At first glance, Northern Paiute appears to have a fairly typical aspectual system. On the one hand, there is a suffix that conveys perfective aspect.

(1)

a. Su=nana ti=kaadzi madabbui-hu.
   NOM=man REFL=car fix-PFV
   ‘The man fixed his car.’ (elicitation, MS and EM, BP44-4, 4:38)

b. Su=nana ti=kaadzi madabbu’i.
   NOM=man REFL=car fix.DUR
   ‘The man is fixing his car.’ (elicitation, EM and MS, BP44-4, 3:34)

On the other, there is a process of ‘durative gemination’ that seems to fit traditional characterizations of the imperfective aspect. It expresses “[a]n aspectual distinction typically interpreted as durative. . . ” (Thornes 2003:413).

• Perfective aspect: “presents the totality of the situation referred to” (Comrie 1976:4)

• Imperfective aspect: “makes explicit reference to the internal temporal constituency of the situation” (Comrie 1976:4) or “focus[es] part of a situation, including neither initial nor final endpoints” (Smith 1997:3)

With achievement predicates, however, durative gemination entails that the event has reached its endpoint; it is incompatible with a continuation that asserts incompleteness (Toosarvandani 2014).

On the other, there is a process of ‘durative gemination’ that seems to fit traditional characterizations of the imperfective aspect. It expresses “[a]n aspectual distinction typically interpreted as durative. . . ” (Thornes 2003:413).

(2)

Amamu’a su=naatsi’i mi’u.  (#Yaisi kaisu mia-maggwi-hu).
   morning NOM=boy leave.DUR PTC not.yet leave-COMPL-PFV
   ‘This morning, the boy left. (He hasn’t left yet.)’ (elicitation, EM, BP51-1, 2:00)
   [EM: “. . . well, sound like that he’s not gone yet. . . [It don’t make sense.]” achievement

What is the meaning of durative gemination in Northern Paiute such that it gives rise to this culmination entailment with achievements?

I argue that durative gemination in Northern Paiute has essentially the same semantics as the imperfective aspect in some more familiar languages:

• I adopt the situation semantic account of Arregui et al. (2014) for the imperfective aspect in French and other Romance languages, which builds on earlier work by Cipria and Roberts (2000).

• I propose that differences between durative gemination in Northern Paiute and the imperfective aspect in other languages, including whether there is a culmination entailment, arise for independent reasons.

In the remainder of this talk, I will do the following:

– briefly sketch the morphology and syntax of durative gemination in Northern Paiute

– lay out a proposal for its meaning based on Arregui et al.’s (2014) situation semantic account, demonstrating how it derives the culmination entailment with achievements in Northern Paiute

– show that a prediction of the proposed account is borne out, which involves the interpretation of durative gemination in discourse

– close by reviewing some of the variation in the behavior of the imperfective aspect in Northern Paiute and other languages

What is ‘durative gemination’?

Morphologically, durative gemination does one of two things to a verb:

• If the onset of the final syllable is a lenis consonant (short and voiced), it becomes fortis (long and voiceless).

(3)

a. hi b!i
   ‘drink’

b. pi d!i-
   ‘arrive’

c. yo d!i
   ‘fly off’

d. i g!a
   ‘enter’

e. igwi – i kw!i
   ‘smell (tr.)’

f. kvonnu
   ‘smell (intr.)’

g. ku m!i
   ‘dive’

• If there is no onset or if the onset is a glide, a glottal stop is inserted instead.

(4)

a. madabbui – madabbu’i
   ‘fix’

b. mays – ma’yi
   ‘find’

c. t!wi – t’o!i
   ‘fall asleep’

The same process is attested— albeit in a more restricted fashion—in other Numic languages, e.g. Mono (Lamb 1957:246), Shoshoni (Crum and Dayley 1993:94), and Kawaiisu (Zigmond et al. 1990:96).

I will assume that durative gemination, represented as an infix ‘-’ , realizes the same Asp(ect) functional head that the other aspectual suffixes do.
For this reason, it would be desirable to treat durative gemination as conveying imperfective aspect. Within Reichenbachian frameworks for tense and aspect (Reichenbach 1947, Klein 1994), it would locate a topic time (or reference time) within the event time (or situation time).

Durative gemination conveys an aspectual category that is in complementary distribution with other markers of aspect, e.g. the progressive suffix, the perfective suffix, or durative gemination.

2 The proposal

As we have already seen, durative gemination usually gives rise to an EVENT-IN-PROGRESS INTERPRETATION. With activity and accomplishment predicates, it is compatible with a continuation that asserts incompletion.

For activities, a REALISTIC ACCESSIBILITY RELATION gives rise to the event-in-progress interpretation, in which the topic situation contains a proper subpart of the event.

This straightforwardly captures the intuition underlying the traditional ‘viewpoint’ metaphor for imperfective aspect. The topic time is the perspectival point from which the internal constituency of the event is viewed.

But durative gemination cannot locate the topic time ENTIRELY WITHIN the event time, because achievements have a COMPLETED INTERPRETATION. As we have seen, they entail event culmination.

