Event structure and the acquisition of passives

Berit Gehrke
*Universitat Pompeu Fabra*
*Barcelona*
based on joint work with Nino Grillo
*(CSIC Madrid)*
The passive construction

**active sentence:**

(1) John read the book.
   - agent finite verb theme
   - subject predicate object

**passive sentence:**

(2) The book was read (by John).
   - theme auxiliary + participle (preposition by + agent)
   - subject predicate (prepositional adjunct)
The passive construction (2)

*syntactic subjects and objects:*

(1’) Ivan pročital knigu.

John.NOM read book.ACC

‘John read a/the book.’

(2’) Kniga byla pročitana (Ivanom).

book.NOM was read (Ivan.NOM)

‘A/the book was read (by John).’
The common view on passivisation

*passivisation as an argument structure operation:* inverse mapping of argument type and syntactic relation

- the **internal argument** (the **theme**, the **logical object**) appears in the **syntactic subject** position
- the **external argument** (the **agent**, the **logical subject**) (optionally) surfaces in a *by*-phrase
- optionality of *by*-phrase $\rightarrow$ adjunct; external argument is demoted
Predictions of the common view

- necessary and sufficient condition on passivisation (unless additional assumptions are made):

- argument structure of the verbal predicate has to specify an internal and an external argument – has to be transitive (or ditransitive)
Predictions of the common view (2)

borne out:

- (di)transitive predicates:
  - the book was read, the cart was pushed, the girl was loved, the key was given to the mother

- intransitive predicates:
  - *the boy was slept, *it was slept, *the table was stood (in the corner), *it was stood (in the corner)
Predictions of the common view (3)

*not borne out:*

(1) The laptop weighed two kilos.
   *Two kilos were weighed (by the laptop).

(2) The chair cost 50 euros.
   *50 euros were cost (by the chair).

(3) Mary slept a deep sleep.
   *A deep sleep was slept (by Mary).
From argument structure to event structure

*our proposal:* shifting the perspective:
passivisation as an operation on event structure

*Main hypothesis:*
passivisation necessarily involves the promotion of a consequent state subevent of a complex event to a position above the verb phrase (VP)
Event structure

- Verbal predicates (verbs and their arguments) can be associated with events.
- Events can be decomposed into subevents:
  e.g. The bride kills Bill.
  = The bride’s DOing (something) CAUSEs Bill to BECOME dead.

PROCESS (DO) - CAUSE - BECOME (STATE)
Event types

- **States**: $\phi$
  
  *John knew the answer.*

- **Activities**: DO($\phi$)
  
  *The cat played with the ball.*

- **Accomplishments**: DO($\phi$) CAUSE BECOME($\phi$)
  
  *The bride killed Bill.*
  
  *Boban hammered the metal flat.*

- **Achievements**: BECOME($\phi$)
  
  *The train arrived.*
Event structure: basic ingredients

- transition into a consequent state
- BECOME (a predicate or subevent associated with the transition into a state)
- syntactic representation of event decomposition: VP shells
The proposal

- passivisation necessarily involves the zooming in on a consequent state subevent, which results from a transition associated with BECOME
- a discourse-semantic requirement singles out this consequent state and drives its movement to a discourse-related projection at the edge of the VP
- whatever is asserted about the event of that part of the event the focus lies on has to move up passives: the consequent state moves up
The external argument in passives

_the external argument is still present in verbal passives:_

a. * They_i were killed by themselves_i._  
   strong crossover effects
b. The book was written to collect the money.  subject-controlled infinitival clauses
c. The book was written deliberately.  subject-oriented modifiers
d. The book was written drunk.  depictives
e. Damaging testimony is always given about oneself in secret trials. Such privileges should be kept to oneself. binding
f. The book was written on purpose.  purpose adverbials

⇒ the _by_-phrase is not an adjunct
Acquisition of passives

- Children until after the age of 4 have problems with (comprehending and producing) passives
- Children do better with actional passives (1) than with non-actional passives (2)

(1) The cart was pushed (by Christina).
(2) Roberta was feared (by Giorgos).
Maturational accounts

**A-Chain Maturation Hypothesis** (Borer & Wexler 1987)

At early stages of their development children cannot form A-chains.

