An event structure approach to passives and its implications for acquisition

Since Maratsos et al. 1985 it is generally recognized that pre-school children reach better comprehension and production of passives derived from *actional* (A) than *non-actional* (NA) predicates, e.g. perception Vs. In addition, Horgan 1978 observed that children comprehend and produce *short passives* (without *by*-phrases) much earlier than *long passives* (with *by*-phrases). Based on these facts, Borer & Wexler 1987 propose the *A-chain Maturation Hypothesis*: i. children are not able to form A-chains and project the structure of adjectival instead of verbal passives; ii. adjectival passives, being generated in the lexicon, do not require A-movement and are predicted not to be problematic. This hypothesis poses several problems (see, e.g., Guasti 2004): e.g. children do not have difficulties with A-chains in actives and unaccusatives.

Numerous recent studies show that the asymmetry between A and NA passives still remains. Fox & Grodzinsky 1998 report that children comprehend and produce A but not NA *long passives* and propose that they do not master *θ-transmission* (Baker et al. 1989). Children, they argue, are able to circumvent this mechanism with A but not with NA passives, by having the preposition *by* assign the role of agent/ causer to its complement directly. This is why they master *get*-passives, in which *by* directly assigns this and only this role and which are therefore not possible with NA predicates to begin with. A major problem of this account is that one group of children they tested performed poorly not just with NA *long* but also with NA *short* passives, despite the fact that the latter should not involve this mechanism.

In this paper, we build up on a novel theoretical account of passives, which shifts the focus from argument structure to event structure and also accounts for the fact that only NA passives pose an acquisition problem. Rather than assuming that passivization involves A-chain formation, we argue that it involves movement of a part of the event structure to a discourse-related position at the edge of the VP, Spec, VoiceP. The account allows to make sense of previously unaccounted facts about passivization and to provide a principled explanation of the A/NA asymmetry in acquisition. Assuming Travis' 2000 VP shell approach to event structure, we propose that passives are derived as in (1) (omitting some structure that is not directly relevant to the proposal, and leaving aside the exact status of the *by*-phrase and accusative case 'absorption', for which we roughly follow Collins 2005).

(1) $[_{IP}\ \mathbf{DP_{int}} \ldots [_{VoiceP}\ \mathbf{[_{VP2}} \langle\ \mathbf{DP_{int}}\ \rangle\ \mathbf{[_{V2'}\ V_2\ (XP)\ ]}\ [_{Voice}\ \text{Voice}\ [_{VP1}\ DP_{ext}\ [_{V1'}\ V_1 \langle\ \mathbf{VP_2}\ \rangle\ ]]$

A semantic requirement, some kind of topicalization, singles out the consequent state of a complex predicate, structurally represented as VP_2, determining its movement to a discourse-related projection at the edge of the VP phase, represented as VoiceP. Voice is responsible for grounding the event time within the event structure in a particular way, assuming Demirdache & Uribe-Etxebarria's 2000 syntax of temporal relations expressed by tenses and aspects. In the case of passives, the event time is anchored within the consequent state subevent. The position VP_2 moves to is argued to be independently needed, also in active sentences, to endow the (atemporal) event with temporality. In passive constructions, the internal argument in Spec, VP_2 further moves to Spec, IP in the normal case, to satisfy EPP. This second movement is entirely independent of the movement of VP_2 to Spec, VoiceP, however. This is supported by Passive Existential Constructions (PEC), in which the second movement is absent:

(2) There was a man killed. / *There was killed a man.

We acknowledge the fact, noted by Law 1999, that PECs are ambiguous between an eventive and a non-eventive reading, but analyze the eventive reading as involving a proper matrix passive. This claim is supported by the fact that under the eventive reading it is possible to extract out of the clause (which should not be possible if it were a reduced relative, as claimed by Law) (3) (see also Rezac 2004).

(3) To whom there was a present (*which was) given?

Thus, the claim that two independent movements can be involved in passive constructions in general, and that only the first one takes place in sentences like (2), showing the independence of these two movements, is still valid.

We assume with many others that complex events associated with accomplishments and achievements

(in the sense of Vendler 1967) involve a BECOME predicate. The following (informal) reformulation of BECOME in event semantic terms is given by McIntyre 2006:

(4) λeλsλP BECOME [P(s)](e)]

'e is an event of coming-into-existence of a situation s with property P, where 'coming-into existence' is a conceptualized entry / arrival of s in the domain of existing things'

We claim that passives involves the zooming in on a consequent state subevent (s in (4)), which is the result of a transition associated with the BECOME component. Syntactically, the BECOME component is associated with the lower VP shell (VP_2).

One prediction of our proposal is that only with event structures that contain a BECOME component, represented by means of a lower VP shell, passivization is possible. This correctly predicts that many eventive predicates can undergo passivization, given that many of them involve accomplishment or achievement predicates. However, many stative predicates can undergo passivization as well, which, at first sight, is a problem for our account, given that such predicates are usually assumed to only involve a stative but not a BECOME component. We argue that in order for stative predicates to be able to passivize they have to undergo coercion into an inchoative state, i.e. a state resulting from a transition (from a situation in which the particular state did not hold). More precisely, we argue that in order for passivization to be possible a stative predicate has to be coerced into an achievement predicate by adding BECOME, which results in a complex event structure (similar coercion operations have independently been proposed by de Swart 1998 or Rothstein 2004). To illustrate this we focus on the passivization of psych verbs. Rizzi & Belletti 1988 distinguish between the *worry*-type (*preoccupare*) and the *appeal*-type (*piacere*). Whereas *worry*-verbs can undergo passivization, *appeal*-verbs cannot:

(5) a. I am **worried / surprised** (by this fact).
b. *I am **appealed / escaped** (by the solution).

The intuitive difference between these classes of psych-verbs is that while *worry*-verbs can have an inchoative meaning of the state denoted by the psych-verb (*Max got into a worrying state*), *appeal*-verbs cannot (**I got into an escaping state*).

Back to acquisition, we take the NA predicates to involve state predicates. The fact that the passivization of such predicates is acquired only much later can be explained by proposing that the coercion of states into inchoative states adds additional processing load on these constructions. Thus, children's limited processing capacities, which are already heavily taxed by the representation of "standard" passives, is exceeded when this extra operation is required. The event structure based account of passives proposed here provides a straightforward theoretical explanation for the availability of passivization for a given predicate and, on the basis of the same mechanism, a principled explanation of the A/NA asymmetry in language acquisition. It will further be shown that the account extends to psycholinguistic data from Broca's Aphasia patients, which show a similar deficit in the comprehension and production of passives.

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