Aspect, tense and modality: theory, typology, acquisition
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Part III  Acquisition

Introduction to Part III

In Chapter 1 it was hypothesized that universals in general and implicational hierarchies in particular describe restrictions on possible language systems in adult and in child language. In Part II it was found that the Scope Hierarchy is to a large extent reflected in TMA systems in adult language. Part III will discuss the TMA systems in child language. The Scope Hierarchy, $\pi_1 \subset \pi_2 \subset \pi_3$, predicts that the presence of $\pi_3$-operators in a language implies the presence of $\pi_2$-operators and the presence of $\pi_2$-operators implies the presence of $\pi_1$-operators, but not the other way around (see 5.4.3). It is hypothesized that this implicational hierarchy also holds for different stages of first language acquisition. There will be no stage in child language in which $\pi_2$-operators are present, but $\pi_1$-operators are not, or in which $\pi_3$-operators are present, but $\pi_2$- and $\pi_1$-operators are not. This entails that the acquisition order of operators follows the direction of the hierarchy: children will start out with narrow scope operators ($\pi_1$), that express aspect, participant-oriented modality, and property quantification; the semantic functions of these operators help in building up a proper description of a state of affairs (see 2.4). They are presumably conceptually the least complex and the most basic in young children’s conversations, which, as we know, are mainly about the here-and-now. After this, children will acquire operators with medial scope ($\pi_2$) that express tense, event-oriented modality, irrealis and event quantification. The semantic functions of medial scope operators are more abstract: they modify the situating function of the utterance. As the conversations of children more and more concern the there-and-then, these functions will gradually emerge. Finally, operators with wide scope ($\pi_3$), i.e., proposition-oriented modality and evidentiality, are acquired. These operators modify the presentation of the content that is transferred from speaker to addressee, and are the most complex and abstract. Whether the acquisition of TMA expressions in fact starts out with $\pi_1$-operators, followed by $\pi_2$-operators and $\pi_3$-operators, so that there is no stage in language acquisition that is not in accordance with the Scope Hierarchy will be investigated in detail for the acquisition of English (Chapters
and in a more general approach for the acquisition of 24 other languages (Chapter 10).

Before starting these chapters on acquisition, however, it is necessary to examine briefly some presumptions that have been suggested for the acquisition of TMA systems. First, several proposals will be discussed that concern the acquisition of tense and aspect. Second, an important hypothesis with respect to the acquisition of different types of modality will be discussed.

There has been a major discussion on the semantic interpretation of early tense and aspect forms in child language. As the Scope Hierarchy does not so much concern forms, but rather the semantic functions of TMA expressions, the semantic interpretation of TMA forms in child language is of great importance to the study of the acquisition of TMA systems. A major cluster of related approaches to tense and aspect forms in child language claims that tense and aspect forms in child language mark situation types. Early studies on the acquisition of tense and aspect in English (R. Brown 1973), Italian (Antinucci & Miller 1976) and French (Bronckart & Sinclair 1973) found that young children use their tense/aspect morphemes almost exclusively with certain situation types: past or perfective forms were used with telic (punctual) events; present or imperfective forms with states and progressives or imperfectives with dynamic atelic activities. These findings were later confirmed for English (L. Bloom, Lifter, & Hafitz 1980; Clark 1996; Harner 1981; McShane & Whittaker 1988), and supported by crosslinguistic evidence from Turkish (Aksu-Koç 1988, 1998), Greek (Stephany 1997) and Cantonese (Erbaugh 1978). The close connection between tense/aspect morphology and situation type led to the hypothesis that early tense/aspect forms in child grammar would not be used to encode tense and aspect, but rather to encode event type (lexical aspect). Children would thus use past tense morphology to indicate that the event is telic and progressive morphology to indicate that the event is atelic. It was proposed that this non-adult like use of morphemes stems from a cognitive limitation to mark temporal deixis; children up to about 2;6 lack an abstract concept of time. This hypothesis is referred to in the literature as the Aspect Before Tense Hypothesis (L. Bloom et al. 1980), the Defective Tense Hypothesis (Weist, Wysocka, Witkowska-Stadnik, Buczowska, & Konieczna 1984) or the Aspect First Hypothesis (Wagner 1998).