**A-chain**: movement into an argument position
Maturational accounts: problems

Not all A-chains mature equally:

- Children do not have problems with placing subjects before finite verbs in active sentences
- Children do not have problems with unaccusative predicates

(2) Mina arrived.

(2’) #Arrived Mina.
Constraints on movement

- **locality/minimality**: only the closest element moves
- intervention effects: movement can be blocked by intervening material
- potential intervener: ‘same structural type’ (e.g. argumental, quantificational, modifier)

1. **How** did you solve this problem <how>?
2. I wonder **who** could solve this problem in this way.
3. *How* do you wonder **who** could solve this problem <how>?
Locality

- syntactic elements can be different if they have a different feature specification
- **features** on these elements, e.g. for number (singular, plural) or features that have more to do with the meaning or function of such elements in the clause (e.g. wh-feature for question items, discourse feature for topicalised or focused items etc.)
(1) Which car do you wonder whether John fixed \textless which car} \textgreater? 

(2) *What do you wonder whether John fixed \textless what} \textgreater?
Problem with discourse features

- Different populations (children, agrammatic aphasics, adult speakers in stressful situations) have problems with ‘non-local’ chains

- \textbf{Generalised Minimality} (Grillo 2008)
  The projection of discourse features is more costly than that of argumental features, and therefore problematic in populations with reduced (syntactic) processing capacities

  A minimality effect arises as a consequence of this impoverishment, which explains the comprehension deficit with particular structures
Event structure and the acquisition of passives: Problem #1

Problem #1: **passives are acquired later**

- Generalised Minimality: children have difficulties with the projection of discourse features
- this leads to an impoverished representation of the lower VP shell
- the inactivated discourse feature on the lower VP shell makes it indistinguishable from the higher VP shell
- movement of the lower VP shell over the higher VP shell is not possible
Passivising states

- States do not involve BECOME since they consist of only one subevent, a state.
- Potential problem for our proposal: there are states that passivise:
  1. The house is owned (by the army).
  2. The answer is known (by the pupils).
  3. Antonia is loved (by Stefan).
States: e.g. psych-verbs

But: the availability of passivisation is not a common property of states in general
e.g. different kinds of psych-verbs:
(1) *fear*-type: can passivise
   Giorgos feared Roberta.
   Roberta was feared (by Giorgos).
(2) *appeal*-type: cannot passivise
   The solution escapes me.
   * I am escaped (by the solution).
Different kinds of states

- intuitive difference between *appeal*-verbs vs. *fear*-verbs and other states that passivise: only the latter can have a reading under which the state denoted by the verb can be interpreted as a consequent state, a state having come into existence (*inchoative state*):

  1. Shakuntala got to know the answer.
  2. Louise got to own a house.
  3. Nino got to fear sharks.
  4. ?? The solution got to escape Berit.
Proposal for passives of states

- when states are passivised, they involve coercion (event type shift)

- the event type underlying the verb (a state) is shifted (coerced) into a more complex event type (an achievement) by adding BECOME

- this yields a more complex syntactic event structure, and passivisation is possible again

- similar coercion: *Suddenly, John knew the answer.*
Event structure and the acquisition of passives: Problem #2

Problem #2: non-actional passives are more difficult than actional ones

- actional/non-actional distinction = distinction between non-states (activities, accomplishments, achievements) and states
- states have to be coerced into achievements in order to be able to passivise
Event structure and the acquisition of passives: Problem #2 (2)

our proposal: coercion requires

a) a revision of the semantic properties of the predicate

b) a revision of the syntactic structure generally associated with that predicate

⇒ A child’s capacity for processing, which is already limited in dealing with ‘normal’ actional passives, is exceeded by the necessity to operate these additional computations.
Coercion with states

*some additional support:*
- psycholinguistic evidence that type shift operations (e.g. aspectual coercion) add additional processing complexity (in adults)

*future task:*
psycholinguistic experiments to test whether passivisation of states involves coercion
Conclusion

- *problems with argument structure based approaches to passivisation:* different kinds of predicates behave differently, not necessarily a matter of (in)transitivity

- *our proposal:* shift from argument structure to event structure passivisation involves the zooming in on a consequent state of a complex event
new insights into the acquisition of passives:

- *passives are acquired later*: children have problems with discourse features (which enable the zooming in into a consequent state subevent)

- *non-actional passives are more problematic*: children have problem with augmenting the simple event structure of stative predicates