Acquisition of Aspectual Meanings in a Language with and a Language without Morphological Aspect

Angeliek van Hout
University of Groningen

1. Introduction

This comprehension study on aspectual form-to-meaning correspondences set out to see if the presence of aspect as morphological category in a language makes the acquisition of aspectual form-meaning pairs relatively easy in comparison to a language that lacks such an aspect category. In Polish, aspect is a grammatical category—all verbs are marked as perfective or imperfective—and tense is marked separately. In Dutch on the other hand, different past tenses carry various aspectual meanings, and so tense and aspect are conflated. The results of the study show no developmental advantage of having aspect as a grammatical category, that is, Polish children do not acquire the meanings of perfective and imperfective aspect at an earlier age than Dutch children acquire the aspectual meanings of their past tenses. On the contrary, the same developmental path shows up in both languages equally: the target meaning of Polish Perfective aspect and Dutch Present Perfect are acquired before that of Polish Imperfective aspect and Dutch Periphrastic Past Progressive (so-called *aan-het* construction).[1] Specifically, the 2 and 3-year-old children in this study have acquired the completion entailment of Polish Perfective Aspect and Dutch Present Perfect, but do not yet know that Polish Imperfective aspect and Dutch Past Progressive imply ongoingness.

The acquisition of perfective meaning (completion entailment) thus comes earlier than imperfective (ongoingness implicature), independent of how these aspects are marked in the language, be it as dedicated morphological category in Polish or as conflated tense/aspect form in Dutch. This does not support the idea that all aspect forms in languages that have a grammatical category of aspect are easy to acquire. Instead it suggests that meaning issues, rather than form properties, determine the learnability of aspectual form-meaning pairs. Some meanings take longer to acquire than others, independent of how they are expressed in the language. The interaction of lexical and grammatical aspect plays a crucial role in determining what kinds of meanings are harder to acquire than others. I argue that aspectual meanings that involve aspect shift are difficult to compute for 2 and 3-year-olds, here, telic predicates combined with imperfective or progressive aspect morphology.

In section 2 I provide a brief background on the Polish aspects and Dutch past tenses and formulate two acquisition hypotheses. Section 3 presents the experiments with Dutch and Polish learners and in section 4 I discuss the implications of the results.

2. Polish aspects and Dutch tenses: How are form and meaning issues at play in acquisition?

Polish, like the other Slavic languages, has two aspectual paradigms for all verbs in all tenses: perfective and imperfective. Morphologically unmarked verb forms are imperfective; perfective variants are typically derived by prefixation. Any given imperfective verb may combine with a number of different perfective prefixes, each of which adds a perfective meaning plus possibly additional meaning changes. The prefix that just adds perfectivity and no further meaning is the so-called neutral perfective; it forms a perfective-imperfective pair with the unmarked imperfective. (1) illustrates one such pair.

(1)	a.	Mickey budowal zamek mickey built^{IMP} castle 'Mickey was building a castle.'	Imperfective aspect	*Polish*
	b.	Mickey z-budowal zamek mickey z-built^{PERF} castle 'Mickey built a castle.'	Perfective aspect	

[1] I capitalize the first letters of the names of tense or aspect forms, and use lower case letters when I refer to their aspectual meanings.

Perfective verb forms express one of a number of different meanings, including completive aspect, inchoative aspect, and delimitative aspect. The lexical aspectual class of the verb and the meaning contribution of the prefix determine which aspectual meaning a prefixed verb has (Młynarczyk, 2004). This study focuses on telic predicates from the accomplishment class and tested them with imperfective and perfective aspect morphology. The perfective prefixes that were used were neutral perfectives which add completive aspect. Completive aspect asserts the initial and final boundaries of an event, thus entailing culmination of an event described by a telic predicate (in (1b) building till the castle was completed). Imperfective aspect in Polish also has a range of meanings, including progressive aspect, but also habitual aspect and "factive" aspect (used to talk about facts for which it is understood that both speaker and hearer know it for a fact). In narrative contexts that describe a series of events, which was the set-up of the experiment, Imperfective aspect typically expresses progressive aspect. Progressive aspect asserts that an event was ongoing at a given reference time, without making any claims about the final boundary.

Dutch uses different past tenses to express different aspectual meanings (Boogaart, 1999). In addition to carrying aspect these past tenses express anteriority (past time reference). I discuss here the Periphrastic Past Progressive, (2a), which functions just like Polish Imperfective in expressing progressive aspect, and the Present Perfect, (2b), which is similar to Polish Perfective and carries completive aspect.[2] Both tenses are analytical: the Past Progressive is formed with a finite form of auxiliary *zijn* 'be' and a construction of *aan het* plus the infinitive form of the verb; the Present Perfect combines a finite form of auxiliary *hebben* 'have' with the past participle form of the verb.

