Deconstructing the Internal/External Dichotomy

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What is an Unergative?

•An Unergative verb is a special kind of intransitive verb. Semantically, unergative verbs have a subject perceived as actively initiating or actively responsible for the action expressed by the verb.

•In English *run*, *talk* and *resign* are unergative verbs. In syntax, unergative verbs are characterized as verbs with an external argument. (See unaccusative verb)

Glottopedia, accessed 09.01.2018

(http://www.glottopedia.org/index.php/Unergative_verb)

(Definition from the *Utrecht Lexicon of Linguistics*)

The Classical Intuition

For some intransitives, the single argument behaves more like the *internal* argument of a transitive verb (unaccusatives); for other intransitives, the single argument behaves more like the *external* argument of a transitive verb (unergatives).
(Perlmutter 1978)

The Government and Binding (GB) Implementation
(i) Internal vs. External argument is a primitive binary distinction with syntactic implications.
(ii) Verbs are listed with subcategorization and basic theta role information in their lexical entry.
(see also Levin and Rappaport Hovav 1995)

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[A] Individual lexical items seem to alternate (Unerg-intrans vs. Transitive version with cognate object) but also (Unerg-intrans vs. Unacc-intrans). (Noticed already in Perlmutter 1978).

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[B] Different diagnostics can often pick out different bipartitions within a single language.

[C(i)] The problem of translation I: verbs with apparently the same conceptual content seem to get classified differently from language to language.

[C(ii)]The problem of translation II: Different languages also use different morphological devices to productively create members of the different classes.

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Consider for example the descriptive implicational hierarchy in Sorace (2000):

The Auxiliary Selection Hierarchy (ASH) :

CHANGE OF LOCATION > CHANGE OF STATE > CONTINUATION OF STATE > STATE > UNCONTROLLED PROCESS > CONTROLLED PROCESS (MOTIONAL) > CONTROLLED PROCESS (NON-MOTIONAL) (> TRANSITIVES)

Or Dowty's (1990) Proto-Role system for mapping between participant semantics to SUBJECT vs. OBJECT.

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- *Present a case study contrasting English and Norwegian to illustrate the problems in C.*

Show an experiment that allows us to circumvent the translation 'loop'.
- *Summarize the lessons for grammar and grammar architecture in this domain*

Part I: Constructions, not Lexical Items

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First, we must use language-specific linguistic diagnostics to discover the the elements of structural meaning that give rise to different behaviour in syntax.

Second, we must embrace the fact that *structures* give reliable entailments, but that lexical items relate flexibly to those structures. We must work with constructons, not with LIs, and only secondarily ask how polysemies are constrained.

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(NB: Regardless of the position we take on whether the lexicon is a module or not, we must in principle *separate grammatically relevant semantic content from conceptual content.*)

Diagnostics for Unaccusativity in Hindi/Urdu (Ahmed (2010))

Test 1, Unlike the unaccusative, the past participle of unergative cannot be used in a **reduced relative**. (after Bhatt 2003)

Test 2, **Impersonal passives** can be formed with unergatives, but not with unaccusatives (after Bhatt 2003).

Test 3, Unergatives pattern with transitives and not unaccusatives with respect to how they enter into the **inabilitative construction**: both transitives and unergatives can only appear in the inabilitative construction with passive syntax. Unaccusatives appear in the inabilitative with active syntax (after Bhatt 2003).

Test 4, Unaccusative intransitives can occur with the **light verb** *jaa-* **'go'** in the completive complex predicate, unergative intransitives may not (Butt, pc).

Test 5, Unergative intransitives can optionally take **ergative case marking** in the perfective to indicate volition (Butt and King 1991, Davison 1999).

Categorical and Alternating Verbs

Consistent Verbs:
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Consistent Verbs:

kaṭ-'be cut' is unaccusative, and

daur-'run' is unergative.

Inconsistent Verbs:

uṛ-'fly', commonly considered to be unergative, and

utar-'descend' commonly considered to be unaccusative

in fact behave differently depending on whether they occur with an animate or inanimate subject.

