In J. Costa & M. J. Freitas (2002) (eds.), *Proceedings of the GALA' 2001 Conference on Language Acquisition*, pp. 239-246.

How you can eat the apple and have it too: Evidence from the acquisition of telicity in German

Petra Schulz and Zvi Penner
University of Konstanz, Germany
schulzpetra@aol.com

Abstract

The goal of this study was to investigate children's knowledge of the syntax-semantics interface for telicity in German. Apart from inherent telicity, telicity can be achieved compositionally by quantized objects or resultative particles. Extending our previous research on the acquisition of inherent telicity, we conducted an experiment that addressed the question of whether German-speaking preschool children are sensitive to compositional markers of telicity. Our findings indicate that children between the ages of 4 and 6 correctly accept telic particle verbs for completed events only, while interpreting transitive sentences with a quantized object as ambiguous between a telic and an atelic reading. These interpretation patterns are comparable with those found for English- and Dutch-speaking children (van Hout, 1998, 1999). Van Hout takes these results to indicate that children up to age 6 do not yet properly integrate the semantics of the verb and the quantized object. Examining in more detail the individual responses given by adults and children, we propose an alternative account of the data. At age 4 children are sensitive to the contribution of a quantized object to the event-semantic interpretation and, just as adults, accept or reject transitive sentences for incompleted events, depending on specific pragmatic factors.

1. Introduction

Unlike nouns, verbs generally refer to events including situations and actions like *being in love, eating, sweeping, finding* and *arriving*. Following Pustejovsky's (1991, 1995) model of event typology, these verbs differ in terms of the type of event designated by the verb. States like *be in love* are defined as a single event, processes like *eat* as a sequence of similar events, and transitions are defined as complex events involving a transition from one subevent to another. *Sweep*, *find*, and *arrive*, for example, both designate transitions from a process to a state.

Verbs also differ in terms of the temporal make-up of the event they refer to. Events may have a terminal endpoint built into them leading to a natural culmination point or may be without such a terminal endpoint allowing the event to be continued indefinitely or stopped at any moment in time. Verbs designating events with terminal endpoints are traditionally referred to as telic verbs, and verbs designating events without such an endpoint are called atelic (cf. Comrie, 1976).

In terms of Pustejovsky's model of events types, only transitions can be telic, whereas states and processes are always atelic since they do not refer to any terminal endpoint of an event. *Being in love* and *eating* could go on for an unlimited amount of time. Transitions are telic, if the state that the process is leading to is the more prominent subevent of the two. In *sweep*, for example, the process subevent is more prominent than the endstate. *Sweep* describes an activity done in a specific manner. More importantly, we can sweep a floor without ever arriving at a culmination point, and this event could still be described as sweeping. In *find* and *arrive*, on the other hand, the endstate subevent is more prominent than the process. The manner in which we find something or arrive at a destination is not relevant to the verb's meaning. However, if the terminal endpoint of the event is not reached, i.e. if we do not locate an object or reach a destination, these situations are not an instance of finding or arriving. Put differently, telic predicates can only be used to refer to events with their terminal endpoint reached (henceforth COMPLETED EVENT), while atelic predicates can be used to refer to completed events as well as to events without a terminal endpoint or where the terminal endpoint is not reached (henceforth INCOMPLETED EVENTS).

A well-known diagnostics for whether a verb is telic or atelic is the modification with temporal modifiers (cf. Dowty, 1979). Atelic predicates

such as in (1) allow adding a durative adverbial like *for hours* or *for years*, while telic predicates do not allow this modification, as shown in (2).

(1) a. He was in love for years.
b. She ate for hours.
c. He swept the floor for hours.

(2) a. She found the ring *for hours.
b. She arrived *for hours.