Related to the Aspect Before Tense Hypothesis is the Language Bioprogram Hypothesis, formulated by Bickerton (1984). He tries to account for the fact that children at such an early age distinguish between situation types by positing that children have innate knowledge of the universal distinction between process and state and punctual and non-punctual events. In a similar vein, but different on details, Slobin (1985) has suggested the Basic Child Grammar Hypothesis, that states that children have prelinguistic knowledge of the
distinction between process and result. Notice that Slobin, in contrast to Bickerton, does not make any claims as to whether these concepts are innate or acquired and that Slobin’s pre-programmed concepts—process [-telic] versus result [+telic]—are different from Bickerton’s—process [+dynamic] versus state [-dynamic] and punctual [+punctual] versus non-punctual [-punctual].

Another approach related to the Aspect Before Tense Hypothesis is the Prototype Account (P. Li & Shirai 2000; Shirai & Andersen 1995). Shirai, Li and Andersen stress that the association between certain situation types and certain tense/aspect morphemes is not specific for child language, and reflects, in their terms, naturalness of combinability. By this, they mean that in discourse situations, there are prototypical or unmarked combinations between certain tense/aspect categories and certain event types.\(^1\) Of events that have a clear end or result, it is often the end state that is relevant to human beings, for example when one has arrived at a location, something has been finished, food has been eaten up, etcetera. Therefore, at the points at which one comments on it, the event is likely to have ended. Furthermore, many telic events, such as fall, break, drop, or spill, last for such a short interval that it is nearly impossible to communicate about these events when they are still ongoing. Therefore, telic events prototypically combine with perfective aspect that presents the event as a whole, including its completion, or with past tense that stresses that the endpoint has been reached. On the other hand, for real world activities that have some duration in time, like playing, drawing a house, reading, peeling an orange, it is more probable that the inner phase is relevant to human beings. Durative activities or processes in which one is involved or which one observes—the wind blowing, a dog barking, a plane flying—are therefore more likely to be ongoing at the moment at which one comments on it than punctual events: therefore, durative situation types with a clear internal dynamic structure prototypically combine with imperfective aspect, that focuses on the internal structure of an event, or with present tense, which indicates that the event is overlapping speech time. The association between tense/aspect morphology and situation type is not limited to child language: in the input to children the relation is also present, although less strong (Aksu-Koç 1998; Andersen & Shirai 1996; Stephany 1981). The Prototype Account assumes that on the basis of distributional analysis, children create semantic representations of tense/aspect morphology that are restricted to the prototypical situation type of the morphological category. The children’s semantic representations at that point exclude the combination of tense/aspect morphology with non-prototypical members.

\(^1\) A similar claim is made for the relation between tense on the one hand and aspect or modality on the other hand, among others by Chung & Timberlake (1985). Compare their citation in 3.4.5.
If the above interpretations of early tense and aspect forms are correct, tense and aspect forms mark situation types, then this implies that tense and aspect forms should not be considered operators in the speech of young children. They do not yet constitute a (limited) TMA system. Whether this interpretation can indeed account for the data will be discussed in Chapter 9. In this chapter, the data on English language acquisition will be thoroughly re-examined to find out whether there are grounds for interpreting the tense and aspect forms as marking situation type. An alternative explanation will be presented that can account for the results, the Discourse Topic Hypothesis.

Although many researchers have claimed that early tense and aspect forms in child language are used with non-adultlike meanings, there are also researchers that have claimed the opposite: early tense forms in child language would mark tense semantics from the start. This position is defended, among others, by Smith (1980), Weist et al. (1984), Smoczyńska (1985) and Behrens (1993). The assumption is that children have no pre-established concepts that are mapped onto forms, but are from the start very sensitive to their input language. By analyzing form-function patterns they find out how their language divides up the tense/aspect domain, which semantic notions are encoded in their language and what the forms are that encode the distinctions. The above mentioned researchers found that past tense markers in child English, Polish and German occasionally refer to non-resultative and to non-immediate past and that although tense markers combine predominantly with one situation type, children use them from early on also with other situation types. There is thus no one-to-one relation between situation type and tense marking. Tense is used independently from situation type and not redundantly. As children use tense forms in appropriate, target-like contexts, it is assumed that these forms are used with target-like semantics. If the second approach to early tense and aspect forms is correct, then the use of adultlike forms may be taken as the use of adultlike semantics. Whether this interpretation is tenable from a crosslinguistic perspective will be discussed in 10.5.2, after the exposition of crosslinguistic data on the acquisition of TMA systems.