I adopt Arregui et al.’s (2014) situation semantic account of the imperfective aspect in French and other Romance languages to account for both the event-in-progress and completed interpretations of durative gemination in Northern Paiute.

2.1 A situation semantic account of durative gemination

What is a situation? It is simply a part of a possible world, which represents one way the world could be (Kratzer 1989, 2014). Every sentence is evaluated relative to a TOPIC SITUATION, which plays the same role as the topic time in more familiar Reichenbachian frameworks.

Under Arregui et al.’s (2014) account, durative gemination in Northern Paiute expresses universal quantification over situations. Like a modal, the domain of quantification is restricted by an accessibility relation.

For activities, a REALISTIC ACCESSIBILITY RELATION gives rise to the event-in-progress interpretation, in which the topic situation contains a proper subpart of the event.
With the realistic accessibility relation, durative gemination is true in a situation where every proper sub-situation contains a leaving event. (By the subinterval property, every subpart of a leaving event is also a leaving event.)

A situation \(s_t\) in which 16 is true with the terminative accessibility relation

\[
\text{leaving}_{s_t}\]

For achievements, this gives rise to the completed interpretation, in which the topic situation contains the event, and hence also its culmination.

With the terminative accessibility relation, durative gemination is true in a situation that contains a leaving event especially because every situation that only contains events that terminate in that situation contains this leaving event.

A situation \(s_t\) in which 19 is true with the terminative accessibility relation

\[
\text{leaving}_{s_t}\]

Under the proposed account, achievements give rise to a culmination entailment because they are only compatible with the terminative accessibility relation, and hence only have a completed interpretation.

2.3 Crosslinguistic variation in event culmination

In this respect, imperfective aspect in other languages does not always behave like durative gemination in Northern Paiute. While the imperfective in Russian gives rise to a culmination entailment with achievements (Altshuler 2010, 2014), the imperfective in French does not (cf. Jayez 1999:148).
3 Testing a prediction

The account I have proposed for durative gemination in Northern Paiute makes an important prediction. If the terminative accessibility relation is freely available, it should be available with non-achievement predicates, such as accomplishments, giving rise to a completed interpretation.

If the imperfective aspect has essentially the same semantics in Northern Paiute and French, how does this crosslinguistic variation arise? The lexical semantics of achievement predicates may vary across languages:

- In Northern Paiute (and Russian), achievements can simply describe an instantaneous change-of-state event, which makes them compatible only with the terminative accessibility relation.
- In French, achievements are either very short accomplishments (Verkuyl 1989:55–58) or they can be coerced into accomplishments (Rothstein 2004:56–58). Thus, they are also compatible with the inertial accessibility relation, just like accomplishments, which do not give rise to a culmination entailment.

This explanation finds support even within Northern Paiute, since not all achievements give rise to a culmination entailment (Toosarvandani 2014).

For the rest of the talk, I will continue to concentrate on the first class of achievements:

- **Achievements with a culmination entailment**
  - *tsibu* ‘emerge’, *puya* ‘reach the summit’, . . .

Arregui et al.’s (2014) semantics for the imperfective in French and other Romance languages can be extended to durative gemination in Northern Paiute; it accounts for the culmination entailment with achievements.

### 3.1 A partitive alternative

To account for the culmination entailment with achievements in Russian, Altshuler (2010, 2012, 2014) proposes a ‘partitive’ analysis, following earlier work by Filip (1999:185, 2000). The imperfective does not have to pick out a proper subpart of the event described by the predicate.

Within a situation semantic framework, this basic idea can be implemented by modifying the realistic accessibility relation. The terminative accessibility relation would no longer be needed to derive the culmination entailment.

Under this partitive alternative, achievements would give rise to a culmination entailment with the alternative realistic accessibility relation. Durative gemination would be true in a situation that is very small and contains just the event described by the achievement.

But it makes a different prediction about accomplishments. Durative gemination should be **false** if the topic situation contains the entire event.
A situation \((s_t)\) in which 23 should be false with the alternative realistic accessibility relation

\[
\begin{array}{c}
\text{fixing} \\
\downarrow \\
Ds \\
\end{array}
\]

There are many subparts of the topic situation that do not contain a fixing event, though they may contain part of a fixing event. (This is because accomplishments do not exhibit the subinterval property.)

In sum, the proposed account and its partitive alternative make different predictions for accomplishments:

- The proposed account
  - The topic situation should be able to contain the entire event described by an accomplishment.
- The partitive alternative
  - The topic situation should not be able to contain the entire event described by an accomplishment.

### 3.2 Durative gemination in discourse

In narrative discourse, sentences are typically interpreted in a temporal sequence (Kamp and Rohrer 1983). In English, while the perfective aspect advances the narrative, the progressive aspect does not.

(28)  
- Jameson entered the room. He shut the door. He switched off the light.  
- Josephine turned around. The thief was fumbling in his bag. She fired her gun.

In French, however, the imperfective aspect can advance the narrative, a use that is traditionally called the imperfect femelle narrative (Jayez 1999:148, a.o., pace Kamp and Rohrer 1983:258).