(2) a. Mickey was een kasteel aan het bouwen — Periphrastic Past Progressive — *Dutch*
mickey was a castle on the build$^{\text{INFINITIVE}}$
'Mickey was building a castle.'

b. Mickey heeft een kasteel gebouwd — Present Perfect
mickey has a castle built$^{\text{PARTICIPLE}}$
'Mickey built a castle.'

The Past Progressive functions like a straightforward progressive: it focuses on an event in progress and makes no claims about its final boundary. The past tense on the auxiliary locates this ongoing event before the time of speaking. The Present Perfect is used to refer to past times. It asserts that an event reached its culmination at a time in the past, and so for telic predicates it entails completion. Even though the tense on the auxiliary is present, a Present Perfect combines well with past time adverbials, like the perfects in French and Italian, but unlike the perfect in English (note that I have translated (2b) with a Simple Past form in English).

A comparison of the aspectual form-meaning pairs in the two languages shows that the Polish forms have pure aspectual meanings, whereas the Dutch forms conflate both temporal and aspectual notions. One hypothesis claims that it should be easier to acquire the meanings of forms that carry just aspect as compared to forms that conflate tense and aspect meanings. In both types of languages a child must discover which particular aspectual meaning a certain form carries. In addition, in languages with conflated forms, she must also find out that a certain form simultaneously carries two kinds of meanings (one temporal and the other aspectual), which seems intuitively a more difficult task.

Independent of the form-meaning mapping problem and the different ways in which it pens out in different languages, a child needs to work out how the interaction of lexical and grammatical aspect affects aspectual meanings. Following De Swart's (1998) framework, I take grammatical aspect to be a semantic layer operating on top of lexical aspect (and tense operating on top of grammatical aspect). Lexical aspect is given by the eventuality description as determined by the verb phrase, and grammatical aspect involves operators or aspect shifters as required by aspectual morphology, aspectual tenses and temporal adverbials. Telic predicates express culmination (a *telos* 'goal'). The combination of a telic predicate

---

[2]In addition I tested the Dutch children in the experiment on a third past tense, the Imperfect Past (e.g., *Mickey bouwde een kasteel* 'Mickey build$^{\text{ImpPast}}$ a castle.'). For purposes of the present paper I have chosen to present the results of the Dutch Past Progressive, and compare them to Polish Imperfective, because the adult controls in the two languages showed the exact interpretation same pattern—both entail ongoingness. For Imperfect Past, Dutch adults preferred ongoing situations but also accepted completed situations, in contrast to Dutch Past Progressive and Polish Imperfective. See Van Hout (2005a) for an analysis of the adult interpretation patterns with three Dutch past tenses, and Van Hout (in press a, in press b) for a presentation of the results of the children with all three.

with Perfective aspect in Polish or a Perfect tense in Dutch highlights the culmination moment because this aspect/tense asserts the presence of a final boundary, and so the culmination moment is included and completion of the event is entailed. On the other hand, when a telic predicate combines with Imperfective aspect in Polish or the Progressive tense in Dutch, there is no such completion entailment. On the contrary, since progressive aspect asserts the ongoingness of an event at a certain time, it makes no claims as to whether or not the culmination moment is reached, and so completion is not entailed. In fact, for telic predicates the culmination moment that is given by the lexical aspectual event description is effectively stripped off when the predicate combines with progressive aspect. This effect has been described as a result of the operation of Aspect Shift (De Swart, 1998). The combination of telic predicates with perfective aspect does not involve such Aspect Shift, since the culmination moment is entailed.

So perfective and progressive aspect have opposite effects on telic predicates. One may posit that some lexical-grammatical aspect interactions are harder to establish than others in the acquisition process. In particular, the combination of telic and perfective is aspectually smooth: the culmination moment contributed by the lexical aspectual event description is preserved, and completion is reached; there is no need for Aspect Shift. The combination of telic and progressive, on the other hand, is semantically more complex: by asserting ongoingness, progressive aspect involves stripping off the culmination moment; Aspect Shift applies.

What is more important in setting the course of the acquisition path: learning dedicated versus conflated form/meaning associations, or the level of semantic complexity implied in the interaction of lexical and grammatical aspect, or both? Two hypotheses are formulated: one that focuses the role of form properties, the Form hypothesis in (3); the other stresses the importance of meaning properties, the Meaning hypothesis in (4). I spell out how the issues of aspect acquisition outlined are implied in each hypothesis.

(3) Form hypothesis: Properties of form/meaning correspondences affect the acquisition path.
The meanings of dedicated aspect forms, i.e., from morphological aspect paradigms, are learned earlier than those of conflated forms that carry more meaning in addition to aspectual meaning.

