

# Contextual Factors in Children's Calculation of Telicity

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## 1. Introduction

Prior work on the acquisition of telicity in child language (van Hout, 1998; Ogiela, 2007) has shown that children as old as 6 years old have a poor grasp on the completion entailments of telic predicates in truth value judgement tasks in some cases. With a sentence such as *John built a car*, while adults require the car to be completely built, but children are willing to accept this sentence as describing a situation where a car wasn't completely built. This raises questions regarding what children know of individual verbs, and of where their apparent differences with adults lie. Although it's known that children attend to semantic and syntactic features such as definiteness, quantity (*eat the apples* vs. *eat two apples*) and particles (*eat up the cake*) when calculating telicity, less is known about pragmatic factors that influence children's computations. In this paper I present results from an experiment examining how prior discourse context may play a role in children's calculation of telicity, arguing that children attend to cues in the discourse regarding when a predicate can describe a situation. In particular, I show that children derive more telic interpretations when the experimental context (as a proxy for discourse) is primed with information suggesting that a predicate should hold to the maximal degree. This connects with findings in other areas, particularly with respect to children's understanding of standards and gradable adjectives (Syrett et al., 2010), as well as children's pragmatic competence and scalar implicatures (Noveck, 2001; Papafragou & Musolino, 2003; Lewis, 2013).

For the purposes of this paper, I define telicity as the property of whether an event has an inherent endpoint associated with it. For instance, an event of building a house is naturally directed towards a point in time where a house is completely built. This contrasts with pushing a cart, which in principle has no endpoint associated with it (although the event will almost certainly stop in the real world).

Telicity is manifest in our linguistic descriptions of the world. As observed by Dowty (1979), Verkuyl (1972), Vendler (1957), and others, certain linguistic

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structures diagnose whether predicates semantically encode endpoints. One prime example of this is the contrast between *in X time* and *for X time*, where it has been observed that *in X time* is felicitous only with telic predicates, while *for X time* is only felicitous with atelic predicates.

- (1) a. John built a house in an hour.  
 b. \*John built a house for an hour.
- (2) a. \*John pushed a cart in an hour.  
 b. John pushed a cart for an hour.

It must also be noted that telicity isn't a property of verbs per se, but of larger linguistic units, verb phrases. To illustrate this, we should contrast the verbs *build* and *push* with two different types of direct objects, a singular indefinite and a bare plural, as in (3) and (4). What we should notice is that the examples in (4) never get a telic interpretation, regardless of the direct object. This contrasts with the examples in (3), where a telic interpretation is allowed when there is a singular indefinite direct object, or one of other types of direct objects as well, as in (5). The generalization to make is that not all combinations of verbs and direct objects allow for telic interpretations to be generated, and additionally, that the possibility of a telic interpretation is dependent on properties of the direct object as well (Verkuyl, 1972).

- (3) a. John built a house  $\left\{ \begin{array}{l} \text{in an hour} \\ \text{*for an hour} \end{array} \right.$   
 b. John built houses  $\left\{ \begin{array}{l} \text{for an hour} \\ \text{in an hour} \end{array} \right.$
- (4) a. John pushed a car  $\left\{ \begin{array}{l} \text{*in an hour} \\ \text{for an hour} \end{array} \right.$   
 b. John pushed cars  $\left\{ \begin{array}{l} \text{*in an hour} \\ \text{for an hour} \end{array} \right.$
- (5) John built a house/three houses/the house/no more than two.

The relevant property for direct objects, according to Krifka (1989, 1998), is being quantized, which roughly equates to an object having no proper subparts that are the same type as the object. If we take the denotation of *a house*, for instance, no mereological subpart of *a house* will also fall in the denotation of *a house*. Contrasting this with *houses*, there are proper subparts of *houses* that fall under the denotation of *houses*. Not all quantized objects allow a telic reading to arise, though—the possibility of a telic interpretation depends on the verb. Verbs that allow for telic interpretations with quantized objects are said to be quantity-sensitive, while those verbs that do not allow for telic interpretations with quantized objects are quantity-insensitive. What this shows us is that being quantity-

sensitive is a necessary but not sufficient condition for telicity. What is also necessary is to consider the semantic properties of the object as well, making telicity a property of not just the verb or object, but the verb phrase.

