

# 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.                      *Russian*  
John.NOM                      read                      book.ACC  
'John read a/the book.'

(2') Kniga                      byla pročítana                      (Ivanom).  
book.NOM                      was read                      (John.INSTR)  
'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 → 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:**  $\varphi$   
*John knew the answer.*
- **Activities:**  $DO(\varphi)$   
*The cat played with the ball.*
- **Accomplishments:**  $DO(\phi)$  CAUSE BECOME( $\varphi$ )  
*The bride killed Bill.*  
*Boban hammered the metal flat.*
- **Achievements:** BECOME( $\varphi$ )  
*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<sub>i</sub> were killed by themselves<sub>i</sub>. *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).

# Maturation 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

## Maturation 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.)

## Locality (2)

- (1) Which car do you wonder whether John fixed  
<which car>?
- (2) \*What do you wonder whether John fixed  
<what>?

# Problem with discourse features

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

## Conclusion (2)

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