(4) Meaning hypothesis: Meaning complexity affects the acquisition path.
The interaction of lexical and grammatical aspect is easier to acquire when grammatical aspect affirms the properties of lexical aspect, as opposed to when the two are in conflict and Aspect Shift is needed to match them up.

The Form hypothesis predicts that the aspectual form/meaning pairs of the Polish aspects are acquired earlier than those of the Dutch tenses. The Meaning hypothesis predicts, for telic predicates, that the combination of telic plus Perfective or Perfect is easier than telic plus Imperfective or Progressive, independent of the language-particular forms these aspectual meanings are carried by[3]. Under this hypothesis it is expected that Dutch and Polish aspect acquisition follow parallel paths. Specifically, learners in both languages will first learn meanings of forms that do not involve Aspect Shift—telic predicates combined with Polish Perfective and Dutch Perfect, and will initially have trouble with Aspect Shift imposed by Polish Imperfective and Dutch Progressive aspect on telic predicates. Of course, it is also possible that the Form and Meaning hypotheses interact, in which case it is predicated that dedicated aspect forms that trigger no Aspect Shift on telic predicates are going to be acquired earlier than all others, i.e., Polish Perfective is learned before Dutch Perfect and the other aspect forms (Polish Imperfective and Dutch Past Progressive).

3. Aspect comprehension experiments in Polish and Dutch

3.1 Method

In order to test the Form hypothesis I included two different kinds of aspect languages in the experimental design, one with morphological aspect—Polish—and one without—Dutch. The Meaning hypothesis requires conditions with and

[3]For atelic predicates the Meaning hypothesis predicts the opposite pattern: atelic predicates with progressive aspect donot involve Aspect Shift and hence should be easier to acquire than the combination of atelic predicates with a Perfect or Perfective. For the latter, Aspect Shift triggers the addition of a boundary that is not present in the lexical aspectual description.

without Aspect Shift. We used telic, transitive predicates and tested them with Perfective aspect in Polish and Perfect tense in Dutch (no Aspect Shift) and Imperfective aspect in Polish and Progressive tense in Dutch (Aspect Shift).

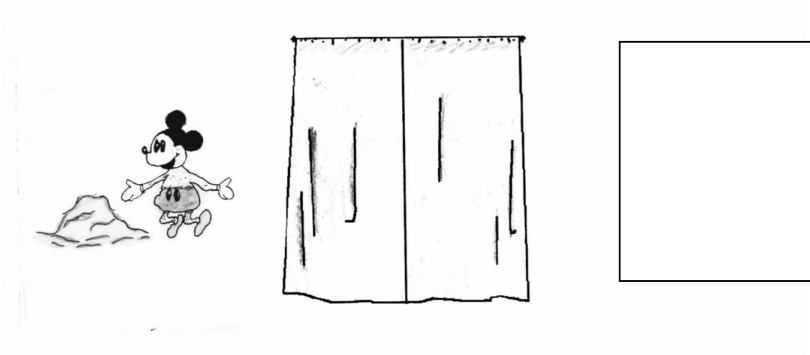
Participants: Thirty five Polish 2 and 3-year-olds (age range 2;0 to 3;11) took part in the study, as well as a group of 20 adults. The children were tested individually by native Polish research assistants in Wrocław, Poland. Thirty two Dutch children (age range 2;1-3;11, mean age 3;2) were recruited from three daycare centers in Groningen, each tested individually by a research assistant or myself. In addition a control group of 15 undergraduates from the University of Groningen participated. The adult participants in both languages were tested in a group using the same procedure as with the children; they wrote down their answers on predesigned answer sheets.[4]

Stimuli: The stimuli involved stories collected in a picture book. For each story the first picture introduces the story, the middle picture shows closed curtains and the final picture is missing. An example page is shown in Figure 1. This story is about castle-building and goes as follows.

(5) Illustration protocol:

One day Mickey Mouse was on the beach. He was playing in the sand. What would he build?
But then the curtains closed, so we couldn't see any further what happened. Let's ask the giraffe to look behind the doors.
[Giraffe looks behind curtains]
Giraffe, what did you see there?

Figure 1: Picture book page for castle-building story

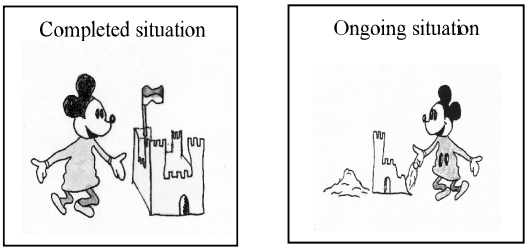


The giraffe spoke the test sentence which contained one of two forms: Perfective or Imperfective aspect in Polish, (1), and Present Perfect or Past Progressive in Dutch, (2). Then the experimenter showed two pictures and asked if the right picture was there. There were three different picture pair combinations: i) completion/ongoing, ii) completion/incomplete and iii) ongoing/incomplete. The completion picture showed Mickey turned away from a finished castle, not working at it anymore. The ongoing picture showed Mickey in the process of working at a sand building, the castle was clearly not yet finished. The incomplete picture showed a half-finished castle and Mickey walking away from it, having stopped his building activities. The three picture choices for the castle-building story are shown in Figure 2.