Part III is build up as follows. In Chapters 8 and 9, the acquisition of TMA in English will be investigated in detail: Chapter 8 focuses on the acquisition of TMA expressions and Chapter 9 explores the relation between TMA markers and situation type and the possible semantic interpretation of early TMA forms. Chapter 10 discusses the acquisition of TMA in a crosslinguistic perspective. To what extent an adultlike interpretation of early child forms can account for the data will also be evaluated in this chapter.

The crosslinguistic data in Chapter 10 will be the basis for exploring if there is a universal development of the semantics of tense and aspect. There have been to date two models that try to describe the developmental steps in the
acquisition of tense semantics, formulated by Weist (1986) and Christensen (2003). Weist proposed a stage model of the development of the temporal system, which is based on the assumption that children’s general conceptual development precedes linguistic encoding. The linguistic encoding of certain temporal relations is considered sufficient evidence that the conceptual knowledge has evolved. Although Weist makes no explicit claims about the relation between conceptual and linguistic development, his figures suggest that a cognitive change almost immediately results in a linguistic change (Weist 1986: 371).

The first stage, the speech time system, begins when children acquire the notion of object permanence, around 1;0. Children only refer to the here-and-now and Reference time (RT) and event time (ET) are simultaneous to speech time (ST) (see 3.4.1 for an explanation of RT, ET and ST). Verb forms are unanalyzed or frozen forms: they are not yet used contrastively and children do not encode tense, aspect or modality by using them. The only linguistic distinction children make is between statements and requests.

The second stage, the event time system, develops around 1;6, when children become capable of taking an external and internal perspective on situations. An external perspective focuses on event properties as complete, punctual and resultative and an internal perspective on properties as ongoing, continuative, durative and incomplete. The linguistic temporal system is now mono-referential: ET may be located before, after or simultaneous to ST, whereas RT = ST. If external or internal perspective is encoded in a language (for example, perfective in Polish, progressive in Spanish), the distinction will be acquired and marked rapidly by the child. There is a natural relation between internal perspective and speech time and external perspective and anterior events. In the event time system, children can make the distinction between ongoing events during the speech time interval and complete events anterior to speech time. In addition, they (…) express their intentions and desires concerning potential subsequent events, i.e. a notion of “irrealis” (Weist 1986: 366).

What is not expected and not attested is an internal perspective on past events, a past progressive.

The third stage, the restricted reference time system develops around 3;0, when children become capable of ‘temporal decentration’: they take other viewpoints on time than only the here-and-now. In the linguistic system, RT is now located before, after or simultaneous to ST and is established by temporal adverbs or adverbial clauses. Weist assumes that in the early reference time system, RT is either simultaneous to ST (like in the previous stage) or simultaneous to ET. RT is thus not yet a completely independent reference point in time. This is a transitional stage to an adultlike bi-referential temporal
system, which develops around 4;0: it is a free reference time system, in which ST, ET and RT represent three different points in time. The use of words for ‘before’ and ‘after’ signals flexibility in the reference system. A series of experiments in English, Polish and Finnish has supported the claim that children acquire bi-referential problems later than mono-referential problems (Weist, Aranassova, Wysocka, & Pawlak 1999; Weist, Lyytinen, Wysocka, & Atanassova 1997; Weist, Wysocka, & Lyytinen 1991).

A second model that tries to account for developmental steps in the acquisition of tense and temporal expressions is described by Christensen (2003). It has a completely different focus than Weist’s model. According to Christensen, temporal information conveyed in the grammatical tense system is vague and incomplete so that the speaker has to supply additional temporal information. The exact temporal reference point is determined by a deictic, anaphoric or explicit specification. Deictic specification rests on extra-linguistic factors present in the discourse space. In (1) for example, the temporal and physical location of daddy are determined by the discourse situation (Christensen 2003: 33):

(1) 
—Where is daddy? —He is in the kitchen.

