Creating a Family: Transfer of Possession Verbs (Slides).

Angelika Kratzer

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Creating a family: transfer of possession

Angelika Kratzer
Modality across categories
Barcelona, November 5, 2015
Prologue
Lexical representations
Where grammar and (non-linguistic) cognition meet
No tampering

• Grammars do not allow operations that eliminate arguments, add arguments, or change the argument structure of heads in any way.

• Argument structure is built additively by combining heads with immutable argument structures.

The Event Argument

• To build argument structure, predicates of events are conjoined.

• Conditions are successively placed on the event described: information about the participants of the event, the time, location, manner, etc.
Give, already complex

- \([[[...\sqrt{\text{give} ...}]]] =\)
  \(\lambda x \lambda y \lambda z \lambda e \exists s (\text{agent}(e)(z) \& \text{have}(x)(y)(s) \& \text{cause}(s)(e))\)

- By the time we hear it, the verb *give* spells out three meaning components that are shared with many other verbs.
Recyclable pieces

- $\lambda z \lambda e \text{ agent}(e)(z)$
  $\lambda x \lambda y \lambda s \text{ have}(x)(y)(s)$
  $\lambda s \lambda e \text{ cause}(s)(e)$

- Transfer of Possession Core (TPC)?
  $\lambda x \lambda y \lambda e \exists s \ (\text{have}(x)(y)(s) \ & \text{cause}(s)(e))$
The jobs of lexical representations

• Characterize the truth-conditional contribution of lexical items.

• Interface with morphosyntax.

• Interface with systems of cognition outside the language faculty.
From the language faculty?

- Variables.
- Logical symbols: binders, quantifiers, connectives.
- The predicate-argument relation.
Non-logical privileged concepts

• Relational concepts related to Agency, Possession, Causation, Space, Time, Evidentiality, Modality.

• Those concepts can be expressed by the functional vocabulary of natural languages.
Non-logical privileged concepts

• Relational concepts related to Agency, Possession, Causation, Space, Time, Evidentiality, Modality.

• Are those concepts rooted in Core Cognition (Carey) or Core Knowledge (Spelke)?
From encyclopedic knowledge

The meanings of thousands and thousands of category-neutral roots like √lead, √leap, √lean, √leave, ...
Building a family

Generating possible transfer of possession verbs
The family

Give, hand, lend, loan, pass, rent, sell, allocate, allow, bequeath, grant, offer, owe, promise, tell, show, ask, teach, read, write, quote, cite, forward, mail, send, ship, fling, flip, kick, lob, slap, shoot, throw, toss, bring, take, e-mail, fax, radio, wire, telegraph, telephone, ...

• From Rappaport Hovav & Levin (2008).
Adding a small clause

- $\sqrt{\text{throw [Harriet [TPC the pencil]]}}$

- $\lambda e \text{ throw(e)} \oplus \lambda e \exists s \ (\text{cause}(s)(e) \& \text{have}(\text{the pencil})(\text{Harriet})(s))$

- TPC: Transfer of Possession Core. Might be decomposed further, separating the causative and the possessor component (Harley 2002).
Throw Harriet the pencil

- $\sqrt{\text{throw } [\text{Harriet } [\text{TPC the pencil}]]_{\text{small clause}}}$

- TPC, first try
  $\lambda x \lambda y \lambda e \exists s (\text{cause}(s)(e) \& \text{have}(x)(y)(s))$. 

Theme  Goal  Event
Objection

• That I throw Harriet the pencil does not imply that she catches it. She might not end up with a pencil.


• Not predicted by our current core.
Goal

• How can we generate the whole family of possible transfer of possession verbs from root meanings plus a common TPC (Transfer of Possession Core)?

• Main challenge: Verbs with opaque object positions.
Failure of Existential Exportation

• allocate, allow, bequeath, grant, offer, owe, promise, ...

• I may owe you a horse without there being a horse I owe you. I may offer you a bench without there being a bench I offer you. Etc.

• Not predicted so far.
The standard fix

• Introduce a modal operator into the core (Koenig and Davis 2001).

• Make sure direct objects can remain in the scope of that modal operator by lifting the type of the direct object (Zimmermann 1993, 2005, 2006; Moltmann 1997, 2008; van Geenhoven and McNally 2005; Weir 2011).
Intensional TPC

- $\lambda P \lambda y \lambda e$
  \[ \forall w (w \in f(e) \rightarrow \exists x \exists s (P(x)(w) \& \text{cause}(s)(e)(w) \& \text{have}(x)(y)(s)(w))) \].

- There is a modal operator introducing quantification over possible worlds.

- The direct object position is of a property type.
## Promise Harriet a rose

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<thead>
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<td>$\lambda e \ (\text{promise}(e) \ &amp;$</td>
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The causative component

Is it still needed? Yes!
Promise Harriet a rose

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Why not simply ...?