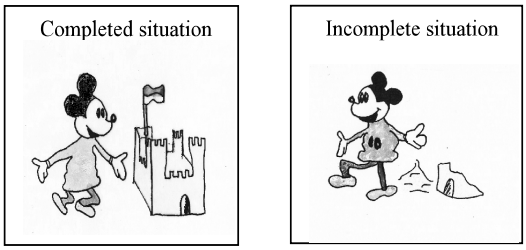
[4]I thank Bożena Rozwadowska for her help in setting up the Polish part of my reserach enterprise. I am very grateful to my Polish research assistants Katarzyna Adnowska, Jacek Lisowski and especially Marta Trojanowska-Gołka for their hard work and extensive email communications as well as to Ramona Wolsink for assisting in testing the Dutch children. I was pleased with the hospitality offered by daycare centers and kindergartens *Zlobek nr. 3* and *Przedszkole nr. 104* in Wrocław, Poland, and *PimPamPet, 't Knorretje* and *De Boomhut* in Groningen, The Netherlands.

Figure 2: Conditions of picture combinations for castle-building story

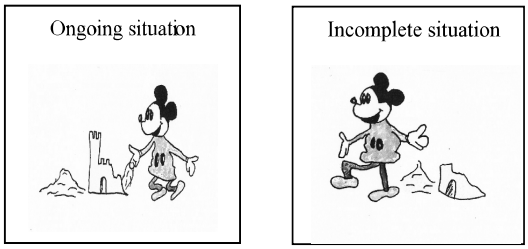
(i) Completion/Ongoing



(ii) Completion/Incomplete



(iii) Ongoing/Incomplete



Only telic, transitive verb phrases were used, such as *de auto maken* 'repair the car', *een bloem tekenen* 'draw a flower', *een vis eten* 'eat a fish'. Every VP predicate was used in only one story; some verbs were used twice but with different direct objects. It was important that all predicates were telic, so that the aspectual properties of the three tenses under investigation would show up as different entailments: the Perfect asserts completion, whereas the other two tenses lack this entailment.

Design: The design included two within-subject factors: aspect/tense (2 levels) and picture pair combination (3 levels). Language was a between-subjects factor. For each condition there were three items, yielding a total of 18 test items. The items were distributed over two parts, so that each part contained 6 items of the same aspect/tense. Featuring just one aspect/tense in each part instead of mixing in both aspects/tenses together should focus the participants on one aspect/tense at a time so as to present the task in its easiest format. Which aspect tense was tested in the first session and which in the next was counterbalanced across subjects.

Procedure: The child participants were tested individually in a quiet spot in their daycare center. They were tested in two sessions, close to each other, in most cases on consecutive days. The adult participants were tested in a group and were asked to write down their responses on an answering sheet. They were tested on one afternoon; each next part was given about an hour after the previous one (and they listened to a lecture in the meantime).

Interspersed with the test items there were three control items in each part for which the right picture was not among the two. These were used to ascertain that participants were paying attention and were able to say that neither picture qualified. A training session of four items during which subjects were made familiar with the procedure and the task preceded the test items.

Coding: Participants chose one of the situations as their answer (completion, ongoing, incomplete). Sometimes participants found that neither picture qualified (coded as a ''neither'' answer) and occasionally they said that both were possible (coded as a ''both'' answer).

3.2 Results

Figures 3-6 present the results for each aspect and tense in the two languages. Figures 3 and 4 compare Polish Perfective and Dutch Present Perfect; figures 5 and 6 compare Polish Imperfective and Dutch Past Progressive. The bars in each figure add up the means of each type of answer (complete, ongoing, incomplete, neither, both) for each picture pair condition, comparing children and adults.