Hindi/Urdu data (Ahmed 2010)

The 'Unergative' Verb *uṛaa-*'fly'

(1)   ciṛyaa   uṛ-ii
        bird.F.Sg fly-Perf.F.Sg
        'The bird flew.' (animate subject)

(2)   patang   uṛ-ii
        kite.F.Sg fly-Perf.F.Sg
        'The kite flew.' (inanimate subject)

uṛaa-'fly' : Reduced Relative Test

(3) *uṛ-ii   (huu-ii)   ciṛyaa
     fly-Perf.F.Sg be-Perf.F.Sg bird.F.Sg
     'The flown bird' (animate subject)

(4) uṛ-ii   (huu-ii)   patang
     fly-Perf.F.Sg be-Perf.F.Sg kite.F.Sg
     'the flown kite' (inanimate subject)

Hindi/Urdu data (Ahmed 2010)

uṛaa-'fly' Inabilitative Construction Test

(5)   ciṛyaa-se   uṛ-aa   nahı̃̃ ga-yaa
      bird.F.Sg-Inst fly-Perf.M.Sg not   go-Perf.M.Sg
      'The bird was not able to fly.'

(6)   *patang-se   uṛ-aa   nahı̃̃ ga-yaa
      kite.F.Sg-Inst fly-Perf.M.Sg not   go-Perf.M.Sg
      'The kite was not able to fly.'

Hindi/Urdu data (Ahmed 2010)

The 'Unaccusative' Verb *utar-*'**descend'**

(7) laṛkii   paanii-mẽ utṛ-ii
     girl.F.Sg water-in   descend-Perf.F.Sg
     'The girl descended in the water.' (animate subject)

(8) kaStii   paanii-mẽ utr-ii
     boat.F.Sg water-in   descend-Perf.F.Sg
     'The boat descended in the water.' (inanimate subject)

Hindi/Urdu data (Ahmed 2010)

utar- 'descend' : Reduced Relative Test

(9)   paanii-mẽ utr-ii   (huu-ii)   laṛkii
        water-in   descend-Perf.F.Sg be-Perf.F.Sg girl.F.Sg
        'the girl (who was) descended in water'

(10)   paanii-mẽ utr-ii   (huu-ii)   kaStii
        water-in   descend-Perf.F.Sg be-Perf.F.Sg boat.F.Sg
        'the boat (that was) descended in water'

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utar-'descend' Inabilitative Construction Test

(11)   laṛkii-se   paani-mẽ utr-aa   nahĩĩ ga-yaa
        girl.F.Sg-Inst water-in   descend-Perf.M.Sg not   go-Perf.M.Sg
        'The girl could not descend in the water.'

(12)   *kaStii-se   paani-mẽ utr-aa   nahĩĩ ga-yaa
        boat.F.Sg-Inst water-in   descend-Perf.M.Sg not   go-Perf.M.Sg
        'That boat could not descend in the water.'

(13)   laṛkii-se   kaStii   paanii-mẽ nahĩĩ utr-ii
        girl.F.Sg-Inst boat.F.Sg water-in   not   descend-Perf.F.Sg
        'The girl wasn't able to lower the boat into the water .'

Hindi/Urdu: Summary

•Problem A Verb Internal Alternation :
There are verbs like 'fly' which pass the unaccusativity tests of
Bhatt (2003) when they have inanimate subjects, and fail them
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with animate subjects.

•Problem B Different diagnostics make different cuts:
The reduced relative test shows 'descend' patterning with 'cut'
against 'run';

the inabilitative construction shows 'descend' animate patterning
with 'run' and against 'cut';

in addition, Ahmed 2010 shows that Butt's light verb test
distinguishes 'fly', 'descend' and 'run' on the one hand from 'cut'
on the other;

the intransitives that allow ergative case marking are a lexically
constrained subset of the strict unergative class (eg. 'cough' , but
not 'run').

Decomposing the distinction into more primitive ingredients

I think these data do not necessarily drive us into fuzziness, but rather show that 'internal' vs. 'external' argument at the structural semantic level is too rigid and too dichotomous.

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Minimal Innovations: (i) distinguish CAUSE from (TELIC) PROCESS (ii) allow 'composite' thematic participants.
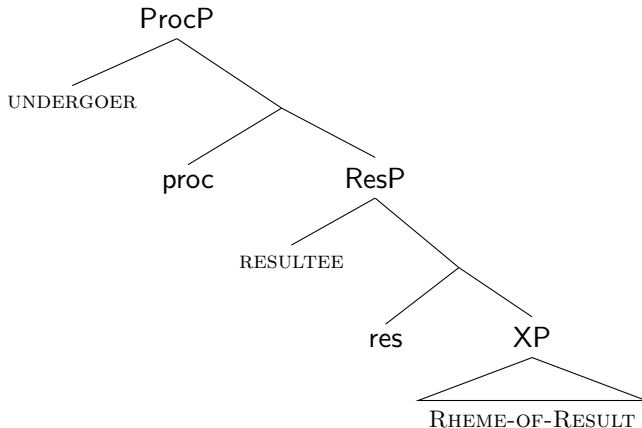
Ramchand 2008: Full Decomposition