Telicity is also influenced by pragmatic/contextual factors regarding where the bound for an event lies (Hay et al., 1999). For instance, event descriptions using *lower* can be either atelic or telic, depending on world knowledge and lexical semantic properties of the object. Temperature can be lowered indefinitely (modulo real-world facts), while there is a bound to how far blinds can be lowered. The tests in (6) and (7) show that these sentences differ in whether they are atelic or telic.

- (6) Kim is lowering the heat.  
 ⇒ Kim has lowered the heat. (atelic)
- (7) Kim is lowering the blinds.  
 ⇏ Kim has lowered the blinds. (telic)

Formally, there have been different proposals as to what the semantic representation of different classes of VPs is like. For VPs in my Strictly Telic class, well-known semantic theories include those of Verkuyl (1972), Krifka (1989) and Rothstein (2004). Although the specifics of these theories differ, in these theories, an incremental relation holds between parts of the event and parts of the direct object. In this way, the progress of the event is related to how the object is incrementally affected during the course of the event. Importantly, it is entailment (rather than an implicature) that the event has culminated.

With respect to my Variably Telic class, the most well-studied verbs that fit into this rough typology would be degree achievements. Degree achievements allow for both telic and atelic interpretations (Abusch, 1986; Kearns, 2007). An influential account of degree achievements suggests that, in their telic interpretation, telicity is generated not as an entailment but rather as an implicature (Hay et al., 1999; Kennedy & Levin, 2008). This makes telicity with these predicates sensitive to pragmatic factors.<sup>1</sup>

For the purposes of this study, I thus define two broad classes of verbal predicates. First, what I will call Strictly Telic predicates are exemplified by predicates such as *build a house* and *empty a jar*, which are only true of events which have fully culminated. These are contrasted with what I call Variably Telic predicates, predicates which may hold true in situations where some minimal change has occurred, but also allow for an interpretation where an event has fully culminated. Examples of Variably Telic predicates include *cut the paper* and *unzip the jacket*, both of which allow for readings where the event progressed some minimal

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<sup>1</sup>One complicating factor is that, among researchers studying aktionsart, predicates like *eat the apples* and *drink the milk* are typically regarded as requiring having completely eaten the apples and drank all the milk, respectively. But, this paper replicates other findings (e.g., Ogiela (2007); Ogiela et al. (2014)) that *eat* and *drink* allow for some flexibility in whether the event reaches culmination.

amount (e.g., cutting the paper a little bit) as well as where the event progressed to the maximal amount (e.g., unzipping a jacket all the way).

## 2. Previous work

### 2.1. Telicity in child language

van Hout (1998) examines children's interpretations of the Dutch equivalent of the quantity-sensitive verbs *eat* and *drink* using a truth value judgement task (Crain & Thornton, 1998). In her task, she presented stories accompanied by flashcards, where the characters in the stories were involved in eating and drinking events. Characters in the stories would either fully complete the eating/drinking event (for a telic event-type) or only partially complete the eating/drinking event (for an atelic event-type), and then were prompted on whether the character completed the event by asking a simple yes-no question. van Hout presents two main findings; the first is that children, even at the age of 5, are essentially at chance in whether they assign a telic interpretation to a predicate that, for adults, is telic. This result is muddled by the fact that adults also allow for atelic interpretations of predicates that are canonically thought to be telic. Second, van Hout finds that children as young as 4 have an understanding that particles equivalent to *up* in English (as in "eat up the cake") force a telic interpretation.

Ogiela (2007) expands on van Hout's study by testing children not only on *eat* and *drink* (what she calls *eat*-type verbs), but also on *build* and *fix* (*build*-type verbs). The rationale for testing different verbs is due to the fact that the *eat*-type verbs allow for both atelic and telic interpretations, but that the *build*-type only allow for telic interpretation; testing verbs that strictly require a telic interpretation would give a more complete picture of what children understand about the relationship between quantity-sensitive verbs and their objects. If children are at ceiling with the *build*-type verbs, it could be concluded that they have an adult-like understanding of telicity.

In addition to this, Ogiela tested *eat up* and *push over* (which require culmination with quantized objects), and *build*- and *eat*-type verbs using objects with cardinal numbers, which by hypothesis should not be licit in atelic situations.

- (8) John ate up the cake. (telic)
- (9) John pushed over the box. (telic)
- (10) a. John fixed two cars.  
b. John ate two cookies.