Figure 3: Results Polish Perfective

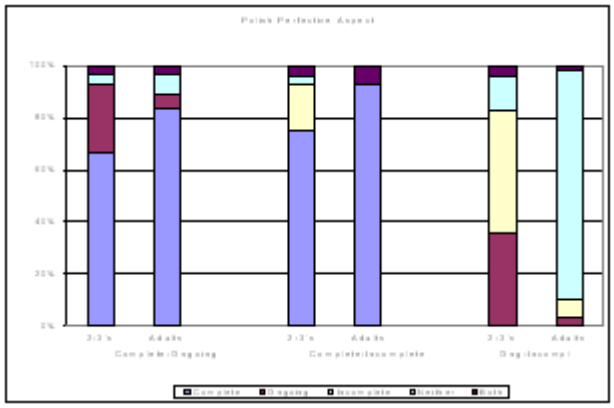
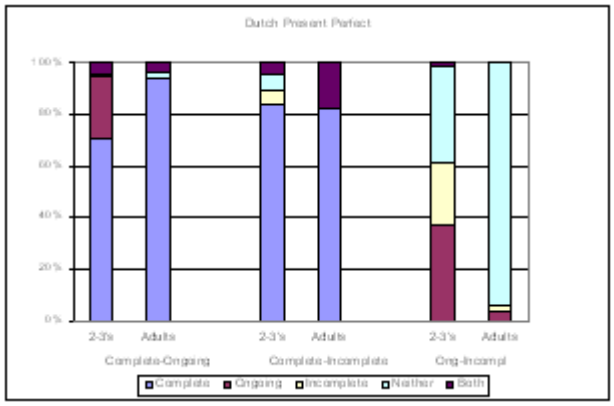


Figure 4: Results Dutch Present Perfect



The graphs with the Polish Perfective and Dutch Present Perfect results show that the adults as well as the children in both languages chose the completed situation when that was one of the two pictures presented (in the Complete/Ongoing and Complete/Incomplete conditions). When the completed situation was not an option, i.e., in the Ongoing/Incomplete condition, the adults said that neither picture qualified. The finding that ongoing and incomplete situations were not accepted for Perfective aspect and Present tense shows that this aspect/tense really entails completion. The children were not as good at saying "neither" in the Ongoing/Incomplete condition (although they were perfectly able to say neither in those control conditions which were obviously neither). Their answers—a mixture of ongoing, incomplete and neither—show that this condition created some confusion, in contrast to the other two conditions in which they show they have target-like knowledge of this tense/aspect.

Figure 5: Results Polish Imperfective

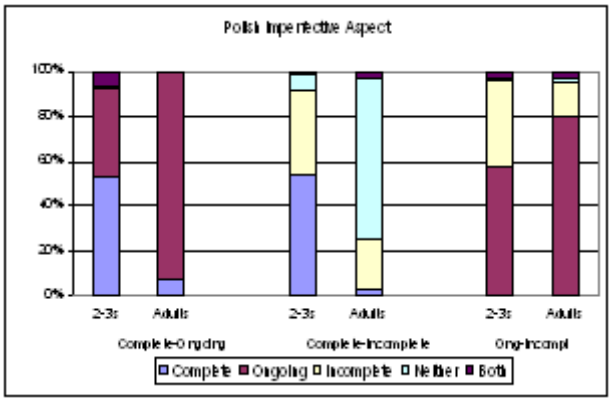
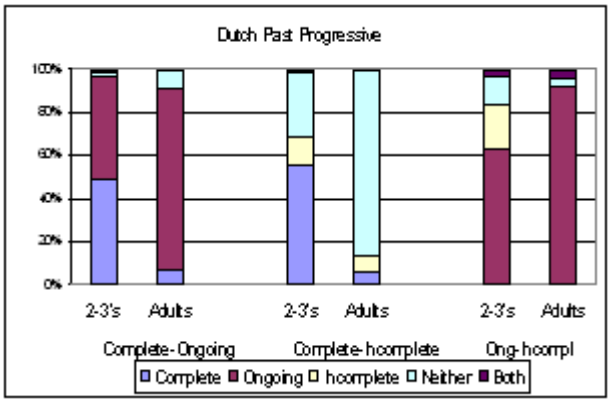


Figure 6: Results Dutch Past Progressive



The graphs with the results on Polish Imperfective and Dutch Progressive show that the children's interpretation patterns are different from those of the adults. The adults in both languages chose the ongoing situation for this tense/aspect, and when ongoing was not one of the presented pictures (in the Complete/Incomplete condition), the adults did not like either picture, saying neither is good. The children on the other hand were very liberal in their interpretation

of Imperfective and Progressive. They basically accepted any of the three kinds of situations for these aspects: ongoing, complete and incomplete, without any preference for one over the other (i.e., in each condition they chose either of the two presented pictures equally often).

3.3 Discussion

In adult Polish and Dutch, Perfective aspect and Perfect tense assert the final boundary of an event, thus entailing completion. Imperfective aspect and Past Progressive focus on the event in progress, and are anaphorically linked to a previous reference time given in the story context, entailing ongoingness at that time. Polish and Dutch 2 and 3-year-olds interpret Perfective and Perfect target-like, but do not properly restrict their interpretation of Imperfective and Progressive, allowing too many interpretations (ongoing, complete, and incomplete situations).

