

Telicity Corresponds to Degree of Change

Scale Structure across Categories, Part 2

Chris Kennedy, Northwestern University

Lectures on the Syntax and Semantics of Gradability and Comparison
Kyunshu University, August 2000

1 Introduction

1.1 Aspectual characteristics of “degree achievements”

So-called “degree achievements” (DAs) such as *widen*, *lengthen*, *shorten*, *cool*, *dry*, *flatten*, *straighten* have long caused problems for theories of aspectual classification, because they display both telic and atelic properties (Dowty 1979; Abusch 1986).

• Different DAs display different telicity:

- (1) a. Kim is lengthening the rope. ⇒ Kim has lengthened the rope. (ATELIC)
b. Kim is straightening the rope. ⇏ Kim has straightened the rope. (TELIC)

• Some DAs appear to have ambiguous telicity (cf. Dowty 1979):

- (2) a. The soup cooled for an hour. (ATELIC)
b. The soup cooled in an hour. (TELIC)

• The telicity of a single DA can be influenced by context:

- (3) a. The water dripping off the roof is lengthening the icicle. ⇒
The water dripping off the roof has lengthened the icicle.
b. The tailor is lengthening my pants. ⇏ The tailor has lengthened my pants.

The behavior of DAs is therefore one area in which the traditional Vendler/Dowty aspectual classification breaks down. The goal of this talk is to show that the aspectual behavior of DAs can be explained in terms of the relation between event structure and the scalar structure of gradable properties.

1.2 Ingredients of telicity

The *icicle/pants* distinction illustrated in (3) is reminiscent of the well-known effect of mass vs. count noun arguments on telicity:

- (4) a. We are eating rice. ⇒ We have eaten rice.
b. We are eating a plum. ⇏ We have eaten a plum.

The research reported here combines ongoing work with Beth Levin (Stanford University) and past work with Beth Levin and Jen Hay (University of Canterbury, New Zealand). See Hay, Kennedy, and Levin (1999) for details.

The mass-count contrast can be analyzed in terms of the (un-)boundedness of a physical property of the affected argument—in (4), a property of *volume*—which we identify as the *incremental theme* (see e.g. Dowty 1991; Jackendoff 1996; Krifka 1989, 1992; Tenny 1987, 1994; Verkuyl 1993; Ramchand 1997).

- When the incremental theme is bounded, a terminal point can be identified for the event introduced by the predicate, resulting in a telic interpretation.
- When the incremental theme is unbounded, no terminal point can be identified for the event introduced by the predicate, resulting in an atelic interpretation.

• (4b) gets a telic interpretation because *a plum* can be assumed to have a maximal volume; (4a) is interpreted atelically because *rice* cannot be associated with a maximal volume.

A basic semantic characteristic of DAs is that the affected argument undergoes a change in some property—in examples like (1)-(3), the property introduced by the adjectival base.

If this change in property is identified as the incremental theme, the *icicle/pants* contrast in (3) can be characterized in precisely the same way as the mass/count contrast in (4) (cf. Ramchand 1997):

- An icicle cannot be associated with a maximal length, therefore no terminal point for a *lengthening the icicle* event can be identified.
- A particular pair of pants, fit for some individual, *can* be associated with a maximal length, so an event of *lengthening my pants* can be associated with a terminal point.

1.3 Overview of the talk

In this talk, we argue for a lexical semantic analysis of DAs in which such predicates explicitly introduce a measure of the amount to which some object (the affected argument) changes with respect to a gradable property.

- (5) a. The water dripping off the roof caused the length of the icicle to increase by *some amount*.
b. The (work of the) tailor caused the length of my pants to increase by *some amount*.

As shown by (6)-(7), this measure of change, which we refer to as the *difference value*, can be overtly specified:

- (6) a. The tilting of the earth on its axis lengthened the day (by) 5 minutes.
b. The day lengthened (by) 5 minutes.
(7) a. The tilting of the earth on its axis caused the length of the day to increase by 5 minutes.
b. The length of the day increased by 5 minutes.

We claim that the difference value is the incremental theme in DAs, and that its structure determines the (a)telicity of the predicate:

- When the difference value has a specific interpretation, it supports the identification of a terminal point for the event introduced by the predicate, triggering a telic interpretation.
- When the difference value does not have a specific interpretation, no terminal point can be identified for the event, and the predicate receives an atelic interpretation.