In the first stage of language acquisition, only deictic specification of the finite verb is available to the child:

This means that the child acquires the essential formal items of the tense system and establishes the basic temporal meanings associated with these items in a context where the more specific temporal reference of the finite verb is determined by factors present at the time of speech. Since the child is not able to specify the temporal meaning of the finite verb by linguistic means (i.e. anaphorically or explicitly), the use of temporal items with reference to remote past (or future) events or states is highly restricted during the basic stage. (Christensen 2003: 34)

This furthermore means ‘that the child has to rely on his interlocutor’s ability to make an interpretation starting either from objects present in the discourse space or from mutual experiences or memories.’ (Christensen 2003: 41) Later on, the child acquires linguistic forms to specify the temporal location. The first way is by anaphoric specification: the time of another event specifies the temporal location of the finite verb, consider (2) (2003: 33):

(2)  
[(i) We went to the Coliseum,] (ii) and there he was.

In (2) the time of the event expressed by (i) specifies the time of the state described by the finite verb in (ii). The second way to specify temporal
locations is by explicit specification, the use of time adverbials, such as the use of *last summer* or *in 1998* in (3) (Christensen 2003: 34).

(3)  \{ *last summer*/ *in 1998* \} *Karin went to Rome.*

According to Christensen's approach, the temporal system of a child does not fundamentally differ from an adult system: already at the basic stage it is fundamentally identical to one contextual type of the adult temporal system.

The models on tense acquisition of Weist and Christensen will be discussed again in 10.5.2.2 to see if they can account for the crosslinguistic data. In this chapter an alternative model on the acquisition of tense and aspect will be proposed.

A further important point that has to be discussed before presenting the actual data concerns the acquisition of different types of modality. There is some evidence in the literature that epistemic modality is acquired after deontic modality (e.g. Shephard 1982; Stephany 1986; Wells 1979, 1985). Note that this roughly corresponds to the hypothesis that follows from the Scope Hierarchy, as deontic modality primarily has narrow or medial scope and epistemic modality medial or wide scope. Both Stephany (1986) and Papafragou (1998; 2000) present possible explanations for the acquisition order of the different modal meanings. Stephany (1986: 393) claims that the acquisition order is a logical consequence of Piagetian cognitive development. From about 2 or 3 years old children begin to develop a notion of possibility as distinct from reality, where the notion of possibility is at first only understood in terms of potential future. Around age 7 or 8 children begin to understand the notion of undecidability and not before age 11 or 12 children develop the capacity of hypothetical reasoning. However, symbolic play and the ability to pretend, emerging around 1;6, may be an important precursor to the development of a concept of possibility.

Papafragou (1998; 2000) seeks the explanation for a later development of epistemic modality in the development of a theory of mind:
My hypothesis is that epistemic uses of modals mark operations on mental representations: what the speaker engages in (…) in epistemic modality is (potentially conscious) reflection on the content of her own mental states. In other words, successful use of epistemic modals requires the speaker to perform deductive operations on abstract propositions (i.e. on the content of her beliefs as such) and to arrive at a warranted conclusion. Such metacognitive abilities are, I suggest, part and parcel of the child’s developing theory of mind, and as such are expected to reach an adequate level only well after the third birthday. (Papafragou 1998: 373)

Whether the data on modality are in accordance with the presented explanations will be discussed in 10.5.3.3.

One of the main methodological issues in the next chapters is determining the moment of acquisition: when is a certain TMA expression acquired? Determining the moment of acquisition is a permanent question in research on language acquisition, especially because the appearance of forms does not necessarily imply the acquisition of the corresponding functions. On the other hand, children may communicate certain intentions without using the appropriate forms. In the first place, I have concentrated on the acquisition of adultlike forms. In Chapter 8 on English, I have applied several analyses to shed light on this matter from different viewpoints. Quantitative and qualitative measures are applied to determine the productivity of TMA expressions. The acquisition of TMA systems in the crosslinguistic data had to be determined on the basis of less detailed criteria for productivity. The semantic interpretation of early TMA expressions will be based on an inspection of the universal functions and contexts of use of the forms in child language and a comparison to adult use of those forms. This is the focus of Chapter 9 and section 10.5.