The overall result—that the children were perfect on Perfective and Perfect, but imperfect on Imperfective and Progressive—supports the Meaning hypothesis. Polish and Dutch learners follow parallel paths in their acquisition of the interaction of lexical and grammatical aspect. The semantics of the combination of telic predicates plus Perfective or Perfect is acquired before that of telic plus Imperfective or Progressive. This suggests that it is relatively easy to acquire the meanings of forms that do not involve Aspect Shift—telic predicates combined with Perfective or Perfect, whereas it is harder to assess the meanings of forms that require Aspect Shift— telic predicates with Imperfective or Progressive. The results do not support the Form hypothesis, which predicted a general advantage for Polish learners over Dutch learners as aspect is a morphological category in Polish, but not in Dutch. Apparently, the fact that aspect forms have purely aspectual meanings in Polish but are conflated tense/aspect forms in Dutch does not help or hinder development.

The adult results with Imperfective and Progressive are important in their own respect and show another property of these aspects, not yet discussed above. The finding that the adults only chose the ongoing situation with Polish Imperfective and Dutch Progressive was somewhat of a surprise. The semantics of imperfective and progressive aspect, as discussed in section 2, asserts that the situation was in progress without making claims about whether or not the final boundary is reached. In principle then, this aspect is compatible with ongoing situations, but also incomplete and completed ones. Not so, however, in the present experiment, as adults deemed only the ongoing situation acceptable. This restricted interpretation of the Imperfective and Progressive reveals another semantic feature of these aspects: they are anaphoric (Partee, 1984; Hinrichs, 1986). In a narrative context, an Imperfective or Progressive must anchor to an antecedent reference time and the time of the event in progress overlaps with that reference time; it does not move the story time forward (Kamp and Reyle, 1993; ter Meulen, 1995). In the story line of the experiment, the antecedent is the time at which the giraffe looked behind the curtains. A test sentence with an anaphoric tense—Imperfective or Progressive—links to that time and says that at that time the event must be in progress, hence, only an ongoing situation qualifies. The anaphoric nature of Imperfective and Progressive has been argued for in the semantic literature on the basis of intuitions. The present study provides empirical support for these intuitions.

4. Conclusions and discussion

While a number of comprehension studies have probed children's knowledge of aspect in single languages, this study is one of only two to use the same design across more than one language. As such it allows drawing conclusions about aspect acquisition across languages, in particular, which elements of aspectual development are universal and which are language specific. The main finding in the comparison of Polish and Dutch learners was that the acquisition of the completion meanings of perfective aspect and perfect tense is acquired early in the two languages, whereas imperfective and progressive aspect initially present difficulties. Does this pattern point to a universal property of aspect development?

Three studies on Russian using various methodologies for testing aspect comprehension also found that 2;6 to 3-year-old children have acquired the completion entailment of perfective aspect. Stoll (1998) showed children two movies with two puppets doing the same kind of action on a split screen (e.g., read a book); in one movie the event culminated while in the other it was in progress throughout the movie. Stoll asked a *who*-question with Perfective aspect (e.g., the Russian version of *Who read*^{PERF} *a book?*) and 2;6-year-olds reliably pointed to the complete movie. Vinnitskaya and Wexler (2001) tested Russian Perfective (and Imperfective) using a sentence-to-picture matching task, reading one sentence to the child (either perfective or imperfective) and showing three pictures: a completed situation, an ongoing situation and a distractor picture showing the wrong verb. The 3-year-olds succeeded in this task and chose completed situations for Perfective (and ongoing situations for Imperfective, see below). Kazanina and Philips (2006) showed their participants

an acted-out story of a puppet walking along a road and doing a certain action at various points along the way, adapting a design from Wagner (2001) along the ways Van der Feest and Van Hout (2002) used it. At one spot the puppet completes the action (for example, building a smurf from pieces), at another spot she starts doing another smurf-building but abandons the project after an interruption (the incomplete situation: some pieces are not used, no smurf is built) and at a third location she considers building yet another smurf, but does not even start it. Kazanina and Philips found that all of their participants (age range 3-6, mean age 4;7) correctly restricted their interpretation of Perfective aspect to complete situations only (details on the interpretation of Imperfective follow below).

In another multiple-language study, Weist, Wysocka and Lyytinen (1991) tested English children on Simple Past and Past Progressive and Polish ones on Perfective and Imperfective aspect. They used a forced choice sentence-to-picture matching task, showing children two pictures (one depicting a completed situation, the other an ongoing situation) and reading two sentences to them with the two tense/aspect forms. The children had to match up each sentence with a picture. Polish and English 2;6-year-olds succeeded at correctly differentiating the two Polish aspects and English tenses.[5] As just mentioned, the same goes for the Vinnitskaya and Wexler (2001) study on Russian: 3-year-olds correctly matched perfective with completion and imperfective with ongoingness. These last sets of results stand in contrast to my results: whereas Weist et al. and Vinnitskaya and Wexler find that children seem to know that Russian and Polish Imperfective aspect and English Simple Past have an ongoing meaning, the children in my study allowed complete and incomplete interpretations along with ongoing interpretations.[6]