2 The lexical semantics of degree achievements

A large number of DA are derived from gradable adjectives by $-en$ or $-\theta$. We therefore use this subclass as a starting point for our analysis, returning to other verbs below.

2.1 Gradable adjectives and degrees

Gradable adjectives denote functions from objects to abstract representations of measurement, or *degrees* (Kennedy 1999; Bartsch and Vennemann 1973); here we incorporate a temporal variable to reflect the fact that the same object may manifest different degrees of the same gradable property at different times.

- (8) a. $[A \text{ long}] = \text{long}_{\langle e, t, d \rangle}$
 b. $\|\text{long}(a)(t)\| =$ the degree to which a is long at time t

Degrees are formalized as positive or negative intervals on a scale (Seuren 1978; von Stechow 1984b; Kennedy 1999, to appear), where a scale is a set of points totally ordered along some dimension (e.g., LENGTH, VOLUME, DURATION, etc.). Assuming for simplicity that scales can be modelled on the set of real numbers between 0 and 1, positive and negative degrees can be defined as in (9a)-(9b):

- (9) $\forall p \in S$:
 a. $d_{pos}^{(0,p)} = \{p' \in S \mid 0 < (\leq)p' \leq p\}$
 b. $d_{neg}^{(p,1)} = \{p' \in S \mid p \leq p' < (\leq)1\}$
- (10) DIMENSION: $0 \circ \text{-----} \text{pos}(a)(t) \bullet \text{-----} \text{neg}(a)(t) \text{-----} \circ 1$

We also introduce a third sort of *differential* degree (see Hellan 1981; von Stechow 1984a; Bierwisch 1989; Faller 1998):

- (11) $\forall p \in S: d_{diff}^{(0,p)} = \{p' \in S \mid 0 \leq p' \leq p\}$

Depending on the adjective, the set of differential degrees may or may not be coextensive with the set of positive degrees; compare (12) and (13):

- (12) a. My pants are 16 inches longer than they were when I was 10 years old.
 b. These pants are 16 inches long.
- (13) a. Wednesday was 70 degrees warmer than Tuesday.
 b. # Wednesday was 70 degrees warm.

In addition to playing a crucial role in the semantic analysis of “differential comparatives” like (12)a-(13)a, differential degrees provide the basis for a semantic analysis of degree achievements that implements the ideas expressed in Section 1.3.

2.2 The semantics of $-en/\theta$

We propose that the $-en/\theta$ morpheme introduces the function INCREASE, which takes a gradable adjective meaning and returns an event description that measures out the change an object undergoes with respect to the gradable property introduced by the adjective.

- This measure of change is introduced by the *difference value*.

The analysis is made explicit in (14), where δ corresponds to the difference value, and SPO and EPO are functions from events to times that return an event’s beginning and end points, respectively. The definition of degree addition, defined (for positive and negative degrees) in (15), requires the difference value to be a differential degree (see von Stechow 1984b).

- (14) a. $[Af -en/\theta] = \text{INCREASE}(\langle e, t, d \rangle, \langle e, d, s, t \rangle)$
 b. $\|\text{INCREASE}(\phi)(x)(\delta)(e)\| = 1$ iff $\phi(x)(\text{SPO}(e)) + \delta = \phi(x)(\text{EPO}(e))$
- (15) a. $d_{pos}^{(0,p)} + d_{diff}^{(0,p)} = d_{pos}^{(0,p+p)}$
 b. $d_{neg}^{(p,1)} + d_{diff}^{(0,p)} = d_{neg}^{(p-p,1)}$

The semantic representations of transitive and intransitive degree achievements are as shown in (16)a-b, where ϕ is the adjectival base, a and b are the nominal arguments, and δ is the difference value.

- (16) a. $\text{CAUSE}(a)(\text{INCREASE}(\phi)(b)(\delta)(e))$
 b. $\text{INCREASE}(\phi)(b)(\delta)(e)$

For example, (17)a-b are the semantic representations of (6)a-b, respectively (assuming existential closure over the event variable e).

- (17) a. $\exists e[\text{CAUSE}(\text{tiling-of-the-earth})(\text{INCREASE}(\text{long}(\text{the-day})))(5 \text{ minutes})(e)]$
 b. $\exists e[\text{INCREASE}(\text{long}(\text{the-day})))(5 \text{ minutes})(e)]$

The truth conditions of (17)a-b are identical to the paraphrases in (7): ignoring causation, the length of the day at the end of the increasing event must equal the length at the beginning plus the degree of length denoted by *5 minutes*.

