

# The ability root in Palestinian Arabic and its actuality entailment\*

Sam Alxatib<sup>†</sup> · Graduate Center, CUNY

## Abstract

The ability root in Palestinian Arabic (PA) licenses actuality entailments under perfective-marking, but not under imperfective-marking. In this, the root mirrors the behavior of similar expressions in other languages. However, further morphosyntactic environments that are unique to PA provide empirical arguments against certain theoretical accounts of actuality entailments, and show a robust correlation between aspect-shifting and actuality-entailment licensing.

**Keywords:** Actuality entailment, Palestinian Arabic, aspect, telicity, modals, implicativity, aspect-shift.

## 1 Introduction

This paper has two goals. The first is to add to the growing body of cross-linguistic data relating to the puzzling phenomenon of Actuality Entailment (AE). The data that I will present come from Palestinian Arabic (PA), and they are focused primarily on the behavior of the PA ‘ability’ root. The second goal is to discuss the relevance

---

\*The project that led to this paper began in a conversation that I had with Livia Camargo Souza about modals in Brazilian Portuguese. I thank her for her input, and for inspiring me to think about Palestinian Arabic. For suggestions and discussion, I thank Yi-Hsun Chen, Veneeta Dayal, Reem Faraj-Kanjawi, Kai von Fintel, Jane Grimshaw, Valentine Hacquard, Felipe Hisao Kobayashi, Fabienne Martin, Jon Nissenbaum, Roumi Pancheva, Orin Percus, Alaa Sharif, Yael Sharvit, three anonymous *NLLT* reviewers, and audiences at the Rutgers SURGE group, the CUNY colloquium series, and NELS 46. An older and much simpler version of this paper appeared in the NELS 46 proceedings volume as Alxatib 2016a.

<sup>†</sup>Corresponding author.

of these data to theories of AE licensing. I will pay particular attention, first, to the role that is played, or thought to be played, by the imperfective form (IMP) in blocking AEs, and second, to the connection between AE-licensing and aspect shift. On the first issue, I will claim that the PA imperfective form does indeed block AEs, but not because of its modality, as thought by Bhatt (1999, 2006) and Hacquard (2006, 2009). Rather, the blocking comes from the viewpoint aspect semantics of IMP. The argument will be based on comparing IMP to another PA form that blocks AEs, but that does not appear independently to introduce any modal layer of its own. On the second issue, I will show that the ability root in PA licenses AEs in a number of morphosyntactic contexts: the past perfective is one (PFV) — PA is like many languages in this respect — but also the simple future (FUT), the progressive (PROG), and the past habitual (HAB). These forms have in common another feature, which is that they give other stative roots a shifted, telic interpretation. I will claim this to provide support for the view that links AE licensing to aspect-shifting (Homer 2010, 2011).

I will begin with a short description of AEs (Section 2), along with a review of some of the prominent accounts of them (Section 3). In Section 4 I summarize the main PA facts, and in Section 5 I discuss what I believe they tell us about the source of AEs, as outlined above.

## 2 Ability and Actuality Entailments

### 2.1 Background

Actuality Entailments (AEs) are inferences whose premises appear to be modal, but whose content is that the modality was realized in the evaluation world. Languages that most clearly exhibit AEs are typically languages that morphologically distinguish the perfective (PFV) from the imperfective (IMP), and that permit the two markers to accompany modal verbs/auxiliaries. The examples below are from Hindi, Greek, French, and Palestinian Arabic (PA)<sup>1</sup>: in the (a) examples the ability verb is PFV-marked, and the AE results; in the (b) examples the ability verb is IMP-marked, and there is no AE. (For the moment I limit discussion to these two aspect categories — I turn to others in Section 4.)<sup>2</sup>

(1) Hindi:

- a. Iti vimaan ur.aa sak-aa (#lekin us-ne vimaan nahī ur.aa-yaa)  
 Iti airplane fly able-PFV ( but he-erg air-ship NEG fly-PFV)  
 ‘Iti could fly the airplane, but he didn’t fly the airplane.’

---

<sup>1</sup>The PA judgements reported in this study came from informal elicitations with eight personal acquaintances of the author’s. All eight are adult native speakers of Palestinian Arabic. Judgements from other languages were taken from the cited references, and in one instance, from comments of an anonymous NLLT reviewer that were later partially confirmed from personal elicitations.

<sup>2</sup>Though these languages differ from English in overtly distinguishing PFV from IMP, the inferences in the (a) examples—the AEs that is—have been known to have parallels in English itself, as in *John was able to hit three bullseyes in a row*. See von Wright 1963 and Thalberg 1969.