Languages differ as to how event-types are marked in syntax and word formation. Apart from verbs with an inherently telic event-type (e.g., *find, arrive, open, destroy*), telicity of the predicate often depends on event-semantic properties of other elements in the sentence. In other words, telicity of the verb is either determined by its lexical semantics or compositionally via the interaction with the morpho-syntactic context the verb appears in (cf. van Hout, 1998, 2000a). In English, Dutch, and German, verbs referring to processes such as *eat, walk,* or *laugh* shift their event-type from atelic to telic, if resultative verb particles, quantized objects, directional phrases or resultative phrases are added. Thus, while the process verb *eat* is atelic, the particle verb *eat up* is telic. Similarly, the atelic verb *walk* shifts its event-type to telic if combined with a quantized object as in *walk a mile* or if combined with a directional phrase as in *walk to the station.* Finally, resultative phrases turn an atelic process verb such as *laugh* into a telic verb like *laugh yourself silly.*

Given this complex relationship between the lexical semantics of the verb determining its basic aspectual property and the morpho-syntactic context, the acquisition task of the child is multifold. She has to learn the basic event-semantic properties of the individual verbs as well as the function of the various morpho-syntactic elements in her language and the mapping between these elements and their role in determining the predicate's event-type. Put differently, the child is faced with the task of discovering which types of verbs express inherent telicity and which morphological endings and syntactic constructions mark telicity compositionally.

This paper focuses on the acquisition of compositional telicity markers in German, more specifically, on the function of resultative particles and quantized objects (for acquisition of inherent telicity, cf. Schulz, Wymann & Penner, 2001; Schulz, Penner & Wymann, in press; Penner, Schulz & Wymann, in prep.). Section 2 sketches how telicity is marked in German. In section 3 we summarize the main findings on the acquisition of telicity in English, Dutch, and German and outline the hypotheses tested in our experimental study. Section 4 presents our comprehension study. Section 5 discusses the findings and questions arising from them. Section 6 summarizes the main findings of our research.

2. Telicity marking in German

Inherent and compositional telicity

German is very similar to English and Dutch in that telicity is marked either inherently via the lexical semantics of the verb or compositionally. A typical example of an inherently telic verb is *aufmachen* (open). (3) illustrates that the endstate [BE OPEN] is entailed by the verb and can therefore not be negated.

(3) Sie hat die Tür aufgemacht, *aber sie ist noch zu.
'She opened the door, but it is still closed.'

As in English and Dutch, compositional telicity is achieved for example by adding a resultative particle or a quantized object to an atelic process verb. Using the adverbial modification test, the contrast between (4a) and (4b) demonstrates that *aufessen* (AUF.eat, eat up) is telic, since unlike *essen* (eat) it is incompatible with a durative adverbial. (4c) indicates that non-resultative particles like *herum* (around) do not lead to an event-type shift (cf. also Schulz et al., 2001).

(4) a. Sie hat stundenlang gegessen.
'She ate for hours.'
b. Sie hat (*stundenlang) aufgegessen.'
'She ate up (for hours).'
c. Sie hat stundenlang herumgegessen.
'She nibbled for hours'.

The example below shows that a quantized object (5b) but not a bare noun (5a) shifts the event-type of a process verb from atelic to telic (cf.

Verkuyl,1972, 1993; Krifka, 1989).

(5) a. Sie hat stundenlang Brot gegessen.
'She ate bread for hours.'
b. Sie hat (*stundenlang) das Brot gegessen.
'She ate the bread (for hours).'

Strong and weak compositional telicity

At first sight, resultative particles and quantized objects seem to behave alike in that they inevitably trigger an event-type shift when added to a process verb. Closer examination reveals, however, that combination with a quantized object does not always result in a telic predicate (cf. also Schulz et al., 2001; Penner et al., in prep.).

(6) a. Sie ging stundenlang hinauf.
'She walked up for hours.'
b. Sie ging stundenlang den Hügel hinauf.
'She walked up the hill for hours.'

(7) a. Er fegte stundenlang.
'He swept for hours'.
b. Er fegte stundenlang den Boden.
'He swept the floor for hours.

(8) a. Er schaute stundenlang Frauen an.
'He looked at women for hours'.
b. Er schaute stundenlang die Frau an.
'He looked at the woman for hours'.