Ogiela finds that adults quite strongly regard *build*-type verbs as being only telic, while accepting *eat*-type verbs in atelic situations. Ogiela finds an effect for age, with older children performing more like adults than the younger children. For the *eat*-type verbs with a definite object, the oldest children behave essentially adult-like. However, these same children do not behave adult-like with respect to the *build*-class verbs, where they consistently allow them to hold in atelic situations.

Ogiela finds a small effect for the presence of the cardinal number, as predicted, but for children it does not very strongly force the children to reject the predicate in atelic situations. Similarly, the particles *up* (*eat up*) and *over* (*push over*) (not shown in the figure), should also impose telic interpretations, but children still do not correctly reject these VPs in incomplete situations. Finally, compared to *push*-type verbs, children do regard quantity-sensitive verbs as being different in whether they allow telic interpretation; these verbs together were found to be statistically different from *push*-type verbs (although there is no significant difference between *eat* and *build*-type verbs themselves).

## 2.2. Pragmatics and comprehension

Syrett et al. (2010) examine children's understanding of the distinction between relative adjectives (adjectives where their standard is determined by the context) and absolute adjectives (where their standard is thought to be more or less fixed at an endpoint). While testing, they find a curious effect: children's behavior with absolute adjectives (whether they accept or reject them in infelicitous contexts) was dependent on when the infelicitous use of the adjective was presented in the experiment, relative to the felicitous use. To illustrate, in part the experiment, children were presented with two jars. In the felicitous trials, one jar was full, and the other 2/3rds full, while in the infelicitous trials, neither jar was full, but one was fuller than the other. Then, they were asked to give the puppet the full jar, or, if they couldn't, say why not. Children were more likely to outright reject the request in the infelicitous context when they were presented with the felicitous context prior in the experiment, compared to when the infelicitous context was first. Adults showed a similar effect with respect to ordering, although not as strongly.

Syrett et al. argue that this is an effect of imprecision, and not that the absolute adjectives were behaving as though they were relative adjectives; although *full* has an exact meaning, an amount of pragmatic tolerance is afforded by children to *full* in the infelicitous context. The difference between adults and children in this experiment stems from children allowing for more tolerance than adults. But, the appearance of the full container in the felicitous context helps children move to a context where there is a greater need for precision. In this way, children's interpretation of *full* relies on prior contextual information.

Studies that test children's knowledge of scalar implicatures also suggest that children pay close attention to contextual factors. Early work on the acquisition of scalar implicatures seemed to show that children are very much unlike adults, even at relatively late ages Noveck (2001), suggesting that children have systematic difficulties with scalar implicatures. But, this view has gradually become more nuanced. Work expanding on Noveck shows that children behave much more like adults when the tasks they are tested with change in minor ways. Papafragou & Musolino (2003) show that children draw more upper-bounded inferences when the story highlights the performance of the main character. Guasti et al. (2005) find

that children are more likely to give upper-bounded interpretations for sentences when the sentences are embedded in the context of a story, rather than presented in isolation.

Although none of these studies explore the interaction of pragmatics and children's knowledge of telicity, they highlight ways in which children's behavior in some tasks might be affected by contextual factors. Given that pragmatic knowledge plays a role in children's interpretation in other domains, it seems natural to look at how children's interpretation of telic sentences is also influenced by their pragmatic competence.

### 3. Hypothesis and predictions

That children use context in other sorts of tasks, such as Syrett et al.'s experiments studying the role of context in determining the standards for gradable adjectives, sets up the possibility that context may also play a large role in both adults' and children's calculation of telicity. To put it in a different way, information accrued within a discourse (or in the case of this paper, in an experiment) may factor in to the determination of whether a telic predicate holds in a situation or not. Syrett et al. shows that the standards for gradable predicates may be shifted depending on whether felicitous uses of a test item have appeared earlier in an experiment. Based on this, I will assume that certain contexts can be said to be more informative than others, based on what information is already in the context. In particular, contexts where it has already been established under what conditions a predicate holds will be said to be a highly informative context (HI-INFO), while contexts where it has not been established as to what counts for a predicate are low informative contexts (LO-INFO).

This predicts that if participants use context in calculating telicity, HI-INFO contexts should produce more telic interpretations for predicates than LO-INFO contexts. That is, in HI-INFO contexts, participants should be more strict in when they say a predicate can felicitously describe a situation, leading to more rejections of a predicate in the situations where it cannot be felicitously used compared to the LO-INFO contexts.

