke.marl}\, x, \\ \partial \left[\begin{array}{|c|} \hline \\ \hline \exists Q \in \mathtt{alt}^c_{\mathbf{smoke.marl}} \cdot Q\, x \wedge Q \neq \mathbf{smoke.marl} \\ \hline \end{array} \right] \\ \hline \end{array} \right]$$

Characteristic inflexibility...
- Only derives universal inferences for NS of *each*, *none*.
- Presuppositions by design much weaker when triggered in restrictor/in NS of non-$\forall$ $\mathcal{Q}$.
- Absent a strengthening mechanism, these data aren't derived.

$\rightsquigarrow$ apparatus George uses to derive Chemla's weak-trigger data can't account for strong-trigger data in an obvious way.

Accounting for Chemla's data

L(ocal) A(ccommodation): $\approx$ add presupposition as asserted conjunct.
• Motivated in e.g. Heim (1983).

Stipulation/conjecture:

• Lack of atb. $\forall$ inference for weak predicative triggers due to LA.

  – $\mathcal{Q}_{-\forall}N.\underline{P}P' \overset{\mathsf{LA}}{\longmapsto} \mathcal{Q}_{-\forall}N_{\sim}.\underline{P}P'$ or $\mathcal{Q}_{-\forall}N._{\sim}\underline{P}P'$

• *Each* and *none* don't allow LA when presupposition triggered in NS but do when triggered in restrictor.

  – $\mathcal{Q}_{+\forall}N.\underline{P}P' \overset{\pi}{\longmapsto} \forall x\,.\,Nx \rightarrow Px$

• "Strong" PPOs associated with triggers like *too* and *also* resist LA.

  – cf. Kripke (2009): resist *any* sort of accommodation.

  – "Super-Buoyant" in sense of Geurts (2000).

	Satisfaction	Satisfaction+LA	StrTrigs	@WkTr
$\forall$ projection from NS of *each/none*	✓	✓	✓	✓
$\forall$ projection from NS of non-$\forall \mathcal{Q}$s	✓		✓	
$\forall$ projection from restrictor of a $\mathcal{Q}$	✓		✓	

Unfortunately: isn't much of a "solution"..

Moreover: non-$\forall$-$\mathcal{Q}$ sentences do seem to presuppose something.
• Speculate: LA in restrictor $\rightsquigarrow$ presuppose restrictor's non-emptiness?

Imagine a Common Ground as before: every student sitting in an auditorium is a smoker of Newports.

(23) Two of the history majors in that group also smoke MARLBOROS.

What this seems to presuppose *isn't* that every history major smokes something besides Marlboros.

Rather: that every individual in the domain *previously discussed*—viz. the students—smokes Marlboros (much stronger).

Problem tractable within Local Contexts (Schlenker, p.c.)
- Assume a SI which yields something $\approx$*two of the history majors ($_{SI}$ and no one else) in that group also smoke* MARLBOROS.
- $\rightsquigarrow$ LC is set of students in context.

Might help DRT (ask if curious).

Quantified data helps decide between competing accounts of projection.
- Chemla's data suggested a subtle picture.
- Data from strong triggers suggest a less subtle picture.

DRT has a pretty hard time dealing with the data all around.

George's trivalent theory does ok for weak triggers but struggles with strong triggers.

Problem at least tractable in a Satisfaction Theory.

Moral: theories which generate strong presuppositions then weaken them may be better than ones which start weak.

Thank you!

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