- b. Iti vimaan ur.aa sak-taa thaa (lekin vo vimaan nahĩ ur.aa-taa  
 Iti airplane fly able-IMP be.PAST (but he airplane NEG fly-IMP  
 thaa)  
 be.PAST)  
 ‘Iti is/was able to fly airplanes but he doesn’t/didn’t fly airplanes.’

(2) Greek:

- a. Boresa na tu miliso (#ala ðen tu milisa)  
 able.PAST.PFV.1sg NA him talk-PFV.1sg but NEG him talk.pst-PFV  
 ‘I could talk to him, but I didn’t.’
- b. Borusa na sikoso afto to trapezi ala ðen to sikosa  
 able.PAST.IMP.1sg NA lift-PFV.1sg this the table but NEG it lift-PFV  
 ‘I could lift this table, but I didn’t.’

(3) French:

- a. Jane a pu soulever cette table, #mais elle ne l’ a pas soulevée  
 Jane could-PFV lift this table, #but she didn’t lift it  
 ‘Jane was able to lift this table, but she didn’t lift it.’
- b. Jane pouvait soulever cette table, mais elle ne l’a pas soulevée  
 Jane could-IMP lift this table, but she didn’t lift it  
 ‘Jane was able to lift this table, but she didn’t lift it.’

(4) PA:

- a. ∅ ʔidir jrawwih, (#bas maa rawwah)  
 pro able.PAST.PFV 3sg.MASC-go.home, but NEG go.home.PAST.PFV  
 ‘He was able to go home, but he didn’t.’
- b. ∅ kaan biʔdar jrawwih, bas maa rawwah  
 pro PAST able.IMP 3sg.MASC-go.home, but NEG go.home.PAST.PFV  
 ‘He was able to go home, but he didn’t.’

Any account of these data must explain both (i) why PFV-marking produces the AE, and (ii) why IMP-marking does not — the (a) cases and the (b) cases respectively. These two questions will help us compare the accounts of AEs that we will consider, so I will on occasion refer back to them as  $Q_{\text{PFV}}$  and  $Q_{\text{IMP}}$ , respectively.

The main division between the four accounts of AEs that concern us will depend on how they answer  $Q_{\text{IMP}}$ . In one group we have Bhatt 1999 and Hacquard 2006, which despite important differences share the claim that it is the *modality* of IMP that blocks AEs. (Let me make it clear that, by “blocking AEs”, I mean preventing the entailment from being licensed by the truth conditions; I do not mean entailing the negation of the AE.) In the other group, which contains Piñón 2009 and Homer 2010, AEs are not connected to absence of modality, but to aspect. On these two views, ability expressions are about modal *states*, and they remain so under IMP because the *viewpoint* semantics of IMP tolerates unbounded predicates. Under PFV-marking, AEs result because the viewpoint semantics of PFV imply, or require, boundedness, so when PFV is combined with an ability verb, the mismatch triggers a repair that ultimately generates the AE. The precise characterization of the mismatch, and of the repair, differs between these two accounts. To Piñón, it is pragmatic; to Homer, it has

deeper roots in the grammar. In the next section I expand on these brief descriptions, and later move to the PA data.

### 3 Accounts of AEs

#### 3.1 Bhatt (1999/2006): ability modals as implicative predicates

On the traditional Kratzerian view, verbs of ability are like other modals in quantifying over accessible worlds. From this perspective AEs seem puzzling; why should verbs of ability (under PFV) provide the additional inference of *actual* realization if their semantics are merely modal?

To Bhatt, the answer is that verbs of ability are not modal at all, at least not in what they assert. Instead they are better treated as implicative verbs, like the English verb **manage**, which has been argued to assert the content of its VP complement (Karttunen 1971, Karttunen and Peters 1979).

- (5) a. John managed to mow his lawn  
 $\implies$  John mowed his lawn  
 b. John didn't manage to mow his lawn  
 $\implies$  John didn't mow his lawn

From this apparent assertoric equivalence between **managed to X** and **Xed**, Karttunen and Peters proposed that the verb asserts exactly the content of its VP argument, but adds the conventional implicature that the action denoted by that argument is in a sense difficult, or demanding of effort.<sup>3</sup> In the same spirit, Bhatt speculates that **able to** (like **manage**) also asserts its VP argument, and adds the conventional implicature that its subject, e.g. Iti in (1), was trying to perform the activity denoted by the VP argument. So, speaking informally, and without making it clear what we mean by “requiring effort” or “trying to perform *P*”, the lexical entries of **manage** and **able** look something like (6):<sup>4</sup>

- (6) a.  $\llbracket \mathbf{manage} \rrbracket = [\lambda P : P \text{ requires effort} . \lambda x . P(x)]$   
 b.  $\llbracket \mathbf{able} \rrbracket = [\lambda P . \lambda x : x \text{ is trying to perform } P . P(x)]$

From (6b), which is Bhatt’s semantics of ability verbs, a straightforward explanation of the AEs in (1a, 2a, 3a, 4a) follows: because ability verbs are implicative, they will by their semantics *directly entail* the content of their complement. So, the simple answer to why PFV-marked ability verbs license AEs is that their meaning is equivalent to the meanings of the VPs they embed. This is Bhatt’s answer to  $Q_{\text{PFV}}$ .