Additionally, previous experimental and theoretical research on the interpretation of telic and atelic predicates (van Hout, 1998; Ogiela et al., 2014; Verkuyl, 1972; Hay et al., 1999: a.o.) sets up baseline predictions for the relative rates of telic interpretations for Strictly Telic and Variably Telic predicates. Given that Strictly Telic predicates require the event they describe to be fully completed, the prediction is that adults should accept sentences with these predicates in an experimental setting only when they are used to describe events that can be construed as maximal in some way (such as by crossing a street from one curb to another for *cross* or by completely emptying a container such as for *empty*), and that the same predicates will be rejected when the event has not been completed. Variably Telic predicates, on the other hand, are more variable in their requirements, in that they can be used felicitously when the event has not completed to the maximal degree

or when the event has simply evolved by some degree. An event of cutting a piece of paper halfway can be described with the verb *cut* for instance, and experimental research confirms intuitions that the predicate *eat* is able to be used in some situations even when not all of an object has been consumed (Ogiela, 2007; Ogiela et al., 2014). The prediction is that adults should show more variability with Variably Telic predicates, and allow them in incompleted contexts more often than Strictly Telic predicates.

## 4. Experiment

### 4.1. Materials

Prior to testing, four Strictly Telic predicates and four Variably Telic predicates were identified. The four Strictly Telic predicates tested were *build*, *fix*, *cross*, and *empty*. Each was tested using a definite object, except for *build*, where an indefinite object was used.<sup>2</sup> The Variably Telic predicates that were tested were *eat*, *drink*, *unzip*, and *cut*, and each was used with a definite object.

Each predicate was demonstrated with two different videos, one showing the event fully completed (the COMPLETE scenario) and one showing the event ending before completion or being completed some non-maximal amount (the INCOMPLETE scenario). The scenarios were designed so that the Strictly Telic predicates would be true in their COMPLETE scenarios and false in their INCOMPLETE scenarios. The Variably Telic predicates were also all true in their COMPLETE scenarios, and also allowed for a reading where they were true in their INCOMPLETE scenarios.

These videos were presented in two different orders: in the LO-INFO ordering, the INCOMPLETE videos were presented before the COMPLETE videos, while in the HI-INFO ordering, the COMPLETE videos were presented before the INCOMPLETE videos. These two orderings are a proxy for context in the experiment as by assumption, ordering the COMPLETE videos before the INCOMPLETE videos provides the participant additional information as to when the predicate can felicitously describe a situation.

### 4.2. Procedure

Prior to the experiment, children were told that they were going to be playing a game with the experimenter and a puppet. They were told that the puppet thinks he's quite smart, and that he thinks he knows what happens in a video even if he doesn't see it happen. They children were told that the puppet wanted to see how good he really was at this, and so would be wearing a blindfold. The experimenter then blindfolded the puppet.

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<sup>2</sup>It should be stated again that telicity is partially determined on properties of both the verb and its direct object. This paper abstracts away from the semantic contribution of the direct object in order to focus on the contribution of the verb and the discourse context. But see van Hout 1998, Ogiela 2007, Hacoen 2009, and others for work on children's understanding of how the direct object contributes to the telicity of the VP.

Next, the slides were shown one at a time. At the start of the video, the experimenter would introduce the person in the video, and then the video would play. At the end of the video, the experimenter (acting as the puppet) would give a sentence of the form, “X built a house!” where X was the actor in the video. The child was then asked if the puppet was right or wrong, and given a chance to respond. If the child didn’t give a “yes/no” or “right/wrong” form of answer, the experimenter would ask again whether that meant that the puppet was right or wrong. A second experimenter was present to code child responses.

Adults were given a slightly different version of the experiment without the context of the game. They were tested as a group in a classroom, and slides were projected to the front of the classroom. Prior to the experiment, the adult participants were given a sheet on which to record their answers and told that they were going to be judging whether certain sentences were true or false depending on a short video they would be watching. During the experiment, the slides were presented one at a time. After the video on the slide completed, the experimenter asked the participants a question of the form, “X built a house.” where X was the name of the actor in the video. The participants were then given a chance to record their answers.

### 4.3. Participants

Thirty-three children were recruited from and tested at three East Lansing, Michigan, area preschools. Age ranges for the children and the mean age per group are summarized in Table 1. Children were randomly assigned to an order (HI-INFO or LO-INFO). In addition, thirty-eight adults were tested (mean age 19.9 years). All were Michigan State University undergraduate students taking an introduction to linguistics course and received course credit for participation. The adults were also randomly assigned an ordering.