The process verbs *hinaufgehen* (walk up) and *fegen* (sweep) remain atelic, even if combined with a quantized object such as *den Hügel* (the hill) in (6b) and *den Boden* (the floor) in (7b). Likewise, *die Frau anschauen* (look at the woman) in (8b) is an atelic predicate despite the quantized object. Therefore we have to distinguish between two kinds of compositional telicity markers. Strong telicity markers always yield an event-type shift if combined with a process verb, whereas weak telicity markers may yield an event-type shift if combined with a process verb. Quantized objects are weak telicity markers, because they bring about a predicate's event-type shift with some process verbs (cf. (9) and (10)), but not with others (cf. (6) to (8)).

(9) a. Sie hat gegessen.
'She ate.'
b. Sie hat den Käse gegessen.
'she ate the cheese.'

(10) a. Er hat getrunken.
'He drank.'
b. Er hat den Tee getrunken.
'He drank the tea.'

Resultative particles, on the other hand, are strong telicity markers, because the predicate's event-type shifts from atelic to telic, whenever they are added to a process verb. Typical resultative particle verbs and their process counter parts are listed in (11) to (13).

(11) a. Er hat gegessen.
'He ate.'
b. Er hat aufgegessen.
he has AUF.eaten-part
'He ate it up.'

(12) a. Sie hat getrunken.
'She drank.'
b. Sie hat ausgetrunken.
she has AUS.drunk-part
'She drank it up.'

(13) a. Sie hat gezeichnet.
'She drew.'
b. Sie hat das Haus abgezeichnet.
she has the house AB.drawn-part
'She drew the house.'

In summary, telicity in German is marked either by the lexical semantic properties of the verb itself or compositionally, for example by adding resultative particles or quantized objects to an atelic process verb. Resultative particles were identified as strong telicity markers and quantized objects as weak telicity markers.

3. Acquisition of telicity

Studies on the acquisition of telicity in English and Dutch have focused on particle verbs and quantized objects as compositional telicity markers. Van Hout (1998, 1999) found that the particle verbs *eat up* and *drink up* and their Dutch counter parts were correctly restricted to telic interpretations by most 4- and 5-year-olds. In contrast, 3-year-olds interpreted them half of the time as telic and half of the time as atelic. As for the interpretation of quantized objects, children up

to the age of 5 allowed telic predicates such as *eat the cheese* or *drink the tea* and their Dutch equivalents to refer to completed and incompleted events (van Hout, 1998, 1999). In other words, children at this age seem to not yet properly integrate the semantics of the verb and the quantized object. Since 4- and 5-year-olds in these studies correctly interpreted predicates with bare noun phrases such as *eat cheese* or *drink tea* as atelic, it is unlikely that they were simply unaware of the presence of the determiner. It might be that the child first learns overt compositional telicity markers such as resultative particles and is only later sensitive to the role of the quantized object in encoding telicity, since the direct object encodes multiple functions such as expressing definiteness or specificity in addition to encoding compositional telicity (cf. also van Hout, 2000b).

Studies investigating the acquisition of telicity in German have concentrated on inherently telic verbs. Wittek's (1998, 1999) experiments revealed that 4- and 5-year-old children correctly accept the inherently telic particle verbs *aufmachen* (open), *zumachen* (close), *abmachen* (remove), and *ausmachen* (extinguish) for completed events only. In a study with younger children, we found that already at age 2 children correctly interpret the particle verb *aufmachen* (open) as telic (Schulz et al., 2001, in press). These results indicate that inherent telicity expressed by particle verbs is acquired very early. To date, the related question of how and at what age German children master the properties of compositional telicity has not been addressed. Therefore, we designed a comprehension experiment to investigate whether German preschool children are sensitive to resultative particles and quantized objects as compositional markers of telicity. Relating the German acquisition findings to the findings on English and Dutch we expected that strong compositional telicity markers are learned early and weak compositional telicity markers are acquired later. More specifically, the following two hypotheses were tested in our experiment:

(H1) Children interpret strong telicity markers such as resultative particles correctly from early on.

(H2) Children are not yet sensitive to weak markers of telicity. They interpret a telic predicate with a quantized object as referring to completed and incompleted events.

4. Comprehension experiment in German: Sensitivity to compositional markers of telicity

In this comprehension experiment, subjects were asked to match their interpretation of sentences with and without weak and strong compositional markers of telicity with completed or incompleted events.