NOTE: Some previous accounts (e.g., Abusch 1986) have attributed the variable telicity of DAs to a systematic ambiguity in meaning. (see also Declerck 1979; Bertinetto and Squartini 1995).

- (18) a. **Telic:** $\text{CAUSE}(x)(\text{BECOME}(\text{adj}(y)))$
 b. **Atelic:** $\text{CAUSE}(x)(\text{BECOME}(\text{adj} - er(y)))$

In contrast, our analysis does not introduce an ambiguity in the semantic representation of degree achievements. Instead, we account for their (a)telicity in terms of the semantic properties of the difference value *qua* incremental theme: DAs are telic when it is specific and atelic when it is nonspecific.

3 Specifying the difference value

The semantic analysis of degree achievements presented in the previous section makes the following prediction:

Since the terminal point of the entire event can be identified by identifying the sum of the degree to which the affected argument possesses the measured property at the beginning of the event and the degree introduced by the difference value δ :

- if the value of δ is a fixed, specific amount, the endpoint of the event should be identifiable, and the predicate should have a telic interpretation, and
- if the value of δ is nonspecific, the endpoint of the event should not be identifiable (based on the semantics of the predicate), and the predicate should have an atelic interpretation.

Two sets of cases must be considered: those in which the interpretation of the difference value is determined by overt linguistic material, and those in which such material is absent, and the interpretation of the difference value is contextually determined.

3.1 Linguistically determined difference value

3.1.1 Telic interpretations

A specific interpretation of the difference value arises when overt linguistic material has the effect of imposing definite restrictions on the semantic value of δ . This can be accomplished in two ways:

- A measure phrase may explicitly specify the value of δ :

- (19) a. They widened the road 5 meters.
b. The icicle lengthened 3 inches.
c. The lake cooled another 4 degrees.

- (20) a. They are widening the road 5 meters. \nrightarrow
They have widened the road 5 meters.
b. The icicle is lengthening 3 inches. \nrightarrow The icicle has lengthened 3 inches.
c. The lake is cooling another 4 degrees. \nrightarrow
The lake has cooled another 4 degrees.

- Alternatively, the endpoint itself can be specified:

- (21) a. They straightened the rope completely.
b. The cake cooled completely.
c. The sun dried the clothes completely.

- (22) a. They are straightening the rope completely. \nrightarrow
They have straightened the rope completely.
b. The cake is cooling completely. \nrightarrow The cake has cooled completely.
c. The sun is drying the clothes completely. \nrightarrow
The sun has dried the clothes completely.

In both cases, the difference value receives a specific interpretation—either because it is explicitly identified (as in (19)a-c), or because its value can be inferred from the fact that the endpoint of the scale must be reached (as in (21)a-c)—permitting identification of the terminal point of the described event and a telic interpretation of the predicate.

3.1.2 Atelic interpretations

Sentences in which there are no specific constraints on the semantic value of δ (other than an existential requirement) are associated with atelic interpretations:

- (23) a. They straightened the rope slightly.
b. The independent counsel broadened the investigation (further).

- (24) a. They are straightening the rope slightly. \rightarrow
They have straightened the rope slightly. the road a bit.
b. The independent counsel is broadening the investigation (further). \rightarrow
The independent counsel has broadened the investigation (further).

Since the only information we have about the difference value is that it must have some extent, nothing can be inferred about the final measure of change or about the terminal point of the event, and the predicate receives an atelic interpretation.

3.2 Contextually determined difference value

In those cases in which the interpretation of the difference value is not provided by overt linguistic material, the specific/nonspecific distinction has the same effect on telicity, but specificity is determined either by exploiting information about the scalar structure of the adjectival base or by taking advantage of other contextual clues.

3.2.1 Telic interpretations

TELICITY VIA THE SCALAR PROPERTIES OF THE BASE ADJECTIVE

Two types of adjectives:

1. Bounded-range adjectives—adjectives associated with a scale with a maximal value (where maximality is relative to the adjective's polarity) (e.g., *straight, empty, dry*).
2. Unbounded-range adjectives—adjectives associated with a scale with no maximal value (e.g., *long, wide, short*).