(29)  
\text{French}  
\begin{align*}
\text{A huit heures, les voleurs entraient dans la banque, ils discutaient avec un employé à eight hours the robbers entered the bank they discussed with a clerk} \\
\text{puis se dirigeaient vers le guichet principal.} \\
\text{then 3 move.IPfv.3pl toward the desk main} \\
\text{‘At eight, the robbers entered the bank, they discussed with a clerk, then they moved towards the main desk.’ (Jayez 1999:159.)}
\end{align*}

To account for this, narrative progression must depend, not on the aspectual category of a sentence, but on the relation expressed between the topic situation (or time) and the event (Jayez 1999, Grann 2008, Arregui et al. 2014):

- Perfective always advances the narrative, since it requires the topic situation to contain an entire event.
- Imperfective sometimes advances the narrative, but only when the topic situation contains an entire event.

We can use narrative progression to test whether an instance of durative gemination has a completed interpretation or not. When it advances the narrative, the topic situation must contain the entire event.

In Northern Paiute, durative gemination can advance the narrative, both with achievements (30a) and with accomplishments (30b).

(30)  
- a. Yaa hibbi itibbi-ma kati pita-ga, sumnaatsi’i u ma si’ e-hu-si.  
  - The boy sat down on the rock, because he got scared of him. The dog laid down on the ground.”  
  - (prompted narrative, EM, BP25-2-11, 86–87)
- b. Yaisi umamaya-ki na u-hu,  
  - Then, when you are gathering them, you pick them and put them in the winnowing basket. Then, if you have a burden basket, you put them in it.’ (procedure, MS, BP09-1-14, 23–24)

This can be shown with elicited data as well. In a situation where the event described by the accomplishment has culminated, a sentence with durative gemination is judged as true.

(31)  
\text{Context: The woman finished making a basket. Then, someone sets it on fire and it burns.}

- a. Su=mogo’ni ka=oppo madabbu’i. Yaisi ne-hu.  
  - ‘The woman made the basket. It burned.’ (elicitation, EM, BP56-6, 16:32)
- b. #Su=mogo’ni ka=oppo madabbi-winni. Yaisi ne-hu.  
  - ‘The woman was making the basket. It burned.’ (elicitation, EM, BP56-6, 18:57)
- c. Su=mogo’ni ka=oppo madabbi-hu. Yaisi ne-hu.  
  - ‘The woman made the basket. It burned.’ (elicitation, EM, BP56-6, 18:13)

As predicted, durative gemination can have a completed interpretation with an accomplishment predicate, in which the topic situation contains the entire event it describes.

### 3.3 Crosslinguistic variation in narrative progression

In some languages, it is not possible to use narrative progression in this way. In Russian, the imperfective never advances the narrative, even with achievements, which only have a completed interpretation.

(32)  
\text{Russian}  
\begin{align*}
\#\text{Lev ko mne priezra-l i sruzu poče-l kušat’}. \\
\text{Lev arrived at my place and went to go eat right away.}  \\
\text{‘Lev arrived at my place and went to go eat right away.’ (Altshuler 2010:184)}
\end{align*}

But the Russian imperfective also does not fail to advance the narrative. In fact, it always requires the reverse temporal ordering, regardless of the aktionsart of the predicate.
Russian

Nedelju nazad Marija po-celova-l-a Dudkin. Za nedelju do togo on dari-l
week ago Maria kiss-PAST,3SG-F Dudkin from week to that he give:IPFV-PAST,3SG

rj cvety i prigliaša-l ee v tear.
her flowers and invite:IPFV-PAST,3SG her to theater

‘A week ago, Maria kissed Dudkin. A week before that she had given her flowers and had invited her to
the theater.’ (Altshuler 2012:59)

This is likely an idiosyncratic property of the imperfective in Russian, which may be able to be represented in its
lexical entry (see Altshuler 2010, 2012).

4 Conclusion

Durative gemination in Northern Paiute conveys imperfective aspect. To account for its meaning, I adopted
Arregui et al.’s (2014) situation semantic account for the imperfective aspect in French and other Romance
languages.

In particular, the culmination entailment in Northern Paiute arises because the domain of quantification in
durative gemination can only be restricted by the terminative accessibility relation with achievements.

This suggests that there may be a fairly uniform semantics for the imperfective aspect across languages, even
though there is crosslinguistic variation in its behavior.

<table>
<thead>
<tr>
<th></th>
<th>FRENCH</th>
<th>RUSSIAN</th>
<th>N. PAIUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Has event-in-progress reading</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>(ii) Culmination entailment with achievements</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>(iii) Allows narrative progression</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

Each ‘no’ in the first two columns arises plausibly because of an idiosyncratic property of the language:

• The imperfective in French does not give rise to a culmination entailment with achievements because of
  their lexical semantics.

• The imperfective in Russian does not allow for narrative progression because it idiosyncratically imposes
  the reverse temporal ordering.

In the end, durative gemination in Northern Paiute may represent the basic meaning of imperfective aspect most
transparently.

Data and acknowledgements

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