Subjects

24 German-speaking children aged 4;1 to 6;4 (*MEAN* 5;4, *SD* = 10.6 months) participated in the study. The children were drawn from 3 daycare centers in Konstanz, Germany, The children were tested in the daycare centers and the sessions were recorded for later transcription. 24 German-speaking adults (*MEAN*= 20;10, *SD* = 10.8 months) served as an adult control group. They were tested at the university or at their homes. All subjects spoke German as their first language and none had any handicapping conditions.

Method

A controlled comprehension experiment was designed, based on the materials developed by van Hout (1999). Each subject was shown 8 picture-sequences depicting different events of eating and drinking. In half of the trials the event was depicted as reaching its natural endpoint, e.g. a boy drinking up his tea (completed event condition), while in the other half the event was depicted as not reaching the natural endpoint, e.g. a girl eating only a piece of an apple (incompleted event condition). Each story was accompanied by three pictures. The first picture introduces the protagonist, while the second picture depicts the protagonist in the middle of his/her drinking or eating activity. The last picture illustrates the outcome of the activity, either the natural endpoint, e.g. by showing the empty glass, or the incompleted event, e.g. by showing a large part of the apple still lying on the plate. The two verbs used were *eat* and *drink*.

Two yes/no test questions were asked about each event: One question used the verb *eat* or *drink* in an intransitive frame (14), and a second one used the same verb either in a transitive frame (15) or with a particle (16). A third control question asking about details of the story was added to

provide an equal number of possible yes and no-responses.

(14) Intransitive (atelic)
Hat das Mädchen gegessen?
has the girl eaten
'Did the girl eat?'

(15) Transitive (telic)
Hat das Mädchen den Apfel gegessen?
has the girl the apple eaten
'Did the girl eat the apple?'

(16) Particle (telic)
Hat das Mädchen ausgetrunken?
has the girl UP.drunk-Part.
'Did the girl drink up?'

The correct response was *yes* or *no*, depending on the event depicted and on the event-type of the predicate. When asked to match a telic predicate such as in (15) or (16) with an incompleted event, the answer should be *no*, while in all other cases the answer should be *yes*.

Type of question and type of event were counterbalanced across the 8 stories, yielding 4 different test versions. (17) illustrates a test item in the completed event condition, and (18) a test item in the incompleted event condition.[2]

(17) Example: Completed event
Here is a red mouse. She found a piece of cheese on the floor. Look, here she is eating. See, she's finished it all.
Intr: Did the mouse eat?
Trans: Did the mouse eat the cheese?
No-Filler: Is that chocolate?

(18) Example: Incompleted event
Here is a yellow mouse. She found a piece of cheese on the floor. Look, here she is eating. See, she had a couple of bites and left the rest.
Intr: Did the mouse eat?
Part: Did the mouse eat up?
No-Filler: Is the mouse wearing a ribbon?

Preceding the actual test, two pretests were administered, assessing children's knowledge of the basic vocabulary used in the stories and their understanding of yes/no-questions.

Predictions

Adults were expected to perform target-like. As for the children, we predicted that they correctly allow intransitive simplex verbs to refer to both completed and incompleted events, while performing less consistently on compositional telicity markers. They should correctly interpret particle verbs as strong compositional telicity markers referring to completed events only, while falsely allowing verbs with quantized objects to refer to completed as well as to incompleted events.

Results

Both children and adults performed well on the vocabulary pretest (99% correct responses for the children and 100% correct responses for the adults) and on the pretest assessing understanding of yes/no-questions (97.9% correct responses for the children and 100% correct responses for the adults). Children's and adults' performance on the No-Filler questions was also very good (97.9% correct responses for the children and 100% correct responses for the adults)

Responses to the test questions were coded as a yes- or no-response. If a response other than *yes* or *no* was given, it was classified as a positive or negative response depending on whether it expressed rejection or acceptance of the sentence for the type of event displayed in the story (cf. also section 5). This classification was carried out independently by three researchers. Disagreements were solved by discussion.