A diagnostic:

- (25) a. completely straight/empty/fat (bounded-range adjective)
b. ?? completely long/wide/short (unbounded-range adjective)

This distinction is relevant to telicity (Hay 1998).

- DAs derived from bounded-range adjectives behave telically:

- (26) They are straightening the rope. \nrightarrow They have straightened the rope.

Since the scale associated with the adjective has a maximal value, a specific value for δ can be identified: the measure of change to the end of the scale.

- DAs derived from unbounded-range adjectives behave atelically:

- (27) They are lengthening the rope. \Rightarrow They have lengthened the rope.
 Since the scale associated with the adjective has no maximal value, there is no basis for determining a specific value for δ , and the predicate is interpreted atelicly.

TELICITY VIA THE SEMANTIC CHARACTERISTICS OF OTHER ARGUMENTS

Other aspects of the context can have the same effect as the inherent scale structure of the base adjective.

When the context supports the inference of a maximal increase in the gradable property associated with the affected argument, it allows for the inference of a specific value for δ and a telic interpretation:

- (28) a. The tailor lengthened my pants.
 b. Kim lowered the blind.
 (29) a. The tailor is lengthening my pants. \nRightarrow The tailor has lengthened my pants.
 b. Kim is lowering the blind. \nRightarrow Kim has lowered the blind.

Compare the examples in (30), which are atelic:

- (30) a. The traffic lengthened my commute.
 b. Kim lowered the heat.
 (31) a. The traffic is lengthening my commute. \Rightarrow The traffic has lengthened my commute.
 b. Kim is lowering the heat. \Rightarrow Kim has lowered the heat.

The inference of a specific value for δ can be affected by the nature of the arguments even for a single verb:

- (32) a. The cake cooled (in thirty minutes). (TELIC)
 b. The lake cooled (?in thirty days). (ATELIC)

CONTEXT DETERMINED TELICITY ARISES THROUGH CONVERSATIONAL IMPLICATURE

The specific interpretation of the difference value in the previous examples arises through *conversational implicature*: as shown by (33), the inference of a bounded measure of change is cancellable.

- (33) a. I straightened the rope, but not completely.
 b. The tailor lengthened my pants, but not completely.

The implicature can be explained in terms of principles of informativeness: what is unique about bounded-scale adjectives is that the endpoint of the scale is a possible reference point. It follows that the most informative interpretation of, e.g., *I straightened the rope*, is one in which the rope is straightened completely.

The examples in (33) contrast with those in which a specific δ is explicitly supplied by linguistic material. In such instances, the specific interpretation—and telicity—is not cancellable.

- (34) a. # They straightened the rope completely, but the rope isn't completely straight.
 b. # They widened the road 5 meters, but the road didn't increase in width by 5 meters.

Further evidence that contextually determined telicity arises through implicature comes from the non-redundancy of sentences such as (35)b.

- (35) a. They straightened the rope.
 b. They straightened the rope completely.

3.2.2 Atelic interpretations

When there is no overt material to provide a specific value for δ , and no inference of specificity can be drawn (either from the adjective or the affected argument), the predicate is atelic:

- (36) a. They lengthened the rope.
 b. They widened the road.
 (37) a. They are lengthening the rope. \Rightarrow They have lengthened the rope.
 b. They are widening the road. \Rightarrow They have widened the road.

3.3 Summary

The interaction of linguistic material, context, and the specificity of the difference value in the determination of the telicity of degree achievements is summarized below:

LINGUISTICALLY DETERMINED δ

- overt material imposes definite requirements on δ : *specific*
- overt material imposes no definite requirements on δ : *non-specific*

CONTEXTUALLY DETERMINED δ

- scalar properties of bounded-range adjectives: *specific*
- bounded nature of affected argument: *specific*
- absence of contextual information to support boundedness: *non-specific*

Table 1	LINGUISTICALLY DETERMINED	CONTEXTUALLY DETERMINED
SPECIFIC (<i>telic</i>)	(a) They straightened the rope completely.	(c) They straightened the rope.
NONSPECIFIC (<i>atelic</i>)	(b) They widened the road 5 meters. (e) They widened the road a bit. (f) They straightened the rope slightly.	(d) They widened the ruler. (g) They lengthened the rope. (h) They widened the road.

4 Consequences of the analysis

4.1 Adverbial *durability facts arise when δ is contextually determined*

The specificity of the difference value arises through a conversational implicature in examples in which it is contextually determined; thus, such sentences are in principle open to telic or atelic interpretations:

(38) The soup cooled.