InitP

INITIATOR

init   ProcP

UNDERGOER

proc   ResP

RESULTEE

res   XP

RHEME-OF-RESULT
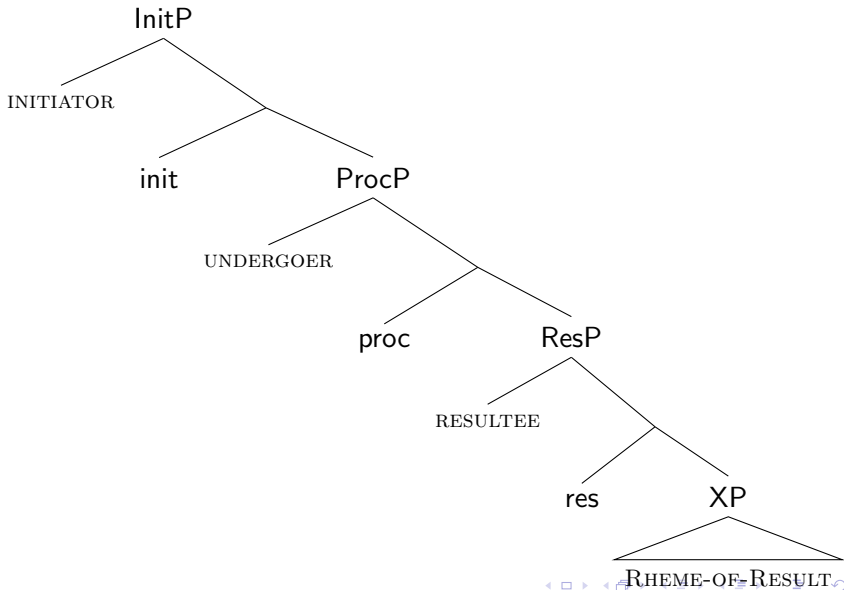
Ramchand 2008: No Result Subevent
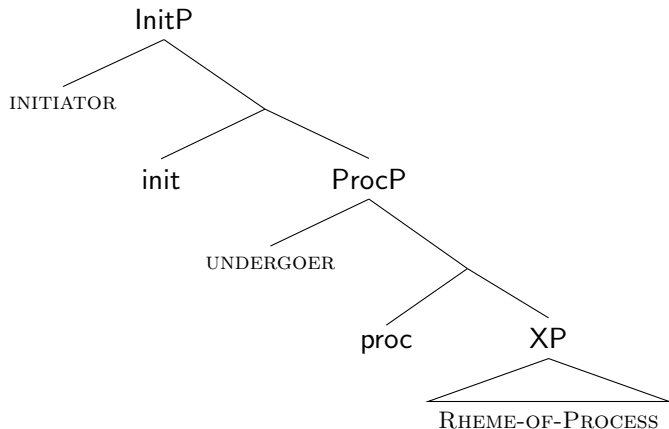
Ramchand 2008: No Initiation Subevent


```
                    ProcP
                   /    \
                  /      \
          UNDERGOER       \
                           \
                   /        \
                  /          \
               proc          ResP
                            /    \
                           /      \
                   RESULTEE        \
                                    \
                          /          \
                         /            \
                       res            XP
                                     /  \
                                    /____\
                              RHEME-OF-RESULT
```

Role Types

(PURE) INITIATOR: argument that possesses the property that causes the eventuality to transpire, often found in canonical transitives

INITIATOR-UNDERGOER: argument that possesses the causing property and also undergoes a change as a result of the eventuality transpiring. Found as the single argument of 'unergatives'.

(PURE) UNDERGOER: argument that undergoes change, found as the object of canonical transitives and as the single argument of unaccusatives.

UNDERGOER-RESULTEE: argument that undergoes change, and in addition ends up holding a newly acquired result state as a result of the change.

(PURE) RESULTEE : holder of a result state, but did not necessarily undergo the change described by the verb to achieve it (unselected objects).

RHEMES OF PROCESS: can be a nominal projection. Co-describes the nature of the process together with the process verb.

RHEMES OF RESULT: can be a nominal projection. Co-describes the nature of the result state together with the result verb.