<sup>3</sup>Baglini and Francez (2016) revisited Karttunen and Peters’s (1979) analysis and offered a different take on the meaning of **manage**. The details need not concern us here.

<sup>4</sup>Note that what Karttunen and Peters would call a “conventional implicature” is represented as a definedness condition in the two entries, a formal notion that is typically used to capture presuppositions. Whether the inferences of these implicative verbs should be represented in this way is something that I do not address here, as it does not affect my main claims.

But if verbs of ability have *realization* as their meaning, why does IMP-marking block their AEs? Here Bhatt appeals to the potential generic semantics of IMP, which in many languages is known to permit readings that reference ‘ideal’ possibilities rather than actual ones.<sup>5</sup> Examples of these readings in Greek, and PA, are shown in (7-8).

- (7) Afto to robot sikone                    trapezia ala pote    den    hrisimopiithike  
 This the robot lift-IMP-PAST tables    but never NEG use-PASS.PFV  
 ‘This robot lifted tables but it was never used.’
- (8) Hada r    robot kaan bihmel    tawlaat, bas ma    fomro hada    stafmal-o  
 This    the robot PAST carry.IMP tables,    but NEG ever    anyone used-it

Examples like (7-8) show that IMP-marking can provide non-actual truth conditions, more specifically, that an IMP-marked verb does not necessarily indicate the realization of an *actual* event that satisfies its description. The robot in (8), for instance, need never have taken part in any events of carrying tables in order for the sentence to be judged true; the sentence says, rather, that by its design the robot had the capacity to carry tables, a condition that can be met without instantiation. This is the mark of generic modality, and is often associated with the imperfective in natural language. We may therefore write that, for any proposition  $p$  and evaluation world  $w$ :

- (9)  $\llbracket \text{IMP} \rrbracket(p)(w) = 1$  iff  $\text{GEN}(p)(w) = 1$ , and given that  $\text{GEN}(p)$  does not require actuation,  
 $\llbracket \text{IMP} \rrbracket(p)(w) = 1 \not\equiv p(w) = 1$

To Bhatt, it is this (independently motivated) property of IMP-marking that keeps the (b) examples in (1-4) from licensing AEs. From the generalization schematized in (9) we derive the more specific case of IMP-marked *ability* verbs as follows:

- (10)  $\llbracket \text{IMP} \rrbracket(\llbracket \text{able} \rrbracket(p))(w) = 1$  iff  $\text{GEN}(\llbracket \text{able} \rrbracket(p))(w) = 1$   
 $\not\equiv \llbracket \text{able} \rrbracket(p)(w) = 1$   
 $\not\equiv (p)(w) = 1$

And so it follows that the Hindi (1b), for example, requires that situations compatible with (past) generic accessibility — these being situations that are typical in some sense, or situations in which capacities of the relevant entity are realized — be ones where Iti is able to ( $\approx$  *manages to*) fly the plane. By the meaning of “able to”, it follows that these situations contain, or consist of, flying events by Iti, but nothing from this follows about whether Iti actually flew the plane in the evaluation world. On Bhatt’s analysis it can therefore be maintained that ability expressions are implicative, which explains their AEs under (non-modal) PFV-marking, and at the same time explain the absence of AEs under IMP-marking. In these cases, it is the generic modality of IMP, rather than the meaning of the ability verb, that blocks the inference to realization.

---

<sup>5</sup>See Arregui et al. 2014 for a crosslinguistic survey of the different uses of IMP-marking.

In sum, Bhatt’s answer to  $Q_{\text{PFV}}$  is that ability effectively *means* realization, and with PFV-marking the resulting truth conditions say that the given VP was instantiated by some event in the evaluation world. His answer to  $Q_{\text{IMP}}$  is that IMP has a reading that permits non-actual truth conditions, so it provides a layer of modality that blocks AEs.