- (39) a. The soup cooled in an hour. (TELIC)
b. The soup cooled for an hour. (ATELIC)

(38) is most informative on the telic interpretation: the soup cools to the maximum degree possible (room temperature). This reading is associated with (39)b, in which the adverbial modifier requires a telic interpretation. But since durative adverbials are felicitous only with atelic predicates, the telic interpretation is cancelled in (39)a.

4.2 Pragmatic factors have a role in determining (a)telicity

On our account the interaction of linguistic and contextual factors determines the specificity of the difference value—the incremental theme—and hence the telicity of a DA. The same interaction should come into play whenever there is an incremental theme since our account is not tied to idiosyncratic properties of DAs.

In fact, contextual factors play a role in well-known examples of (a)telicity:

(40) She is eating the sandwich. \Rightarrow She has eaten the sandwich.

(41) a. She ate the sandwich but as usual she left a couple of bites.

b. ?? She ate the whole sandwich, but as usual she left a couple of bites.

(42) a. She ate the sandwich in 5 minutes.

b. She ate the sandwich for 5 minutes.

(43) a. ?? She ran a mile but didn't quite finish it.

b. She ran a race but didn't quite finish it.

(44) a. ?? She drew a 2cm line, but it wasn't quite 2cm long.

b. She drew a house, but it was missing a door.

4.3 The difference value account extends to verbs of directed motion

Levin and Rappaport-Hovav (1995) point out that not all verbs of directed motion are telic, identifying a class of “atelic verbs of directed motion” (e.g., *ascend*, *extend*, *inflate*, *rise*, *fall*). Like DAs, these verbs have both telic and atelic interpretations.

(45) a. The temperature is falling. \Rightarrow The temperature has fallen.

b. The curtains are falling. \nRightarrow The curtains have fallen.

(46) a. We are extending the rope. \Rightarrow We have extended the rope.

b. We are extending the table. \nRightarrow We have extended the table.

The availability of both telic and atelic interpretations is expected on our account. Like DAs, these verbs denote a change along a projected scale, thus their telicity will depend on the specificity of a difference variable, whose value could be either contextually specified, as in (45)–(46), or linguistically specified, as in (47).

(47) a. The curtains are falling 10ft. \nRightarrow The curtains have fallen 10ft.

b. We are extending the table 2ft. \nRightarrow We have extended the table 2ft.

4.4 Insights into the nature of telicity

4.4.1 Incremental theme and telicity are independent

The analysis demonstrates the independence of telicity and incremental theme (represented here by the difference value), consistent with Krifka (1992) and Ramchand (1997).

Contrary to what is sometimes claimed (e.g., Dowty 1991, p. 607), events may have an incremental theme without being telic (see (e)–(h) in Table 1).

4.4.2 Causation and telicity are independent

Our analysis reaffirms the independence of telicity and causation, as argued by Abusch (1986); Pustejovsky (1991); Valin and LaPolla (1997) and contra (Dowty 1979), who proposes that accomplishments are causatives, a proposal subsequently adopted by Van Valin and colleagues (see Foley and Valin (1984); Valin (1990), but contrast Valin and LaPolla (1997)).

Transitive DAs, unlike intransitive DAs are causatives, yet both may be either telic or atelic. As shown in Table 1, telicity depends only on the specificity of the difference value.

4.4.3 Aspectual notions cannot be the sole determinants of argument expression

(48) THE ASPECTUAL INTERFACE HYPOTHESIS:

The universal principles of mapping between thematic structure and syntactic argument structure are governed by aspectual properties. Constraints on the aspectual properties associated with direct internal arguments, indirect internal arguments, and external arguments in syntactic structure constrain the kinds of event participants that can occupy these positions. Only the aspectual part of thematic structure is visible to the universal linking principles. (Tenny 1994, p. 2).

To the extent that causative DAs are necessarily transitive and noncausative DAs are not and to the extent that (a)telicity has no effect on the expression of the arguments of DAs, DAs provide evidence against the strong Aspectual Interface Hypothesis set out by (Tenny 1994).

References

- Abusch, Dorit. 1986. Verbs of change, causation and time. Technical report, Center for the Study of Language and Information, Stanford University, Stanford, CA. Report CSLI-86-50.
- Bartsch, Renate, and Theo Vennemann. 1973. *Semantic structures: A study in the relation between syntax and semantics*. Frankfurt: Athänum Verlag.