An ANOVA was performed with age (children or adults) as the between subject factor and event-type (completed or incompleted) and sentence-type (intransitive, transitive, or particle) as the within subject factors, with the last 2 factors as repeated measures (α level .05). The age factor was not significant ($F\ [1,46]= 1.15$, $p = .284$), indicating no improvement with age.

Therefore, two separate ANOVAs were carried out for children and adults, using the same within subject factors as before. There was a significant interaction effect of event-type and sentence-type for the children ($F\ [2,21]= 27.48$, $p < .001$). For the adults, a significant interaction effect of event-type and sentence-type was found as well ($F\ [2,21] = 32.85$, $p < .001$). Figure 1 below illustrates the proportion of yes-responses by adults and children to the test conditions. As can

be seen in the figure, children's and adults' response patterns to the test items did not differ. A series of Student's t-tests ($p < .05$) revealed that the means of the transitive sentences for children and adults differed significantly from the means of all other conditions of both children and adults, which did not differ from each other. Children's and adults' means for the transitive sentences were then compared to the proportion anticipated by chance (50.0) using the G-Test. It was found that the proportion of no responses was not significantly different from chance level ($p = .76$ for children and $p = .59$ for adults).

5. Discussion

An important advantage of this study is that it controlled for understanding of yes/no questions. The results show that children as well as adults had no problem understanding this question type. Since

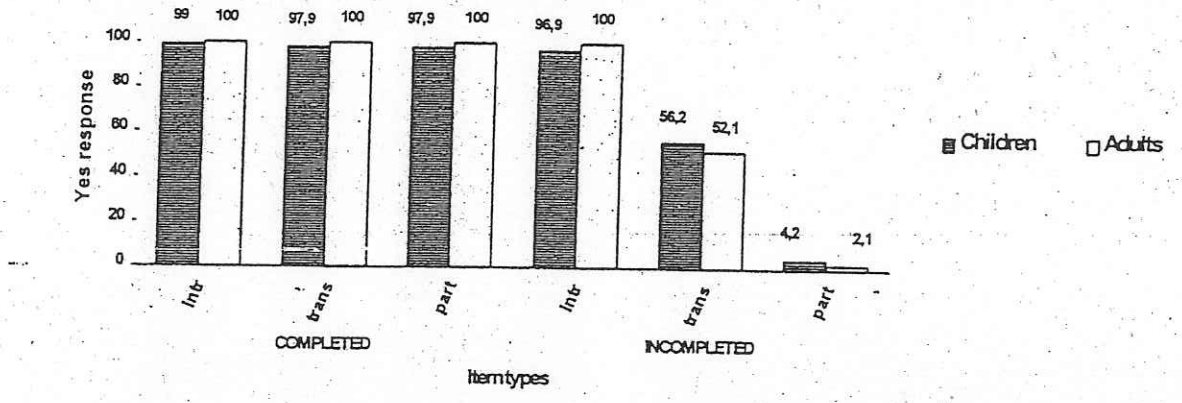

Figure 1: Responses by age group and item type

performance on the No-fillers was also very good for children and adults, we can assume that the *yes* or *no* responses to the test items indeed reflect subjects' interpretation of the various sentence-types.

Hypothesis 1 is confirmed by the results of the study. Only in 4.2 % of all responses was the particle sentence-type interpreted as atelic. In other words, all children interpreted the resultative particles *auf* and *aus* correctly as strong compositional telicity markers accepting them for completed events only. Hypothesis 2 seems to be confirmed as well. Children between the ages of 4 and 6 assign mixed interpretations to transitives with a quantized object. In half of the cases transitives with a quantized object are restricted to completed events, in the other half they are also accepted for incompleted events. These response patterns give the impression that German preschool children are not yet fully sensitive to weak compositional markers of telicity, just as the English and Dutch children in van Hout's studies. A look at the adults' answers, however, shows that they are identical to the children's response patterns. In only half of the cases are transitives with quantized objects restricted to telic readings, contrary to the predictions made by semantic theory. Assuming that adults show target-like competence, the question to be asked is whether this similarity results from the same underlying interpretation of transitives with a quantized object or whether adults and children arrive at the same response pattern for different reasons. In order to assess subjects' interpretations, we carried out a qualitative analysis of the individual responses given by adults and children.