Bhatt’s proposal faces a number of challenges, however, of which I will mention one that was discussed in Hacquard 2006: the implicative analysis leads us to expect verbs like **manage** to also lose actuality inferences under IMP-marking. But the facts do not seem to support this, as Hacquard’s example in (11) shows:

- (11) Darcy réussissait à soulever cette table, #mais il ne la soulevait pas  
 Darcy succeed-IMP to lift this table, #but he NEG it lift.IMP NEG.  
 ‘Darcy succeeded in lifting this table, but he didn’t lift it.’

In response, Bhatt suggests that IMP takes a different reading when it appears on **manage** from the one that it takes with **able**: in the former, the reading is “universal” and requires actual instantiation; in the latter it is “dispositional” and does not require actual instantiation.<sup>6</sup> But as Hacquard (2006) has pointed out, unless there is some independently-motivated predictor of which flavor of genericity IMP takes with which expression, the proposal amounts to little more than a restatement of the question.<sup>7</sup>

I mention this issue in particular because the challenge from PA that I will discuss has a similar profile: it is a morphosyntactic context (PRT) that, like IMP, blocks AEs when it hosts the ability root, but unlike IMP does not appear to have any modality when it hosts other roots. In this case too, as I will reiterate in Section 5, one could say that PRT is modal, and add that the modality is, say, dispositional in the case of the ability root and therefore blocks AEs, but with other roots it is of a different kind that has *actual* inferences. Such a response cannot be maintained unless it is accompanied with independent support. The conclusion that I will draw from the PA data is that the ability root is not implicative, and therefore that its AE results from something external to its meaning. The same datum, I will claim, poses a problem for Hacquard’s account of AEs, to which I now turn.

### 3.2 Preservation of Event Descriptions: Hacquard 2006/2009

As I said, Hacquard’s account is different from Bhatt’s, but the difference (as I will show) lies primarily in how she answers  $Q_{\text{PFV}}$ ; for our purposes, her answer to  $Q_{\text{IMP}}$  is like Bhatt’s in drawing on the modality of IMP.

Hacquard assumes that verbs of ability are modal. She derives AEs by combining assumptions about the semantics/syntax of aspect heads with a general principle about event properties. The assumptions are as follows. First, PFV is taken to introduce an event in its local evaluation world, and to assign to it the description

<sup>6</sup>Bhatt attributes this distinction to Lawler (1973), Dahl (1975). See also Carlson’s (1995) distinction between “inductive” and “rule”-based accounts of genericity.

<sup>7</sup>For a detailed discussion, see Hacquard 2014; see also Falk and Martin 2017 for discussion of cases where **manage** takes generic readings.

provided by the given VP. IMP also introduces events of this kind, but it does so in worlds that are accessible by generic modality, not in the evaluation world.<sup>8</sup>

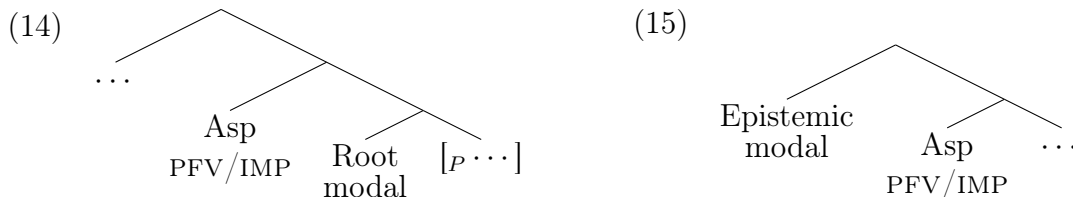
- (12) a.  $[[\mathbf{PFV}]]^{w,t} = [\lambda P_{\langle s,vt \rangle} . \exists e(P(w)(e) = 1 \ \& \ \tau(e) \sqsubset t)]$   
 b.  $[[\mathbf{IMP}]]^{w,t} = [\lambda P_{\langle s,vt \rangle} . \forall w'(w' \in \text{GEN}_{w,t} \rightarrow \exists e(P(w')(e) = 1))]$

Second, events do not have differing descriptions across (accessible) possible worlds: if an event  $e$  belongs in the domain of events in two worlds  $w, w'$ , and if  $w'$  is accessible from  $w$ , and  $e$  has property  $P$  in  $w'$ , then  $e$  also has property  $P$  in  $w$ . This is Hacquard's Preservation of Event Descriptions principle:

- (13) **The Preservation of Event Descriptions (PED)**  
 For all worlds  $w_1, w_2$ , if  $e$  occurs in  $w_1$  and in  $w_2$ , and  $e$  is a  $P$ -event in  $w_1$ , then *ceteris paribus*,  $e$  is a  $P$ -event in  $w_2$  as well.