**Table 1: Summary of participants**

Order	Adult <i>n</i>	Child <i>n</i>	Child Age Range	Child Mean Age
HI-INFO	21	17	2;7 – 5;3	4;1
LO-INFO	17	16	3;6 – 5;6	4;3
Total <i>n</i>	38	33		

### 4.4. Analysis

In the experimental task outlined here, a participant’s response to a predicate in a single scenario (e.g., in the COMPLETE or INCOMPLETE scenario) is under-informative. Whether a participant regards a predicate as strongly requiring a telic interpretation can only be determined by comparing the participant’s responses to the predicate in both COMPLETE and INCOMPLETE situations. Accepting a



predicate in a COMPLETE situation is not necessarily indicative of the participant treating the predicate as telic, since that judgement can only be made once it is understood how that same subject treats the predicate in an INCOMPLETE situation.

A summary of types of subject responses is provided in Table 2. Accepting a predicate in both types of scenarios can be considered a bias towards acceptance, while rejecting a predicate in both scenarios can be considered a bias towards rejection. Furthermore, rejecting a predicate in the COMPLETE scenario but accepting it in the INCOMPLETE scenario can be thought of as ignorance of what the predicate means, as all experimental stimuli were designed to hold in the COMPLETE scenario.

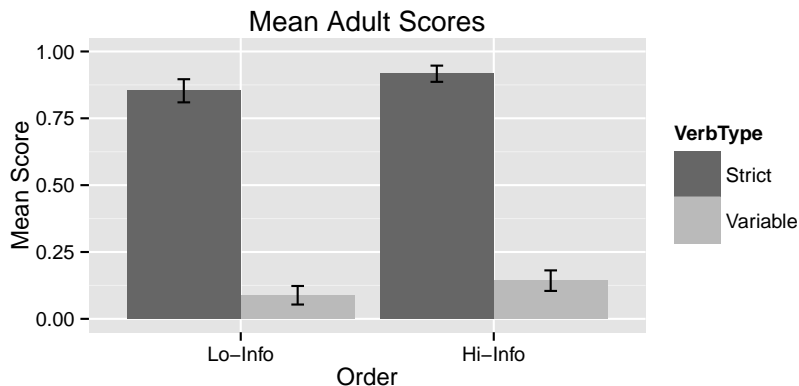
**Table 2: Summary of types of subject responses**

		COMPLETE	
		Accept	Reject
INCOMPLETE	Accept	<i>Yes-bias</i>	Ignorance
	Reject	Telic Interpretation	<i>No-bias</i>

Scoring for the predicates tested was performed as follows. For each subject, their responses to a single predicate in both the COMPLETE and INCOMPLETE scenarios was compared. If this predicate was accepted as being a description of the COMPLETE situation and rejected in the INCOMPLETE situation, that participant was given a score of 1 for that predicate. Otherwise, for all other responses, the participant was given a score of 0. A mean score approaching 1.0 for a predicate or verb type (e.g., Strictly Telic or Variably Telic) should then be interpreted as subjects consistently accepting the predicate in the COMPLETE situation and rejecting it in the INCOMPLETE situation—in other words, treating it as if it requires the event be completed to the maximal degree.

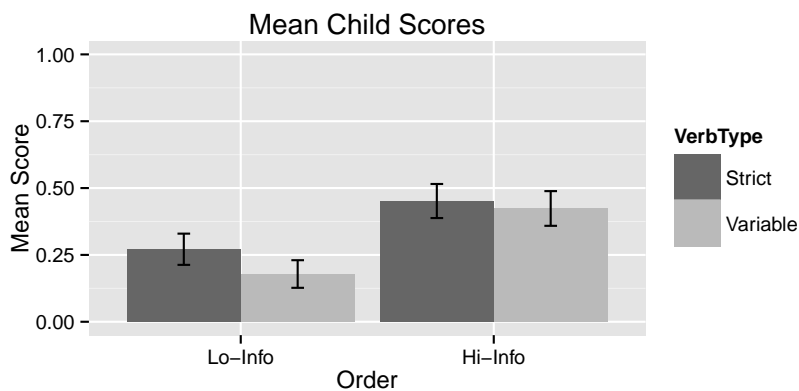
#### 4.5. Results and discussion

The results for adults show two separate patterns of responses for Strictly Telic and Variably Telic predicates. For Strictly Telic predicates, across both the HI-INFO and LO-INFO conditions, adults largely considered these predicates to only hold in COMPLETE situations. This was in line with the prediction that adults should treat Strictly Telic as strongly requiring the completion of the event. Variably Telic predicates, on the other hand, showed much lower telic scores. A one-way ANOVA shows that this difference is statistically significant ( $F(1,36)=484.792$ ,  $p < .001$ ). Comparing verb types across orderings (LO-INFO vs. HI-INFO ordering), however, there was no statistically significant difference, showing that adults did not take context into account when calculating telicity.