Individual responses

In a first step, we examined the types of responses to the various test conditions. Both children and adults most often gave answers other than simply *yes* or *no* when asked to map a sentence to an incompleted event (children: 13.2% of the responses compared to 2% for completed events; adults: 10.8% of the responses compared to 0% for completed events). As for the incompleted events, adults and children most often responded with answers other than *yes* or *no*, when asked to

map a transitive sentence to an incompleted event Adults supplied additional comments in 29.17% of the cases and children in 22.9% of the cases, compared to 4.2% and 0% additional comments when asked to map a particle sentence to an incompleted event. This indicates that both children and adults felt the need to elaborate on their answers, presumably because the mapping-relation between the quantized object and its event-type is ambiguous. Looking first at the responses classified as no responses, we find that adults and children gave similar comments. Two typical responses are illustrated in (19).

(19) Question: Hat die Maus den Käse gegessen?
'Did the mouse eat the cheese?'
Answer: Nicht ganz. (E. 4;7)
'Not all.'
Answer: Nicht vollständig. (Adult)
'Not completely.'

These responses reveal that the predicate with the quantized object is interpreted as telic. More precisely, the definite NP *the cheese* is taken to provide a culmination point yielding a telic predicate, as predicted by semantic theory. The quantized object thus refers to the object as a whole. (20) lists a different response type classified as a yes response.

(20) Question: Hat das Mädchen den Tee getrunken?
'Did the girl drink the tea?'
Answer: *Ja, ein bisschen.* (T. 6;0)
'Yes, a bit.'
Answer: *Ja. Aber ein bisschen übriggelassen.* (Adult)
'Yes. But she left a bit.'

The answers reveal that the transitive sentence is interpreted as atelic. The initial *yes* response could indicate that the quantized object refers to the specific object mentioned previously in the discourse (i.e. the tea mentioned in the preceding story and not some other tea or some other drink). It might also express a reference to the specific part of the food being consumed instead of the whole object. The comments added after the *yes* suggests that the former interpretation might be on the right track, since both comments qualify their positive answer by expressing that the drinking event is not complete. This would be unnecessary if the quantized object referred just to the part being drunk.

Even though this analysis is necessarily preliminary and somewhat speculative, it indicates that adults' and children's responses express very similar underlying interpretations of quantized objects. Consequently, the conclusion seems warranted that German children between the ages of 4 and 6 have acquired an adult-like interpretation of quantized objects. Furthermore, we argue that this also holds true for the English and Dutch children as they exhibit the very same response patterns. At age 4 children are sensitive to the contribution of a quantized object to the event-semantic interpretation and accept or reject transitive sentences for atelic events just as adult speakers, depending on whether specificity overrides telicity marking.

6. Conclusion

A German child who is learning how telicity is marked in her language is faced with a number of problems. She has to find out what the lexical event-semantic properties of the individual verbs are. Furthermore, she has to discover which verbs are inherently marked as telic or atelic, and which verbs can alter their event-type when combined with certain morpho-syntactic elements. This task is complicated by the fact that the child also has to learn what the relevant grammatical elements in her language are that lead to event-type shifting. Finally, the language learner has to detect which elements always give rise to an event-type shift and which elements may only sometimes do so.

Our previous research (Schulz et al., 2001, in press) showed that mastery of inherent telicity emerges as early as age 2. In the comprehension experiment presented here we have addressed the question of whether German preschool children are sensitive to the function of resultative particles and quantized objects as compositional markers of telicity. Three main findings arise from the experimental study. First, 4- and 5-year-olds have acquired the semantics of strong compositional telicity markers such as the resultative particles *auf* and *aus*. Second, at age 4 German-speaking children are sensitive to weak compositional markers of telicity such as quantized objects. They

interpret transitive sentences with a quantized object as telic or atelic, just as the adult subjects in our study do. Third, contrary to semantic theory, quantized objects are ambiguous. Even if used with the same verb, the quantized object can either refer to the object as a whole (telic reading) or simply to the specific object mentioned previously in the discourse (atelic reading). This specificity effect appears to sometimes override the telicity effects. Further research is needed to develop a more differentiated analysis of quantized objects as weak compositional telicity markers.

