

## Dynamische Interventionen

### Eine dynamische Perspektive auf Interventionseffekte bei NPE-Lizenzierung

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## Motivation und Problem

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## Negativpoläre Elemente (NPE)

- (1)a. Pat didn't lift a finger to help me.  
b. \* Pat lifted a finger to help me.

NPEs brauchen einen Lizenzierer.

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## Negativpoläre Elemente (NPE)

- (1)a. Pat didn't lift a finger to help me.  
b. \* Pat lifted a finger to help me.

NPEs brauchen einen Lizenzierer.

- (2)a. Negation: not, no one, without S  
b. Andere: few N, hardly, ...  
c. Adversative Prädikate: doubt, deny, ...  
d. ...

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## Interventionseffekte

Manche Elemente blockieren die Lizenzierung.

- (3)a. Kim didn't give any apple to every teacher.  
b. \* Kim didn't give every teacher any apple.

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## Interventionseffekte

Manche Elemente blockieren die Lizenzierung.

- (4)a. Pat didn't give me any apple.  
b. Pat didn't give the teacher any apple.  
c. Pat didn't give a teacher any apple.  
d. \* Pat didn't give every teacher any apple.  
e. \* Pat didn't give at most 2 teachers any apple.

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## and vs. or

Postal (2005):

- (5)a. I did **not** investigate **any** verbs **or** **any** nouns.
- b. I did **not** investigate that verb **or** **any** nouns.
- c. I did **not** investigate **any** verbs **or** that noun.
- (6)a. \* I did **not** investigate **any** verbs **and** **any** nouns.
- b. \* I did **not** investigate that verb **and** **any** nouns.
- c. \* I did **not** investigate **any** verbs **and** that noun.

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## Überblick

1. Motivation und Problem
2. Probleme für repräsentationelle Theorien
3. Dynamische Semantik
4. Dynamische Intervention
5. Ausblick

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## Probleme für repräsentationelle Theorien

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## Repräsentationelle Theorie

*Immediate Scope Constraint* (Linebarger, 1980):

In der semantischen Repräsentation eines Satzes muss ein NPE im unmittelbaren Skopus eines Lizenzierers stehen.

- \* Pat didn't give **every** teacher **any** apple.  
 $\neg \forall x(\text{teacher}(x) \rightarrow \exists y(\text{apple}(y) \ \& \ \text{give}(\mathbf{p}, x, y)))$
- Pat didn't give **a** teacher **any** apple.  
 $\neg \exists x(\text{teacher}(x) \ \& \ \exists y(\text{apple}(y) \ \& \ \text{give}(\mathbf{p}, x, y)))$
- Pat didn't invite Kim **or** **any** stranger.  
 $\neg (\text{invite}(\mathbf{p}, \mathbf{k}) \ \text{or} \ \exists y(\text{stranger}(y) \ \& \ \text{invite}(\mathbf{p}, y)))$

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Nicht-Intervenierer    Intervenierer

Determiner	<i>a, some</i> ( $\exists x\phi$ )	<i>every</i> ( $\forall x\phi$ )
	<i>two</i>	<i>at most two</i>
Konnektor	<i>or</i> ( $\phi$ <b>or</b> $\psi$ )	<i>and</i> ( $\phi$ <b>&amp;</b> $\psi$ )

Problem: kein fundamentaler Unterschied in der Repräsentation von Intervenierern und Nicht-Intervenierern.

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## Dynamische Semantik

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## Satzübergreifende Anaphern

- \* A farmer owns a donkey **or** he vaccinates it.  
 $\exists x[\text{farmer}(x) \ \& \ \exists y[\text{donkey}(y) \ \& \ \text{own}(x, y)]]$   
**or**  $\text{vaccinate}(x, y)$
- A farmer owns a donkey **and** he vaccinates it.  
 $\exists x[\text{farmer}(x) \ \& \ \exists y[\text{donkey}(y) \ \& \ \text{own}(x, y)]]$   
**&**  $\text{vaccinate}(x, y)$
- Every** farmer who owns a donkey vaccinates it.  
 $\forall x[[\text{farmer}(x) \ \& \ \exists y[\text{donkey}(y) \ \& \ \text{own}(x, y)]]$   
 $\rightarrow \text{vaccinate}(x, y)]$

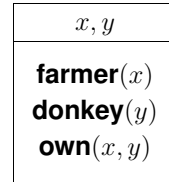
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## DRT, Kamp and Reyle (1993)

### Discourse Representation Theory

A farmer owns a donkey.