A third assumption that is important to Hacquard is that the *domains of events* differ from world to world. This makes it possible to have events (with all kinds of properties) in certain accessible worlds, without any commitment to having identical events locally. The move is necessary to capture the absence of AEs under IMP-marking, and under epistemic modals, as I will show soon.

Finally, root modals, including ability verbs, are interpreted below aspect heads (14). (Epistemic modals are interpreted above aspect heads, as in (15). I return to this shortly):



Now, consider a case like (14) where Asp is occupied by PFV, and where an ability modal appears below it. Here, by the assumed syntactic structure, and by the entry of PFV in (12a), the truth conditions will require that some eventuality  $e$  exist in the evaluation world, and that  $e$  be an eventuality of ability-to- $P$ ,  $P$  being the phrase below the modal. In this case, the eventuality  $e$ , which is actual, is assigned a modal description: it is an eventuality that in some accessible world satisfies  $P$ . Because of the PED, the properties that  $e$  has in accessible worlds must also hold of  $e$  in the evaluation world. It follows that  $e$  is a  $P$ -eventuality in the evaluation world as well. This is the AE.

When IMP takes the place of Asp in (14), the AE no longer results. The reason for this on Hacquard's view is the same as it is on Bhatt's: By its (generic) semantics, IMP introduces events in accessible worlds, not in the evaluation world. So the truth conditions that result in the case of IMP will not say anything about whether

<sup>8</sup>The entry of IMP in (12b) is specific to its generic uses. We will return to other, non-modal uses later.

any events *actually* instantiate  $P$ ; instead, we get  $P$ -events in whatever worlds are accessible by the given notion of genericity. The *existence* of such events does not entail their existence in the evaluation worlds, thanks to the assumption of variability of event domains. No AE follows here, then.

A similar relation between modality and event introduction prevents epistemic modals, correctly, from licensing AEs on Hacquard’s proposal. This is so even when the modal is PFV-marked. In such cases, the modal takes semantic scope *above* the aspect head (15), so the event introduced by PFV is placed in the domain of epistemically-accessible worlds, not the evaluation world. No AEs follow in this case either.

The details of Hacquard’s account of AEs are subtle, and they have nontrivial consequences (see e.g. Portner 2009 for critical discussion). For our purposes we may summarize the account as follows: (i) PFV-marking on an ability modal licenses AEs because (a) by its semantics, PFV introduces an eventuality argument in the evaluation world, which is then given a modal description, and (b) the PED does not allow eventualities to have differing properties in different worlds. If an eventuality  $e$  exists in  $w$ , and  $e$  is an ability-to- $P$ , then  $e$  is  $P$  in some accessible world, and is therefore  $P$  in the evaluation world as well; (ii) IMP does not license AEs, because by its modal (generic) semantics, it introduces events in accessible worlds, and since events can exist in accessible worlds without existing in the evaluation world, nothing follows about whether the eventuality of ability has a local counterpart. As a result, no AE follows.

Like Bhatt, then, Hacquard relies on the modality of IMP in her answer to  $Q_{\text{IMP}}$ . As I said earlier, I will use the same empirical finding from PA to argue against her account as I will against Bhatt. Following that, I will show a closer connection between viewpoint aspect and AE-licensing. This connection is of central importance to Piñón (2009, 2011) and Homer (2010, 2011), two accounts that appeal to viewpoint aspect, rather than modality, in their answers to  $Q_{\text{IMP}}$ . I turn to these next.

### 3.3 AEs as abductive inferences (Piñón 2009, 2011)

Piñón (2009, 2011) argues that AEs are pragmatic in nature, and arise epiphenom- inally as explanations of an unusual premise: that ability holds, but does so only momentarily. The inference of momentariness arises in the case of PFV because the PFV stands in competition with IMP. Thus when it is said that, e.g., Iti was “PFV- able to fly the plane”, the truth conditions associated with the PFV are taken to hold (16a), and by default the truth conditions of the IMP-alternative (16b) are taken *not* to hold, or not to be relevant. To Piñón, these two inferences imply that the relevant ability held at the time of evaluation  $t$ , but did not extend beyond it (17). Note here that the truth conditions of IMP are not modal; the use intended in (16b) is the progressive-like use, where the event predicate is said to be instantiated by an ongoing eventuality.