Acknowledgements

We thank the audience at the GALA conference in Palmela, Portugal, for comments on an earlier version of this work. Discussions with Angeliek van Hout, Angelika Wittek, Bart Hollebrandse, Tom Roeper, Elena Gavruseva, Nicholas Asher, Manfred Krifka, and Klaus von Heusinger were also very helpful. We are grateful to the teachers of the daycare centers in Konstanz, Germany, and to the children for their participation in the study. We would also like to acknowledge the help of Constanze Saettler and Yvonne Poloczek in running the subjects. The research presented here has been supported by a grant from the Deutsche Forschungsgemeinschaft to Zvi Penner (SFB No. 471).

References

Comrie, Bernhard. 1976. *Aspect*. Cambridge, Mass: Cambrigde University Press.

Krifka, Manfred. 1989. Nominal reference, temporal constitution, and quantification in event semantics. In R. Bartsch, J. van Benthem, & P. van Emde Boas (eds.), *Semantics and Contextual Expression*, 75-115. Dordrecht: Foris.

Penner, Zvi, Petra Schulz & Karin Wymann. In prep. Learning the meaning of verbs: what distinguishes language impaired from normally developing children? Special issue of *Linguistics*.

Pustejovsky, James. 1991. The syntax of event structure. *Cognition* 41: 47-81.

Pustejovsky, James. 1995. *The Generative Lexicon*. Cambridge, Mass: MIT Press.

Schulz, Petra, Karin Wymann & Zvi Penner. 2001. The early acquisition of verb meaning in German by normally developing and language impaired children. *Brain and Language* 77: 407-418.

Schulz, Petra, Zvi Penner & Karin Wymann. In press. Comprehension of resultative verbs in normally developing and language impaired children. In N. Hewlett, L. Kelly & F. Windsor (eds.), *Themes in Clinical Linguistics and Phonetics*, Mahwah, NJ: Erlbaum.

van Hout, Angeliek. 1998. On the role of direct objects and particles in learning telicity in Dutch and English. In A. Greenhill et al. (eds.), *Proceedings od 22th BUCLD*, 397-408. Somerville: Cascadilla Press.

van Hout, Angeliek. 1999. On the role of direct objects and particles in learning telicity in Dutch. In B. Hollebrandse (ed.), *New Perspectives on Language Acquisition*. University of Massachusetts Occasional Papers 22, 87-194. GLSA, Amherst.

van Hout, Angeliek. 2000a. Projection based on event structure. In P. Coopmans, M. Everaert & J. Grimshaw (eds.), *Lexical Specification and Insertion*, 403-427. Amsterdam: John Benjamins.

van Hout, Angeliek. 2000b. Event semantics in the lexicon-syntax interface: verb frame alternations in Dutch and their acquisition. In C. Tenny & J. Pustejovsky (eds.), *Events as grammatical objects. The converging perspectives of lexical semantics and syntax*, 239-282. CSLI publications,

Verkuyl, Henk J. 1972. *On the compositional nature of the aspects*. Dordrecht: Reidel.

Verkuyl, Henk J. 1993. *A theory of aspectuality*. Cambridge, Mass: Cambridge University Press.

Wittek, Angelika. 1998. Zustandsveränderungsverben im Deutschen - Wie lernt das Kind die komplexe Semantik? In J. Meibauer & M. Rothweiler (eds.), *Das Lexikon im Spracherwerb*, 278-295. Tübingen: Francke.

Wittek, Angelika. 1999. „... and the prince woke the Sleeping Beauty again." Learning the meaning of change-of-state verbs: a case study in German. Ph.D.thesis. MPI Nijmegen/University of Tübingen.

---

[1] Note that the intransitive use of *aufessen* (eat up) and *austrinken* (drink up) is grammatical in German.

[2] The stories were designed so that any pragmatic bias regarding the completion of the eating- or drinking-event was avoided. Thus, the protagonist was depicted as neutral as possible with regard to his liking or dislinking of any food or regarding his intention to finish all of the food or not.