$\exists x[\text{farmer}(x) \ \& \ \exists y[\text{donkey}(y) \ \& \ \text{own}(x, y)]]$

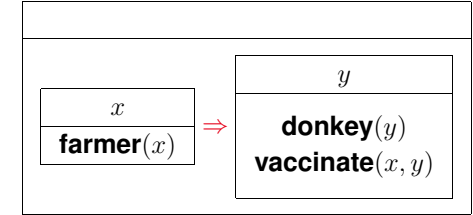


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## DRT, Kamp and Reyle (1993)

Every farmer vaccinates a donkey.

$\forall x[\text{farmer}(x) \rightarrow \exists y[\text{donkey}(y) \ \& \ \text{vacc.}(x, y)]]$



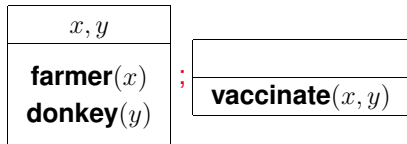
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## Dynamik

A farmer owns a donkey **and** he vaccinates it.

$\exists x[\text{farmer}(x) \ \& \ \exists y[\text{donkey}(y) \ \& \ \text{own}(x, y)]]$   
**&**  $\text{vaccinate}(x, y)$

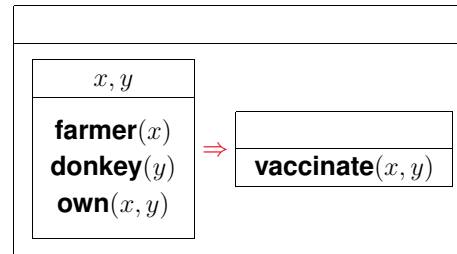


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## Dynamik

**Every** farmer who owns a donkey vaccinates it.

$\forall x[[\text{farmer}(x) \ \& \ \exists y[\text{donkey}(y) \ \& \ \text{own}(x, y)]]$   
 $\rightarrow \text{vaccinate}(x, y)]$

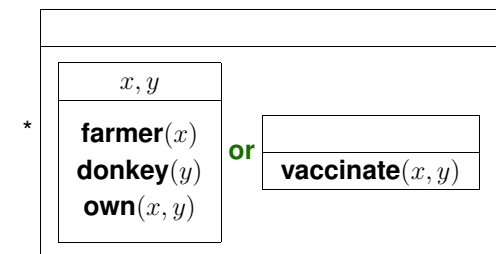


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## Dynamik

\* A farmer owns a donkey **or** he vaccinates it.

$\exists x[\text{farmer}(x) \ \& \ \exists y[\text{donkey}(y) \ \& \ \text{own}(x, y)]]$   
**or**  $\text{vaccinate}(x, y)$



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# Dynamische Intervention

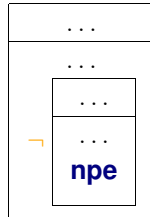
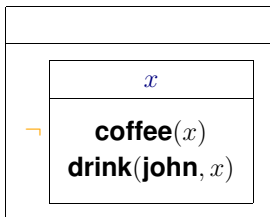
Nicht-Intervenierer	Intervenierer
$a, \text{some } (x)$	$\text{every } (K \Rightarrow K')$
$\text{two } (X)$	$\text{at most two } (\exists x K K')$
$\text{or } (K \text{ or } K')$	$\text{and } (K; K')$

## NPE-Lizenzierung

- **Lizenzierer:** Eine DRS  $K$  ist ein Lizenzierer, wenn sie Teil einer DRS der Form  $\neg K$  ist. (oder  $K \Rightarrow K'$ )
- **NPE-Lizenzierung:** Ein NPE muss innerhalb einer **lizenzierenden DRS** stehen, wobei kein **dynamischer Operator** dazwischen stehen darf.

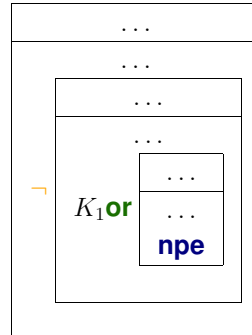
## Beispiel ohne Intervenierer

John didn't drink any coffee.



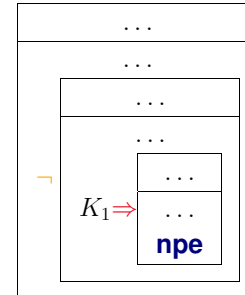
## Beispiel ohne Intervenierer

John didn't drink wine or any coffee.



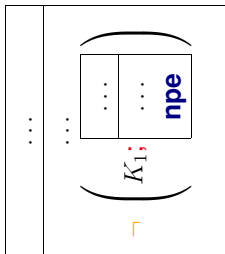
## Beispiel mit Intervenierer

\* I don't think that every student read any book.



## Beispiel mit Intervenerer

\* John didn't drink wine and any coffee.



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## Ausblick

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## Ausblick

- DRT liefert genau die notwendigen Unterscheidungen
- Repräsentationelle Definition der Intervenerer
- Warum dynamische Operatoren?

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