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Deconstructing the Diagnostics

If there really are more structural possibilities than just internal vs. external, then what are the different diagnostics all sensitive to?
Logically speaking, they might not all be sensitive to the same thing.

Hindi/Urdu Alternations

'run' can only form unergative structures (i.e. its single argument is always an INITIATOR-UNDERGOER).

'fly' is an unaccusative with an *inanimate* argument (pure UNDERGOER), which has a causativized alternant as an unergative with an (animate) INITIATOR-UNDERGOER.

'descend' is an unaccusative with an *animate/inanimate* argument (pure UNDERGOER), which has a causativized alternant to give an unergative with an (animate) INITIATOR-UNDERGOER.

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NB: Hindi/Urdu has an overt causativizing morpheme which adds causation to an event structure, but always *adds* an argument. The above alternations are labile. The natural conjecture is that the null causative morpheme in Hindi/Urdu fills its specifier by MOVE, while the overt causative morpheme fills its specifier by MERGE.

Hindi/Urdu Diagnostics Again

The **reduced relative test** shows the pattern ('descend' , 'fly' inanimate and 'cut') VS ('run' and 'fly' animate): sole argument must not be an INITIATOR

The **inabilitative construction test** shows the pattern ('fly'/'descend' -animate and 'run') VS ('cut' and the 'fly'/'descend'-inanimate): argument must be an INITIATOR but also sentient

Butt's **light verb test** shows the pattern ('fly', 'descend' and 'run') VS ('cut'): argument must be UNDERGOER, but not exclusively so.

The possibility of **ergative case marking** is a lexically constrained subset of the strict unergative class (eg. 'cough' , but not 'run'); Speculation: Argument must be a pure INITIATOR

Part II: The Unreliability of Translation

Even if two languages seem to make roughly the same division in classifying intransitives, can we be sure that the translation of an unaccusative or an unergative in one language is going to be similarly unaccusative or unergative in the other? And how do we tell?

Some Unaccusatives in English

In English, the causative and anticausative forms are identical.
Labile alternation (causative and inchoative are identical).

(14)   (a) John opened the window.
         (b) The window opened.

It is usually assumed for English that intransitive *open* is
unaccusative.
In previous work, I have assumed that in its intransitive use, *open*
has a single argument that is a pure UNDERGOER.

Norwegian

(15)   Peter åpnet   vinduet.
           Peter opened window.DEF
           'Peter opened the window.'

(16)   Vinduet   åpnet seg.
           window.DEF opened REFL
           'The window opened.'

Most translations of 'unaccusatives' in English in the labile alternation come out as reflexive-marked in Norwegian. Reflexive marking to encode inchoativity is very common within the Indo-European language group.
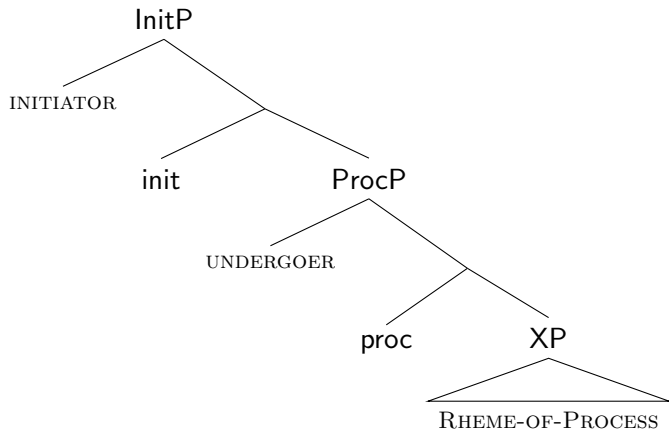
Which Structure?

IS IT

Which Structure?