The Kazanina and Philips (2006) study also shows that Imperfective aspect poses some initial difficulties. The specific purpose of this study was to find out if children know that sentences with Imperfective aspect may refer to incomplete situations, while those with Perfective aspect cannot. Their results show, like mine, that children know that Perfective aspect must refer to complete situations. The results on Imperfective aspect show an intriguing pattern. When participants were asked *where*-questions that contained perfective and imperfective verbs (e.g., the Russian versions of *Where was he assembling^{IMP} a smurf? Where did he assemble^{PERF} a smurf?*), about half of the children chose only the complete situation for Imperfective aspect (the other half behaved target-like and pointed to both the complete and the incomplete situation). So half of the children did not interpret imperfectives correctly, in particular, they were overly restricted and only accepted complete situations. This was when the test sentences were given as main clauses without temporal adverbials. However, when Kazanina and Philips added a *while*-clause that explicitly gave the interval during which the event described by the main clause had to be evaluated and asked for a truth value judgment (e.g., the Russian versions of *While the boy was watering the flowers, the girl cleaned^{PERF}/was cleaning^{IMP} the table*), these same children accepted complete as well as incomplete situations for imperfective test sentences, displaying target-like knowledge of Imperfective aspect after all.

Why do young learners have trouble interpreting Imperfective aspect target-like, at least in my study and the one by Kazanina and Philips? Kazanina and Philips (2006) show that Russian learners have problems with Imperfective aspect, unless they are provided with an explicit temporal anchor to link the time of the main clause to (by way of a temporal adverbial, the *while*-clause). They conclude that young learners essentially know the ongoing semantics of Imperfective aspect. In their words, children know that imperfective takes an "insider" perspective, or, formally, reference time R is included in the time of the event E. But they are not yet able to choose the right temporal perspective on an event when interpreting an imperfective sentence. When they are explicitly given the proper temporal interval, i.e., when the reference

---

[5]Weist et al. (1991) also tested Finnish learners with the same paradigm, varying partitive and accusative case on the object, which is the Finnish equivalent of perfective and imperfective aspect (although it is not quite the same, see Kiparsky, 1998). Finnish 2;6 and 3;6-year-olds did not succeed the task, unlike their Polish and English peers.

[6]Wagner (2002) also used a forced choice sentence-to-scene matching task with English learners, very similar to the one in the Weist et al. (1991) study. She showed children two kinds of situations set up with toys (one complete, the other incomplete) and asked them to link match the situations to two sentences (e.g., *I filled in the puzzle* versus *I was filling in the puzzle*). In contrast to Weist et al.'s findings, the 2 and the 4-year-olds in Wagner's study did not differentiate their interpretations of Simple Past and Past Progressive. Wagner contributes this difference to the fact that her participants were not able to interpret the aspectual differences, because they were only shown the result of the complete or incomplete event on the object (a completely filled in puzzle versus an incomplete puzzle that lacked a few pieces), whereas Weist et al. also showed how the agent of the event was either finished or still involved. She concludes that young children need to see how the Agent is (or is no longer) involved when they are interpreting aspectual differences.

time R is spelled out in the *while*-clause, however, it becomes clear that they know that Imperfective may refer to incomplete situations.

I think that Kazanina and Philips' explanation of the finding that children's performance on Imperfective aspect improves dramatically when they are provided with a *while*-clause is on the right track, but there are still a couple of questions. I do not quite see how it explains why children only accepted the complete situation for imperfective sentences when no *while*-clause is provided. If their problem is choosing the proper temporal perspective R, why should that lead to only accepting the complete situation (rather than only the incomplete situation, or both)? Moreover, the interpretation of Perfective aspect also involves choosing a proper temporal interval (formally, the time of the event E is included in reference time R). So why are children able to interpret perfectives target-like, i.e., choose the proper time interval for perfectives, but not for imperfectives? And, how could the analysis be extended to account for children's overly liberal behavior in my study? My explanation combines the hypothesis that Aspect Shift is hard for children and the idea, already advanced in van Hout (2005b), that children have trouble establishing proper temporal intervals for anaphoric aspects, and integrates these two ideas with Kazanina and Philips' explanation that *while*-clauses help because they provide explicit time intervals.

The fact that the Russian learners in the Kazanina and Philips (2006) study initially only accepted complete situations with simple imperfective clauses can be straightforwardly accounted for by the Meaning hypothesis postulated in section 2. Children do not like to apply Aspect Shift, hence for telic predicates they go for the culminating event and choose completion, and reject the incomplete situation. Giving them a *while*-clause that modifies the imperfective clause helped the children to apply Aspect Shift, because they now accepted the incomplete situation, along with the complete situation. The reason why a *while*-clause helps in applying Aspect Shift may be related to the story that Kazanina and Philips propose: it provides an explicit temporal reference interval during which the event that must be evaluated is in progress. On this line of reasoning, Aspect Shift is initially avoided by children, unless they are given a good reason to use it, and apparently *while*-clauses provide such a reason (although I admit that I do not fully understand how).