- (16) a.  $\llbracket \text{PFV able-to VP} \rrbracket^{w,t} = 1$  iff  $\exists e(\tau(e) \sqsubseteq t \ \& \ \llbracket \text{able-to-VP} \rrbracket(e) = 1)$   
 b.  $\llbracket \text{IMP able-to VP} \rrbracket^{w,t} = 1$  iff  $\exists e(t \sqsubseteq \tau(e) \ \& \ \llbracket \text{able-to-VP} \rrbracket(e) = 1)$



$$(17) \quad \exists e(\tau(e) \sqsubseteq t \ \& \ \llbracket \text{able-to-VP} \rrbracket(e)=1) \ \& \ \neg \exists e(t \sqsubseteq \tau(e) \ \& \ \llbracket \text{able-to-VP} \rrbracket(e)=1)$$

To Piñón, (17) says something unusual: general knowledge tells us that ability does not come and go so abruptly. So, something must explain the speaker’s choice to utter the PFV-marked ability expression instead of its IMP-marked alternative. Piñón sees the AE to be such an explanation: ability generally follows from realization (18a), but by abductive reasoning one can also infer realization from ability — from (18a,b) to (18c):

$$(18) \quad \begin{array}{ll} \text{a. } \phi \rightarrow \textit{ability to } \phi, & \text{(General assumption)} \\ \text{b. } \textit{ability to } \phi, & \text{(premise)} \\ \hline \text{c. } \therefore \phi & \text{(by abductive reasoning)} \end{array}$$

I will argue below that Piñón’s proposal overgenerates. The status of AEs as results of extra-semantic reasoning, and the assumption that they explain an abnormal premise, leads us to expect AEs in cases where an *imperfective*-marked ability expression is accompanied by a modifier like *precisely at noon*, or *only at that precise moment*. Examples of this look like (19):

$$(19) \quad \text{Only at that precise moment was John able to take the train.}$$

Here, just like in the case of PFV-marking, something has to explain why ability is confined to a momentary window, and I do not see how the explanation in this case can fail to lead to the AE. Yet no AE follows in such examples. Of course, the English sentence in (19) does not show IMP-marking, but in Section 5 I will repeat this test in PA, and repeat my conclusion that the source of AEs can’t be the abductive reasoning that Piñón has in mind.

### 3.4 AEs as aspect coercion (Homer 2010, 2011)

Homer’s aspect-shift account of AEs is in a sense like Piñón’s, because it derives AEs as a repair of what would otherwise be a mismatch. To Homer, however, the mismatch is between a selectional restriction of PFV, which by default requires bounded inputs, and the unbounded semantics of statives, which crucially include ability modals.

Let me clarify my terminology. I take boundedness to be a property of predicates of eventualities. When I refer to an expression as bounded, I mean that the predicate it denotes is bounded. A predicate  $P$  is bounded iff whenever it holds of an eventuality  $e$ , it does not hold of any proper parts of  $e$ . Following Krifka 1989 I see boundedness to be a plausible formal representation of telicity. Telicity is also a property of predicates of eventualities, but it intuitively holds of those eventualities whose meaning refers to an endpoint. In the rest of the paper I will use the two terms interchangeably, likewise for their antonyms ‘unbounded’ and ‘atelic’.

In motivating his view, Homer follows Mari and Martin (2007) and Bary (2009), and observes that combining statives with the perfective generally produces *telic* readings of the stative predicates. The readings come about because of a process of shift, which in some cases creates an “ingressive” reading, and in some other cases produces

a “maximal” or “complexive” reading. In short, the ingressive reinterpretation holds of an event iff it marks the beginning of the relevant state; the maximal one holds of eventualities that contain the maximal extent of the relevant state. An example of the ingressive reading in French is shown in (20). The reading is made especially salient with the use of the modifier **soudain** “*suddenly*”, as in (20).

- (20) J a soudain été en colère ce matin. Il n’a pas cessé de l’être  
 J suddenly be.PFV angry this morning. He has not stopped of it being  
 depuis  
 since  
 ‘Suddenly, J became angry this morning. He has been angry nonstop ever since.’

The maximal reading of statives in French is helped with the use of the modifier **à plusieurs reprises** (“*on several occasions*”):

- (21) Aujourd’hui J a été assis à plusieurs reprises  
 Today J has been sitting on several occasions

The connection between these shifts and AE-licensing lies in Homer’s claim that, despite the robustness of AEs in French, the inferences become optional in just those environments where other stative-to-(telic-)eventive shifts are encouraged. When the PFV-form of **pouvoir** is accompanied by the modifier **soudain**, the ingressive reading results and AEs are no longer obligatory (22), and when accompanied by **à plusieurs reprises**, the complexive reading becomes more salient, and AEs are also cancelled (23):

- (22) J a soudain pu soulever un frigo, ✓mais ne l’a pas fait  
 J suddenly able.PFV lift a fridge, but NEG it’has NEG done  
 ‘J suddenly acquired the ability to lift a fridge, but didn’t.’
- (23) ‘A plusieurs reprises J a pu soulever un frigo, ✓mais ne l’a pas  
 on several occasions J able.PFV lift a fridge, but NEG it’has NEG  
 fait  
 done  
 ‘On several occasions J had the ability to lift a fridge, but didn’t.’