- Bertinetto, P.M., and M. Squartini. 1995. An attempt at defining the class of 'gradual completion' verbs. In *Temporal reference, aspect, and actionality I: Semantic and syntactic perspectives*, ed. P.M. Bertinetto, V. Bianchi, J. Higginbotham, and M. Squartini, 11–26. Torino: Rosenberg and Sellier.
- Bierwisch, Manfred. 1989. The semantics of gradation. In *Dimensional adjectives*, ed. Manfred Bierwisch and Ewald Lang, 71–261. Berlin: Springer-Verlag.
- Declerck, R. 1979. Aspect and the bounded/unbounded (telic/atelic) distinction. *Linguistics* 17:761–794.
- Dowty, David. 1979. *Word meaning and montague grammar*. Dordrecht: Riedel.
- Dowty, David R. 1991. Thematic proto-roles and argument selection. *Language* 67:547–619.
- Faller, Martina. 1998. A vector space semantics for comparatives. Ms., Stanford University.
- Foley, W.A., and Robert Van Valin. 1984. *Functional syntax and universal grammar*. Cambridge, UK: Cambridge University Press.
- Hay, Jen, Christopher Kennedy, and Beth Levin. 1999. Scale structure underlies telicity in 'degree achievements'. In *Proceedings of SALT IX*, ed. Tanya Matthews and Devon Strolovitch, 127–144. Ithaca, NY: CLC Publications.
- Hellan, Lars. 1981. *Towards an integrated analysis of comparatives*. Tübingen: Narr.
- Jackendoff, Ray. 1996. The proper treatment of measuring out, telicity, and perhaps even quantification in english. *Natural Language and Linguistic Theory* 14:305–354.
- Kennedy, Christopher. 1999. *Projecting the adjective: The syntax and semantics of gradability and comparison*. New York: Garland. (1997 UCSC Ph.D. thesis).
- Kennedy, Christopher. to appear. Polar opposition and the ontology of 'degrees'. *Linguistics & Philosophy*.
- Krifka, Manfred. 1989. Nominal reference, temporal constitution and quantification in event semantics. In *Semantics and contextual expression*, ed. Renate Bartsch, Johann van Benthem, and Peter van Emde Boas, 75–115. Stanford, CA: CSLI Publications.
- Krifka, Manfred. 1992. Thematic relations as links between nominal reference and temporal constitution. In *Lexical matters*, ed. Ivan Sag and Anna Szabolcsi. Stanford, CA: CSLI Publications.
- Levin, Beth, and Malka Rappaport-Hovav. 1995. *Unaccusativity: At the syntax-lexical semantics interface*. Cambridge, Mass.: MIT Press.
- Pustejovsky, James. 1991. The syntax of event structure. *Cognition* 41:47–81.
- Ramchand, Gillian C. 1997. *Aspect and predication*. Oxford: Clarendon Press.
- Seuren, P.A.M. 1978. The structure and selection of positive and negative gradable adjectives. In *Papers from the Parasession on the Lexicon, Chicago Linguistics Society*, ed. Donka Farkas, W.M. Jacobsen, and K.W. Todrys, 336–346. Chicago: Chicago Linguistic Society.
- von Stechow, Arnim. 1984a. Comparing semantic theories of comparison. *Journal of Semantics* 3:1–77.
- von Stechow, Arnim. 1984b. My reply to cresswell's, hellan's, hoeksema's and seuren's comments. *Journal of Semantics* 3:183–199.
- Tenny, Carol. 1987. Grammaticalizing aspect and affectedness. Doctoral Dissertation, Massachusetts Institute of Technology.
- Tenny, Carol. 1994. *Aspectual roles and the syntax-semantics interface*. Dordrecht: Kluwer.
- Valin, Robert Van. 1990. Semantic parameters of split intransitivity. *Language* 66:221–260.
- Valin, Robert Van, and R.J. LaPolla. 1997. *Syntax: Structure, meaning and function*. Cambridge, UK: Cambridge University Press.
- Verkuyl, Henk J. 1993. *A theory of aspectuality*. Cambridge: Cambridge University Press.

Contact Information

Department of Linguistics
Northwestern University
2016 Sheridan Rd.
Evanston, IL 60208-4090
kennedy@northwestern.edu