IS IT

InitP

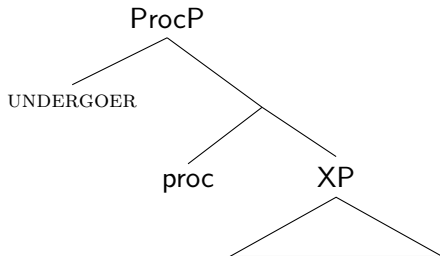INITIATOR

init   ProcP

UNDERGOER

proc   XP

RHEME-OF-PROCESS
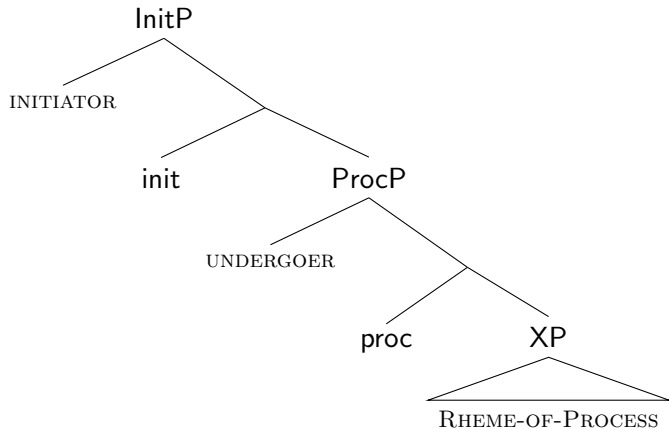
In this case, the 'alternation' is between the INITIATOR position being filled by Merge (for the transitive) or by Move (for the inchoative).
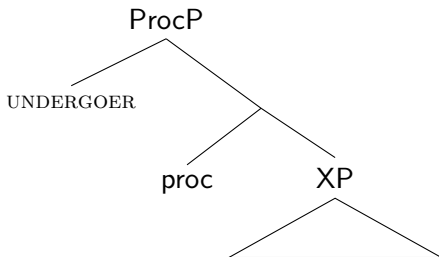
Which Structure?

OR

ProcP
UNDERGOER
proc   XP

Which Structure?

OR

In this case, the 'alternation' is between the structure without an INITIATOR as above for the inchoative, and the one with an INITIATOR which gives the transitive.

Lundquist et al 2016

To create a completely comparable test, we elicited judgements on identical video-clips, instead of asking for judgements in the speakers' own languages. The participants saw a 'caused' event, but then had to answer a Yes-No question containing the anticausative/inchoative verbal form, as exemplified below.

(17) VIDEO: Person walks up to a door, tugs at it. The door opens and the person walks through closing it behind her.
QUESTION:
Did the door open? (ENG):
Åpnet døra seg ? (NOR)
TASK: Press Y(es) or N(o).

Hypothesis 1: The Inchoative is 'Unaccusative' and contains a pure UNDERGOER

Hypothesis 1: The truth of anticausative verb is strictly entailed by the caused event. Namely the transitive and the inchoative are in a strict inclusion relation. The inchoative consists of a pure UNDERGOER and the transitive simply adds a causative layer plus INITIATOR to that structure.

Prediction: Participants will answer *Yes* to all test questions. Failure of this prediction would undermine Hypothesis 1, but would not give us any handle on the reasons for the failure.

Hypothesis 2: The Inchoative is 'Unergative' with an INITIATOR-UNDERGOER argument

Hypothesis 2: The truth of the anticausative verb is dependent on the possibility of interpreting the Theme subject as an EFFECTOR, or 'self-causer' in some way.

Prediction: Participants will not answer *Yes* across the board, but will be more likely to answer *Yes* to the test items where the theme is highly salient compared to the agent.

A Further Manipulation to Test for Hypothesis 2

- Theme focus: a successful unfolding of the event is largely determined by the properties of the theme. The agent on the other hand, is not necessarily active throughout the event. (Here it is easier to interpret the Theme as an EFFECTOR.)

- Agent focus: a successful unfolding of the event is mainly dependent on the force of the agent. The agent acts volitionally, and is active throughout the event. (Here it is hard to interpret the Theme as an EFFECTOR.)

It was crucial that the event we filmed could felicitously be described with a causative construction, so we had to keep the agent/causer relatively salient, even in the theme focus.

Verbs Used in the Experiment

We conducted the experiment with Norwegian speaking participants (with material in Norwegian), and English informants (with material in English). We used 14 verbs in the experiment, of which 7 were reflexive marked anticausatives in Norwegian, and 7 were labile in Norwegian.

Labile alternation	Marked anticausative
roll/rulle	open/åpne (seg)
overturn/velte	split/dele (seg)
melt/smelte	spread/spre (seg)
spin/snurre	move/flytte (seg)
detach/løsne	bend/bøye (seg)
splash/skvette	lock/låse (seg)
balance/balansere	turn/snu (seg)

The Experiment

The experiment was run on 42 native speakers of Norwegian at the University of Tromsø and 46 native speakers of English at the University of Edinburgh.

Each informant saw only one version of each verb, i.e., either Theme focus or Agent focus (that is 7 videos with Theme focus and seven videos with Agent focus). In total, each informant saw 3 (practice phase) + 19 (fillers) + 14 (test) = 36 videos. The videos were presented in random order.

The question was answered by pressing Y(es) or N(o).