So, Homer’s argument goes, if AE readings of PFV-**pouvoir** are replaced by other shifted readings, like the ingressive and the maximal, then AEs may themselves result from a different, but similar, aspect-shift process. Homer calls the AE-licensing shift the “actualistic” shift, and implements it by introducing an operator ACT, which shifts modals by conjoining their non-actual assertion with the assertion of the VP they embed.

The technical details of Homer’s account, though important, need not concern us. More relevant for my purposes are, first, a possible issue with the empirical basis of the account, and second, support that (I believe) is nevertheless provided by PA for Homer’s general idea of tying AE licensing to aspect shift. I expand on the first of these here, and leave the discussion of PA to the upcoming sections.

An anonymous NLLT reviewer disagrees with Homer’s claim about (22-23), finding the examples to license AEs after all, and therefore to be odd. Other speakers that I have asked corroborate this as well, though others agree with Homer.<sup>9</sup> Since it is not my purpose to say anything new about French, I can only suggest the obvious conclusion that there is cross-speaker variation on one, or maybe both, of the following: (i) that **soudain/à plusieurs reprises** encourage the so-called ingressive/complexive shifts in the case of **pouvoir**; (ii) that the ingressive/complexive shifts replace the actualistic shift. Either way, it follows that there is a group of speakers for whom **pouvoir** licenses AEs, but whose linguistic behavior does not show evidence of a connection to aspect-shifting. This does not mean that the connection is not there of course, since it is entirely possible that speakers associate certain shifting operations lexically, that is, that to them the only way of turning **pouvoir** into a telic predicate is to apply ACT.

Speakers of PA seem to behave in just this way in fact, but in their case there is other evidence for a link between AE-licensing and aspect-shifting. In PA there are contexts *other than the perfective* that give rise to telic reinterpretations with stative roots, and in these same contexts, the ability modal licenses AEs. This, as I will show later, provides support for the aspect-based account of AE-licensing.

### 3.5 Summary

Before I move on to the PA data, let me summarize the crucial parts of the four accounts reviewed above. I will once again refer to  $Q_{\text{PFV}}$  and  $Q_{\text{IMP}}$ , respectively the questions why PFV-marking licenses AEs, and why IMP-marking does not.

To Bhatt (1999, 2006), the answer to  $Q_{\text{PFV}}$  is that verbs of ability are implicative; the answer to  $Q_{\text{IMP}}$  is that IMP-marking introduces a modal layer that situates the ability (and its realization) away from the evaluation world. To Hacquard (2006, 2009), verbs of ability are modal, not implicative. Her answer to  $Q_{\text{PFV}}$  is that actual events, including crucially events that have modal descriptions, have the same properties in the actual world as the ones they have in accessible worlds (the PED). Her answer to  $Q_{\text{IMP}}$  is the same as Bhatt’s: IMP introduces a modal layer that introduces ability eventualities away from the evaluation world, so nothing follows from the PED about whether they are actually realized. The two accounts therefore tie AE-licensing to absence of external modality.

By contrast, Piñón (2009, 2011), who shares with Hacquard the view that ability is modal, argues that AEs come from extra-linguistic reasoning. The reasoning begins with the unlikely premise that ability held momentarily, which in turn comes from the use of PFV-marked ability verb instead of its IMP-marked alternative. From this premise, subsequent abductive reasoning leads to the conclusion that the ability was in fact realized. This is the answer to  $Q_{\text{PFV}}$ . Piñón’s answer to  $Q_{\text{IMP}}$  is simply that nothing is odd about an unbounded extent of ability, because ability is unbounded by its nature, and the semantics of IMP-marking is also unbounded. Homer’s (2010; 2011) account of AEs is like Piñón’s in some of these respects: ability verbs are modal,

---

<sup>9</sup>Hacquard (2014) and Mari and Martin (2007) also share Homer’s judgement.

and they are stative (unbounded). When they appear under IMP, their modality is not accompanied by any unexpected inferences. Under PFV-marking, however, ability verbs (like other stative verbs) are reinterpreted as telic (bounded) predicates, and in their case the reinterpretation produces the AE. Piñón’s and Homer’s accounts therefore tie AE-licensing to the boundedness of PFV-marking, not to absence of modality.