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Anything missing?

• Peter promised Harriet a rose.

• In all worlds where Peter’s promise is honored, Harriet has a rose.

• This establishes a necessary connection between the honored promise and Harriet’s having a rose. Enough?
A monotonicity puzzle

• Peter to Harriet: “I promise you a rose from your garden.”

• True: Peter promised Harriet a rose from her garden.

• True: Peter promised Harriet a rose.

• False: Peter promised Harriet a garden.
Wrong prediction

• Peter to Harriet: “I promise you a rose from your garden.”

• Every world where Peter’s promise is honored is a world where Harriet has a rose from her garden, hence is a world where she has a rose, but is also a world where she has a garden.
Right prediction

• Peter to Harriet: “I promise you a rose from your garden.”

• Every world where Peter’s promise is honored is a world where Harriet has a rose from her garden - and hence a rose - as a result of Peter’s promise.
Right prediction

• Peter to Harriet: “I promise you a rose from your garden.”

• Not every world where Peter’s promise is honored is a world where Harriet has a garden as a result of Peter’s promise.
A split in the family?

Two cores? No!
Sneak Preview

• All verbs in the family need to be able to combine with the intensional core.

• Failure of Existential Exportation can affect any verb in the family.

• With the right modal operator, the extensional core is no longer needed.
Failure of Existential Exportation

Rooth - Zimmermann examples.
Ball bearings

Mats and Ede jointly buy a box with 100 ball bearings. Mats pays 75% of the purchase price, with the understanding that 75% of the ball bearings are his. The box of ball bearings ends up in the basement untouched, neither owner claims their share. Rooth in Zimmermann 1993.

(1) Mats owns 75 ball bearings.
(2) There are 75 ball bearings Mats owns. F
Variations

Mats wants to buy 75 ball bearings from Ede. Ede hands him a box with 100 ball bearings with the understanding that he pays for 75 and gets 25 for free. He does pay for 75 ball bearings and takes the whole box.

(3) Ede sold Mats 75 ball bearings.
(4) There are 75 ball bearings that Ede sold Mats. F
Variations

Mats wants to buy 75 ball bearings from Ede. Ede hands him a box with 100 ball bearings with the understanding that he pays for 75 ball bearings and gets 25 for free. He pays for 75 ball bearings and takes the whole box.

(5) Ede gave Mats 25 ball bearings for free.
(6) There are 25 ball bearings that Ede gave Mats for free. F
Assessment

• Existential Exportation can fail with any verb of possession, including all transfer of possession verbs.

• All transfer of possession verbs must be able to combine with the intensional TPC.
Question

• If any transfer of possession verb can combine with the intensional TPC, we may wonder about the nature of the modal operator.

• Can a single type of modal operator satisfy the needs of all verbs in the family in all of their interpretations? *Promise, offer, owe, bequeath*, etc.
Promise Harriet a rose

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Modality for the 21st century

Factual domain projection
Projecting modal domains

- Hacquard 2006 & later.

- Modal domains are projected from event arguments - the modal anchors - following fixed recipes.
Factual domain projection

- A Yeti must have walked by.

- $f_{\text{fact}}(s) = \text{the set of worlds that have counterparts of } s.$

- Defeasible normalcy constraints.
Factual domain projection

• All modal alternatives have a duplicate of the modal anchor.

• Defeasible normalcy constraints: all alternatives preserve the laws of nature and other general facts about the actual world.

• Those normalcy constraints do not seem to be represented in the grammar.
Norm-guided domain projection

- Peter promised Harriet a rose.

- $f_{\text{norm}}(e) =$ the set of worlds where the norms that are inherently associated with $e$ are satisfied.

- $f_{\text{norm}}(\text{promise}) =$ the set of worlds where the promise is honored.

- Defeasible normalcy constraints.
Anchor centered domains

• All worlds projected from an anchor have counterparts of the anchor.

• Without further lexical restrictions: **Factual domain projection**.

• With lexically imposed normative restrictions: **Normative domain projection**.
Sublexical modality

Factual domain projection plus normative conditions
(7) Lord Peter offered Harriet a cup of tea.

• Modal domain: worlds that have duplicates of the offer, the offer is accepted by Harriet and honored by Lord Peter.

• In all worlds of the domain, the offer causes Harriet to have a cup of tea.
Bequeath

(8) Her aunt bequeathed her a violin.

• Modal domain: worlds with duplicates of the bequest where the terms of the bequest have been carried out.

• In all worlds of the domain, the bequest causes Harriet to have a violin.
(9) Mats bought 75 ball bearings.

- Modal domain: worlds with duplicates of the sale where the ball bearings have been divided up between Mats and Ede.

- In all worlds of the domain, the purchase caused Mats to have 75 ball bearings.
Give for free

(10) Ede gave Mats 25 ball bearings for free.