We used OpenSesame to run the experiment and collect the responses.

Analysis and Models

•In analysing the data, we fitted two mixed-effects logistic regression models (using the lme4 package in R, one for English and one for Norwegian.

•Response (Yes or No) was the dependent variable. Each included the predictors Context (Theme focus or Agent focus) and Marking (unmarked or marked), and the interaction between them.

•The models additionally included random intercepts for subject and item, and by-subject slopes for context and marking and the interaction between context and marking, as well as a by-item slope for context. Predictors were dummy coded, and the intercept was the unmarked/labile verbs in the Theme focus. (The full summaries of the models can be found in Lundquist et al. (2016)).

•We further compared the overall frequencies of Yes-responses in English and Norwegian using a simple χ^2 test.

The Results

Significant Result No. 1 We found a significant difference in the responses from the Norwegian and the English informants, with the Norwegian speaking informants giving yes-responses in 64.4% of the trials, and the English speaking informants giving *Yes*-responses in 92.2% of the trials (χ^2 = 141.2, $p < 0.001$).
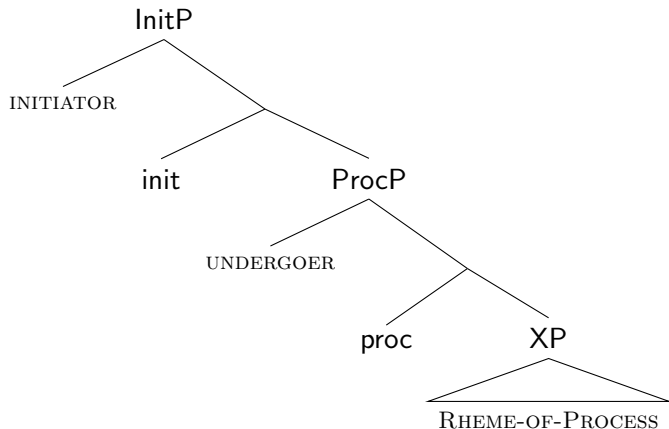
Significant Result No. 2 The Theme focus context yielded significantly more Yes-responses than the Agent focus context in Norwegian, but not in English

English *open_intrans* looks like this
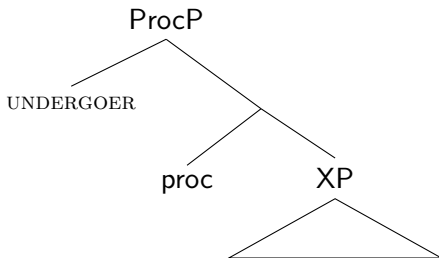
With the transitive built by labile causativization (addition of the initiational subevent).

Norwegian *åpner seg* looks like this

With a single INITIATOR-UNDERGOER argument, and the transitive built by filling the INITIATOR by MERGE rather than MOVE.

Lessons: Indeterminacy in the Mapping Between Conceptual Content and Syn-Sem structure

•Translation is unreliable. Each language needs to be taken on its own terms in terms of what internal distinctions among verb types is linguistically justified. (Translations from other well studied languages can help you make your first guesses for testing).

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•Conceptual content can be structured in different ways. Different languages can choose to grammaticalize the same real world event differently, especially when it comes to event descriptions with some mental/interpretational content.

Concepts vs. Grammatical Meaning

Once we take this to its logical conclusion and separate conceptual content from structural meaning, we can relegate some of the fuzziness to the indeterminacy in the mapping between conceptual content and structural semantics (this can be done either with a constructivist approach, or with a structured lexicon (as in e. g. Levin and Rappaport 1998) distinguishing event templates from constants.

Semantic Separation:
Grammatical (Symbolic) representations are categorical and have clear abstract structural semantic entailments.
The conceptual content of lexical items is not categorical and *underdetermines* grammatical representation.

Conclusion/Summary

- **Unergative** structures should be defined as *verbal constructions* in which a single argument is both INITIATOR and UNDERGOER

- **Diagnostics** for the unergative/unaccusative distinction are not all the same; they can be sensitive to the presence of the INITIATOR structural role, the absence of the INITIATOR structural role, or the presence or absence of the UNDERGOER structural role. These different sensitivities will make different partitions even within a particular language, given the existence of the composite INITIATOR-UNDERGOER role.

- What looks like the same **conceptual content** in one language *does not map onto the same* **structural representation** in another. Especially when it comes to ambiguous event types such as those uaually represented by 'unergative' structures.

Selected References

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