In my study imperfective and progressive sentences had to be anaphorically linked to an antecedent reference time (the moment of the giraffe's looking behind the curtains). This link was not explicitly spelled out in the test sentences, which were simple clauses. So, if children have trouble finding the proper antecedent, they may anchor the event described in the imperfective sentence as an event in progress at any time in the past. Since the curtains were closed, that event may have evolved and culminated, or it may still be ongoing, or it may have been abandoned, hence the overly liberal behavior with imperfectives in my study.[7]

A full analysis of the combined set of results of the various aspect comprehension studies must work out in more detail what the role of Aspect Shift is in children's aspectual development: if they can apply it, and if so, when they choose to apply it and when not. In van Hout (in press b) I embed this discussion in the framework of bi-directional Optimality Theory in order to explain my results with the Dutch tenses. One constraint that I propose there is *Coercion, which says that Aspect Shift is to be avoided. The initial results of this OT analysis are promising and deserve future elaboration.

Acknowledgements

Questions and comments from the audiences at the BUCLD 31 conference (November 2006) and the UMass-UConn-Smith College Language Acquisition Workshop (December 2006) have shaped my thoughts and found a way into this paper. This research was supported by the Netherlands Organization for Scientific Research NWO (*Learning to talk about events: The acquisition of aspect in Dutch and Polish*, grant 300-75-025).

References

Boogaart, R. (1999). *Aspect and temporal ordering: A contrastive analysis of Dutch and English*. Doctoral dissertation, Free University at Amsterdam.

van der Feest, S., and van Hout, A. (2002). Tense comprehension in child Dutch. In: Skarabela, B., Fish, S., Do, A. (Eds.), *Proceedings of 26th BUCLD*. Somerville: Cascadilla Press, pp. 734-745.

[7]This is essentially the explanation that I gave for the Polish results in van Hout (2005b).

Hinrichs, E. (1986). Temporal anaphora in discourses of English. *Linguistics and Philosophy,* 9 (62-82).
van Hout, A. (2005a). Past tense interpretations in Dutch. In: H. Broekhuis, Corver, N., Koster, J., Huybregts, R., Kleinhenz, U. (Eds.), *Organizing Grammar: Linguistic Studies in Honor of Henk van Riemsdijk*. Berlin/New York: Mouton de Gruyter, pp. 234-244.
van Hout, A. (2005b). Imperfect imperfectives: On the acquisition of aspect in Polish. In: Kempchinsky, P., Slabakova, R. (Eds.), *Aspectual Inquiries*. Dordrecht: Springer, pp. 317-344.
van Hout, A. (in press a). Acquisition of perfective and imperfective aspect in Dutch, Italian and Polish. H. Harley & R. Folli (Eds.) Special issue on Telicity and Perfectivity. *Lingua*.
van Hout, A. (in press b). Optimal and non-optimal interpretations in the acquisition of Dutch past tenses. In A. Belikova, L. Meroni and M. Umeda (Eds) *Galana 2: Proceedings of the Conference on Generative Approaches to Language Acquisition – North America 2.* Somerville: Cascadilla Press.
Kamp, H. and Reyle, U. (1993). *From discourse to logic*. Dordrecht: Kluwer Academic Publishers.
Kazanina, N., and Phillips, C., (2006). A developmental perspective on the Imperfective Paradox. *Cognition*, doi:10.1016/j.cognition.2006.09.006.
ter Meulen, A. (1995). *Representing time in natural language: The dynamic interpretation of tense and aspect*. Cambridge: MIT Press.
Młynarczyk, A. (2004). *Aspectual pairing in Polish*. Doctoral dissertation, UiL OTS, Utrecht University.
Partee, B. (1984). Nominal and temporal anaphora. *Linguistics and Philosophy,* 7 (243-286).
de Swart, H. (1998). Aspect shift and coercion. *Natural Language and Linguistic Theory,* 16, (347-385).
Vinnitskaya, I. and Wexler, K. (2001). The role of pragmatics in the development of Russian aspect. *First Language,* 21 (143-186).
Wagner, L. (2001). Aspectual influences on tense. *Journal of Child Language* **28**, 661-681.
Wagner, L. (2002). Understanding completion entailments in the absence of agency cues. *Journal of Child Language* **29,** 109-125
Weist, R., Wysocka, H. and Lyytinen, P. (1991). A cross-linguistic perspective on the development of temporal systems. *Journal of Child Language,* 18 (67-92).