Gaps in the interpretation of pronouns

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SALT 28

Background

Puzzle: universal/existential reading of donkey anaphora

(1) a. Every farmer who owns a donkey$_1$ cherishes it$_1$.
⇜⇝ cherishes **all** of his donkeys.
b. Every customer with a credit card$_1$ pays with it$_1$.
⇜⇝ pays with **one** credit card.

Questions:

- How does the pronoun access its referent?
- Where does the ambiguity originate?

Main claims

A. The readings surface in non-quantified environments, e.g. simple conjunctions.
B. The ambiguity is local to the pronoun, i.e. implicit quantification takes narrow scope.
C. The ambiguity arises when the pronoun must choose between multiple referential targets.

Type-shifting accounts

(Rooth, 1985; Root, 1986; Groenendijk et al., 1991; Champollion et al., 2017)

Account:

- Scope-extension rule (=SE rule) for cross-clausal anaphora:

  "Some A$_1$ is B; it$_1$ is C" $\rightsquigarrow \exists x : A(x), (B(x) \wedge C(x))$

- Two recipes for creating dynamic quantifiers:

(2) Q(restrictor)(scope)
a. Existential: Q(restrictor) (restrictor $\wedge$ scope)
b. Universal:
Q(restrictor) ($\neg$ (restrictor $\wedge$ $\neg$scope))

Consequence The validity of the type-shifting accounts is tied to the validity of the *scope-extension rule*.

#1: Narrow pseudo-scope reading

(3) a. Every citizen who has a valid ID$_1$ shows it$_1$ whenever she is asked to.
b. Every father who received a chocolate bar$_2$ gave a piece of it$_2$ to each of his kids.

t_0 t_1 t_2

Reading: $\forall \gg$ whenever $\gg \exists$

Weakest possible reading under the type-shifting accounts:

$\forall \gg \exists \gg$ whenever

#2: Universal readings across conjunctions

Bets:

- Winning conditions = Truth-conditions
- No scalar implicatures in their scope

(4) I bet you 10$ that some students will fail the test.
All students fail ⇒ Speaker wins

Universal reading.

(5) Bet+biasing items
a. I bet you 10$ that Mary has an umbrella and that she left it at home today.
b. I bet you 10$ that Charles has a hat and that he is not wearing it right now.

The bet is lost!

Narrow pseudo-scope also surfaces in conjunctions:

(6) I bet you 10$ that Charles received a chocolate bar and that he gave a piece of it to all of his children.

Analysis

When multiple referential targets are available, the pronoun has vague reference. #1 and #2 follow from vagueness projection and resolution rules.

Analysis

I. E-type pronoun (Cooper, 1979) + Vagueness

(7) *it* $\rightsquigarrow$ {f (donkey he owns) | f is a choice function}

II. Vagueness projects as in alternative semantics (Kratzer et al., 2017).

(8) a. $[\![\mathbf{f}\ \mathbf{x}]\!]^{g,w} = \{f(x) \mid f \in [\![\mathbf{f}]\!]^{g,w}, x \in [\![\mathbf{x}]\!]^{g}\}$
b. $[\![\lambda_i\ \mathbf{p}]\!]^{g,w} = \{f \in D_{et} \mid \forall x,\ f(x) \in [\![\mathbf{p}]\!]^{g[i/x],w}\}$
$\rightsquigarrow$ different values for i may use different alternatives.

III. Trivalent conventions

true	{true}
false	{false}
#	{true, false}

IV. Križ's maxim of quality for trivalent propositions (using an idea of Champollion, 2016)

Maxim of quality.
Only utter sentences that are true enough

S true enough in *w* with respect to issue *I*
iff $\exists w'$, *S* is true in w' and $w \approx_I w'$

Conclusion

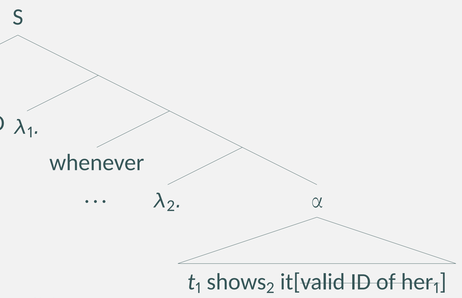
- Our data point to the inadequacy of the SE rule, a central tenet of DS.
- The ∃/∀ ambiguity is more general than has been reported.
- Empirically, the predictions of the analysis match those of Champollion et al., 2017…
- …except in conjunction and low pseudo-scope cases.

Predictions

The vagueness surfaces regardless of the environment.

(9) a. A donkey came and …it[donkey that came] brayed
b. $[\![(9a)]\!]^{g,w}$ =
{f (donkey that came) brayed in w | $f \in CH$}
c. **true** if all donkeys that came brayed
false if no donkeys that came brayed
otherwise

It interacts with λ-abstraction to create narrow pseudo-scope.



Truth/falsity conditions

- $[\![\mathrm{S}]\!]^{g,w}$ = **true**
iff $\forall x \in$ citizen$'$, $\forall t \in [\![$whenever$]\!]$, $[\![\alpha]\!]^{g[1/x,2/t],w}$ = **true**
- $[\![\mathrm{S}]\!]^{g,w}$ = **false**
iff $\exists x \in$ citizen$'$, $\exists t \in [\![$whenever$]\!]$, $[\![\alpha]\!]^{g[1/x,2/t],w}$ = **false**

Weakest reading possible: $\forall \gg$ whenever $\gg \exists$

Harder problems

(Kanazawa, 1994; Foppolo, 2008)

- Reading preferences

Environment	Preferred readings
some, no, *and*	∃
every	∀

- Negations and privatives flip preferences
- ∀ easier to override.