**Figure 1: Mean telic scores for adults by presentation order and verb type.**

Children show a markedly different pattern of results. First, children show no difference between Strictly Telic and Variably Telic predicates in either the LO-INFO or HI-INFO orders, in contrast with adult behavior. Additionally, children do show a statistically significant difference in scores between the LO-INFO and HI-INFO conditions ( $F(1,31)=4.678$ ,  $p < .05$ ), suggesting that children are sensitive to the order of presentation.



**Figure 2: Mean telic scores for children by presentation order and verb type.**

Table 3 provides a summary of the mean scores (the total number of 1 scores divided by the total number of responses).

**Table 3: Summary of mean scores**

Verb Type	Adult		Child	
	HI-INFO	LO-INFO	HI-INFO	LO-INFO
Strictly Telic	77/84 (.916)	58/68 (.852)	28/62 (.451)	16/59 (.271)
Variably Telic	12/84 (.142)	6/68 (.088)	25/59 (.423)	10/56 (.178)

## 5. Discussion

The results from this experiment are consistent with the results of previous acquisition work on lexical aspect, particularly the work of Ogiela (2007), and van Hout (1998). Adults show a pattern of behavior suggesting that they have at least two categories for quantity-sensitive verbs: a category for verbs that always require a telic interpretation (e.g., my Strictly Telic class) and a category that allows for a weaker, partitive or amount of change interpretation in addition to a telic interpretation (e.g., my Variably Telic class). In line with Ogiela's findings, the experiment presented in this paper shows that children do not reliably reject Strictly Telic predicates in incomplete or partially completed contexts. In other words, unlike adults, children, at least at the age tested in this experiment, do not seem to regard Strictly Telic predicates as requiring telic inferences.

The crucial comparison here was between the LO-INFO and the HI-INFO conditions. The assumption is that in the HI-INFO condition, the child has information about the culmination conditions of the verb due to its presentation earlier in the experiment, and hence can use that information in determining whether to reject or accept the same predicate in an incomplete situation. Adults did not show any differences between the LO-INFO and HI-INFO conditions with either Strictly Telic or Variably Telic predicates. The lack of a difference between the Strictly Telic predicates is not surprising, as these predicates semantically entail culmination. More surprising is that adults did not treat Variably Telic predicates as more strongly requiring a telic interpretation in the HI-INFO condition. We might have expected that adults would prefer to generate an implicature of telicity with these predicates.

The behavior of the adults suggests that what they are attending to is only the semantic properties of the predicates tested. We might have thought that adults would show an effect of order with respect to their responses to Variably Telic predicates, given that these predicates allow context to determine whether they can felicitously describe a situation or not. However, it is not completely surprisingly that adults show no effect of context here, in light of other literature on adults' pragmatic competence. In studies examining scalar implicatures, adults do not always generate scalar implicatures. Various studies (Noveck, 2001; Guasti et al., 2005; Pouscoulous et al., 2007) show that in statement evaluation tasks, adults have middling rates of rejection of underinformative sentences, explained by adults not generating scalar implicatures. This rate improves when adults are

tested using more naturalistic tasks. This experiment may have commonalities with statement evaluation tasks, in that adults do not have any reason to perform an extra step and derive a telic implicature for Variably Telic predicates.

Finally, the experiment presented here shows that children are sensitive to the order of presentation of test items in a experiment, with a pattern of responses suggesting a telic interpretation when COMPLETE situations are displayed before INCOMPLETE situations. In conjunction with the data showing a lack of a difference between Strictly Telic and Variably Telic predicates, this could be explained by children relying heavily on contextual and pragmatic information rather than the semantic properties of the sentence itself in order to decide whether a predicate can be used felicitously or not. As the response patterns for adults do not show any contextual effects, it shows that children differ from adults in some way.

