Learning to produce and understand aspect across languages
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We investigated how the structural expression of aspect in a language impacts its acquisition, comparing the roles of grammaticalization and semantic markedness. Our study was part of the COST A33 network. The research question was: which structural property determines ease of aspect acquisition?

We compared the interpretation and production of perfective and imperfective forms in thirteen languages, (1). 266 Five-year-olds participated in this study, plus 10 adults per language. We used three incremental-theme verbs (*make, build, draw*) and three change-of-state verbs (*open, close, blow out*). Complete and incomplete situations were presented in movies with a clown performing a series of similar actions (e.g., building various objects, Figure 1). While the music was playing, the clown was working, but when the music stopped, she had to freeze. In a truth-value judgment task, participants judged whether or not a given aspectual form (perfective or imperfective) matched with a certain situation: complete or incomplete. The test sentence was asked right after the freezing moment: *While the music was playing, the clown built a bridge* (= perfective) / *the clown was building a bridge* (= imperfective). For the elicitation task, the participant had to complete the sentence that started with "*While the music was playing, the clown...*". The crucial condition involved the incomplete situations: in the comprehension task, perfective aspect targeted rejection, and in the production task, perfective was not allowed, since it entails completion.

The results show that aspect acquisition cuts across language-family boundaries. Instead, it is sensitive to the semantic markedness of aspectual forms. In languages in which the perfective form is semantically marked (i.e., has a uniform function), the 5-year-old children firmly acquired the entailment completion of perfective aspect. This holds both in languages with highly grammaticalized aspect (Croatian, Polish, Russian, Serbian, Standard and Cypriot Greek) and medium grammaticalized aspect (Italian, Spanish, Basque). In contrast, when perfective is not semantically marked (English), the children had not acquired the completion entailment and accepted perfective aspect for incomplete situations. The same was found for learners of languages with no or hardly any form of aspectual grammaticalization (Danish, Dutch, Estonian). These effects show up both in comprehension and production.

The results raise two questions: (i) Why should semantic markedness of perfective aspect help acquisition? (ii) Why should aspect grammaticalization affect acquisition? We argue that marked, i.e., unambiguous and dedicated meanings are acquired easier than unmarked meanings. Moreover, higher grammaticalization means more obligatoriness in the use of certain forms (less optionality), hence the form-meaning cues are more reliable and can therefore be acquired more easily.

Our results confirm findings in studies with just one or a few languages (van Hout, 2008; Wagner, 2002; Weist *et al.*, 1991), and longitudinal case studies on German (Freiberger, 2008), Italian (Bertinetto & Noccetti, 2006; Bertinetto *et al.,* 2008) and Croatian (Hrzica, 2011). Our large, crosslinguistic perspective reveals how acquisition can be helped or hindered by the language specifics of aspectual encoding—degree of aspect integration into the grammar, obligatoriness of aspectual distinctions, and its homogeneity of expression.

Figure 1: Set-up for clown building a bridge, pyramid, fence, house, plane and stairs

(1) Perfective-imperfective aspect paradigm in 13 languages

High Aspect Grammaticalization

English	Simple past	The clown built a bridge
	Past progressive	The clown was building a bridge
Standard Greek	Past perfective	O kloun ehtise mia yefira
	Past imperfective	O kloun ehtize mia yefira
Cypriot Greek	Past perfective	O kloun ehtise mia yefira
	Past imperfective	O kloun ehtize mia yefira
Croatian	Past perfective	Klaun je sagradio most
	Past imperfective	Klaun je gradio most
Polish	Past perfective	Klaun zbudował most.
	Past imperfective	Klaun budował most.
Russian	Past perfective	Kloun postroil most
	Past imperfective	Kloun stroil most
Serbian	Past perfective	Klovn je sagradio most
	Past imperfective	Klovn je gradio most

Medium Aspect Grammaticalization

Spanish	Simple past perfective-preterito	El payaso construyó un puente
	Simple past imperfective-imperfetto	El payaso construía un puente
Italian	Present perfect-passato prossimo	Il pagliaccio ha costruito un ponte
	Past-imperfective-imperfetto	Il pagliaccio costruiva un ponte
Basque	Present perfect	Pailasoak zubia egin du
	Past progressive	Pailasoa zubia egiten ari zen

Low Aspect Grammaticalization

Danish	Present perfect	Klovnen har bygget en bro
	Past periphrastic progressive	Klovnen var ved at bygge en bro
Dutch	Present perfect	De clown heeft een brug gebouwd
	Past periphrastic progressive	De clown was een brug aan het bouwen
Estonian	Object partitive case (imperfective)	Kloun ehitas silda
	Object genitive case (perfective)	Kloun ehitas silla