• Modal domain: worlds with duplicates of the giving event where the 25 free ball bearings have been uniquely determined.

• In all worlds of the domain, Ede’s action caused Mats to have 75 ball bearings.
(11) Ede threw Mats a pencil.

- Modal domain: worlds with duplicates of the throwing event where the pencil reached its goal.

- In all worlds of the domain, Ede’s action caused Mats to have the pencil.
Generalization

The modal domain for transfer of possession verbs consists of worlds that have duplicates of the event described by the verb, where whatever obligations were established by that event are honored, where whatever rights were conferred by that event are exercised, where whatever goal was determined by the event has been reached, and where the object that is being transferred is uniquely determined.
Reaping the consequences

A single Transfer of Possession Core
Major benefit

If a transfer of possession verb describes events that do not establish obligations and do not confer rights, and if the object of transfer is uniquely determined, modal domain projection with transfer of possession verbs boils down to factual domain projection.
**Hand and its kin**

(12) Ede handed Mats 25 ball bearings.

- Modal domain: worlds with duplicates of Ede’s action. In all of those worlds Mats is handed the exact same 25 ball bearings as in the actual world.
(13) I offered him a spectacular view of Chimborazo through my binoculars. (But he declined.)

(14) The flight over the Andes offered him a spectacular view of Chimborazo. (# But he missed it since he had pulled the shades down.)
More offerings

(15) The breakfast buffet offered us a bowl of porridge.

(16) Her junk mail folder was cluttered with messages offering her substantial sums of money.
Conclusion

• There is a single common core that can generate the family of transfer of possession verbs, while accounting for rather subtle differences between the family members.

• Modal domain projection from the event argument made it possible for the analysis to be responsive to individual differences between verbs.
Building the verbs

Overt prefixes: A case-study in German prefix verbs
The prefix *zu-*

(17) Den Ball *zu* ihr werfen  
The ball *to* her throw  
‘To throw the ball to her’

(18) Ihr *zu* den Ball *zu*-werfen  
Her.DAT the ball to-throw  
‘To throw her the ball’
Compositional *zu-*

(18) Ihr den Ball *zu-*werfen
    Her.DAT the ball to-throw
    ‘To throw her the ball’

\[ \lambda P \lambda y \lambda e \]

\[ \forall w (w \in f(e) \rightarrow \exists x \exists e' (P(x)(w) \& \text{cause}(e')(e)(w) \& \text{reach}(x)(y)(e')(w)))) \]
Compositional **zu-**

- Zuschicken (‘send’), zuflüstern (‘whisper’), , zurufen (‘call’), zuschreien (‘scream’), ...

- Unaccusatives: zufliegen (‘fly’), zufallen (‘fall’), zufließen (‘flow’), zulaufen (‘run’) ...

- Many non-compositional, idiomatic, cases.
Compositional *er-*

(19) Sie hat uns eine Goldmedallie erlantzt.
She has us.DAT a gold medal er-danced
‘Her dancing got us a gold medal.’

\[ \lambda P \forall y \lambda e \\
\forall w (w \in f(e) \rightarrow \exists x \exists e' (P(x)(w) \& \text{cause}(e')(e)(w) \& \text{got}(x)(y)(e')(w))) \]
Compositional er-

(20) Er hat sich ein Vermögen er-heiratet.
He has REFL.DAT a fortune er-married
‘He got himself a fortune through marrying’

\[ \lambda P \lambda y \lambda e \]
\[ \forall w (w \in f(e) \rightarrow \exists x \exists e'(P(x)(w) \& \text{cause}(e')(e)(w) \& \text{got}(x)(y)(e')(w))). \]
Compositional *er>*-

- erschreiben (‘write’), erheulen (‘howl’), erstinken (‘stink’), erlächeln (‘smile’), erschwindeln (‘swindle’). . . .

- Any unergative activity verb is fine in this construction with a little imagination.

- Many non-compositional, idiomatic cases.
Compositional $an$-

(21) Er hat sich einen Bauch angefressen.
He has REFL.DAT a belly an-eaten
‘His pigging out got him a belly’

$\lambda P\lambda y\lambda e$
$\forall w(w \in f(e) \rightarrow \exists x \exists s(P(x)(w) \& \text{cause}(s)(e)(w) \& \text{have}(x)(y)(s)(w)))$. 
Assessment

• German has overt and non-overt compositional TPCs, with subtle, localizable, meaning differences.

• The available cores can combine with any root that produces a semantically acceptable result and doesn’t violate any general morphosyntactic or morphophonological constraints.
Open question

- What is the force that tells, say, a root like \( \sqrt{offer} \) to combine with an affix that turns it into a transitive or ditransitive verb?

- Are transitivizing and ditransitivizing affixes needed to turn category-neutral roots into verbs? Are they ‘verbalizing’ affixes?