One possibility for where children’s differences (compared to adults) lies is that children are able to relax the completion entailments of Strictly Telic predicates. For this view, we should assume that children have adult-like representations of Strictly Telic and Variably Telic predicates, schematized as in (11a) and (11b).<sup>3</sup> In this representation, **cross**<sub>Δ</sub> and **cut**<sub>Δ</sub> are functions that measure out the degree to which an event has progressed, and **min** and **max** are constants representing minimal and maximal degrees of completion. (11a) schematizes the intuition that Strictly Telic predicates semantically entail reaching the maximal degree of completion, whereas (11b) schematizes the intuition that Variably Telic predicates only require some minimal amount of progression. Where children differ from adults is that children are willing to accept Strictly Telic predicates in infelicitous situations while adults are not, but not that they have different semantic representations for the sentences.

- (11) a.  $\llbracket \text{cross the street} \rrbracket = \lambda e. \text{cross}_\Delta(\text{the street})(e) = \mathbf{max}$   
(upper-bounded meaning)
 b.  $\llbracket \text{cut the paper} \rrbracket = \lambda e. \text{cut}_\Delta(\text{the paper})(e) \geq \mathbf{min}$   
(lower-bounded meaning)

This explanation dovetails with prior work on children’s understanding of implicatures. Katsos & Bishop (2011) show that, in a binary forced choice task without contextual support, children are willing to accept pragmatic infelicity (e.g., underinformative assertions). Accepting pragmatic infelicity also plays a role in adult speech as well, where adults sometimes will qualify affirmatives to pragmatically underinformative statements by adding, “yes, but...”. And, informally, children in both this experiment and the experiments in Ogiela (2007) would often give qualified answers before being pressed to make a choice. Although the presence or absence of qualified answers was not consistently looked at in this experiment,

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<sup>3</sup>Whether or not these representations are precisely like the representations in (11) is a separate matter. This proposal is largely agnostic as to the representation, so long as children have a weak, lower-bounded semantics for Variably Telic predicates and a stronger, upper-bounded semantics that entails completion for Strictly Telic predicates.

that they seem to exist with some regularity could be argued to support this explanation.

However, this explanation has a drawback as well, in that it does damage to the notion of entailment in semantics. Katsos & Bishop (2011) examined statements that were true but underinformative in context. When we consider the experiment here, there is an important difference in that the statements in this experiment are false, if we are to assume an adult-like representation for Strictly Telic predicates. If children have adult-like versions of the Strictly Telic predicates tested, then it is unclear what we are to make of the notion of entailment if children are free to ignore entailments. It's also not clear whether adults are able to relax entailments in this way, which we might expect supposing continuity between adult and child linguistic competence.

A second possibility is that children truly are different from adults, in that their representations for both Strictly Telic predicates and Variably Telic predicates are weak, as in (12). In these representations, both *cross* (Strictly Telic) and *cut* (Variably Telic) are semantically specified to be able to hold in situations where the event has only minimally progressed.

- (12) a.  $\llbracket \textit{cross the street} \rrbracket = \lambda e. \mathbf{cross}_{\Delta}(\mathbf{the street})(e) \geq \mathbf{min}$   
(lower-bounded meaning)  
 b.  $\llbracket \textit{cut the paper} \rrbracket = \lambda e. \mathbf{cut}_{\Delta}(\mathbf{the paper})(e) \geq \mathbf{min}$   
(lower-bounded meaning)

The low telic scores overall for children and the lack of a difference between Strictly Telic and Variably Telic predicates, under this proposal, is reflecting that children treat these predicates differently than adults, in that they have weak representations for both.

## 6. Conclusion

In this paper, I've presented results from an experiment showing how context plays a role in children's understanding of telicity. By explicitly manipulating the order of presentation of stimuli in the experiment, in order to display either fully-completed or partially-completed situations first as a proxy for discourse context, I've been able to show that children use the prior context in forming judgements as to whether a telic predicate can felicitously describe a situation or not. This contrasts with adults, who do not use the context in forming their judgements, and suggests that pragmatic factors may play an important role in children's understanding of telicity. The experiment also shows that children lack a distinction between what I call Strictly Telic and Variably Telic predicates, predicates that strongly require an interpretation where the event was maximally completed versus predicates that are consistent with but do not require such an interpretation. This suggests that children may have a different representation for telic predicates, compared to adults, although further work is necessary to establish this.

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