## 4 Palestinian Arabic

There are two main empirical generalizations that I will extract from the PA data below. The first is that IMP is not the only aspect-marker that blocks AEs, and that the other blocker, which I will call PRT, does not have a modality that can be empirically detected, and that (therefore) can be used to explain the absence of AEs. The data supporting this claim will be shown in Section 4.1. Later I will use the finding to argue against Bhatt’s and Hacquard’s accounts of AE-licensing. The second empirical generalization that I will claim is that AEs arise in PA in a number of environments, beyond PFV-marking. These environments, including PFV, are alike in producing *telic* readings even when they host stative roots. This generalization is the subject of Section 4.2, and I will take it to lend support to the view that ties AEs to aspect-shifting.

### 4.1 The PA perfective (PFV), imperfective (IMP), and participial (PRT)

Aspect marking in PA uses a mixture of affixation and non-linear morphology. The past perfective verb template, for example, is /XvYvZ/ for a tri-consonantal root XYZ, (24a), so from the root /ktb/, which has to do with writing, we get /katab/ for the past perfective form “*wrote*”. The imperfective and participial forms, which are the focus of this section, are shown in (24b,c):

- (24) a. The past perfective (PFV): /XvYvZ/  
 b. The imperfective (IMP): /b<sub>l</sub>XYvZ/<sup>10</sup>  
 c. The participial (PRT): /XaaYiZ/<sup>11</sup>

We will see more PA tense/aspect categories in Section 4.2, when we speculate on the possibility of relating AEs to aspect shift. Before proceeding I want to note that, while PFV expresses PAST on its own, IMP and PRT do not. Thus, in order to compare these three morphological markers with respect to AE-licensing, we must add overt PAST-marking (/kaan/ in PA) to IMP and PRT. I will do this in what follows.

---

<sup>10</sup>Following questions from an anonymous reviewer, I leave it open whether it is the /b-/ prefix that contributes the imperfective meaning in (24), or the templatic arrangement of the root consonants. Since my concern is with the overall meaning of the form, and how it differs from the meanings of other forms, the contributions of its morphological parts is not something that needs to be fully understood here.

<sup>11</sup>PRT also provides nominal agentive forms from verbal roots, as in the well-known case of /kaatib/ “*writer*” from the root /ktb/. This reading plays no role in the data we consider.

First, in (25), we see examples of the PFV template, here hosting the roots /ʔkl/ “eat”, /ħml/ “carry”, and the ability root /ʔdr/.

- (25) a. Ø ʔakal  
*pro* eat.PAST.PFV  
 ‘He ate.’
- b. Ø ħamal el-kiis  
*pro* carried.PFV the-bag  
 ‘He lifted the bag.’
- c. Ø ʔidr jindjaħ  
*pro* was.able.PFV to.pass  
 ‘He was able to pass (e.g. a test).’  
 ⇒ He passed

In (26), which extend (8) from earlier, we see the IMP forms of the same roots that appear in (25). The generic interpretation is translated in the first two cases, and as indicated, it is compatible with a kind-referring definite subject. The third example (26c) shows the IMP form of the ability root, which (as observed in (4b)) does not license an AE. Thus the difference between PFV and IMP, in PA, matches the difference that Bhatt/Hacquard claimed to support their views, specifically in connection to the role of IMP in blocking AEs.

- (26) a. el asad (kaan) (b)jaakol djamuus bil usbuuʔ  
 the lion (PAST) eat.IMP steer per week  
 ‘The lion eats/ate one steer a week.’  
 (use of PAST is appropriate for e.g. extinct species)
- b. haada l χunfus (kaan) (b)ihmil ħaʔaraat atʔal min-no  
 this the beetle (PAST) carry.IMP insects heavier than-it  
 ‘This beetle carries/carried insects heavier than it.’
- c. Ø kaan biʔdar jindjaħ, bas rasab  
*pro* PAST able.IMP 3sg.MASC-pass, but fail.PAST.PFV  
 ‘He was able to pass, but he failed.’

(27) shows examples of the participial form PRT. The data here are somewhat heterogeneous, at least going by the English translations: PRT sometimes has perfect-like readings (27a), and other times appears to say that a state of the relevant kind was ongoing (or *is* ongoing in the absence of the past marker /kaan/) (27b-c).<sup>12</sup> Nev-

<sup>12</sup>In fact these data are likely not so heterogeneous, and can all be analyzed as instances of a perfect-like construction. I will talk more about this possibility later. Let me note that, while it may appear odd at first to translate an allegedly perfect construction with a progressive, this would not be odd if the relevant form (the root appearing in PRT) were assumed to be stative. There is an alternative view, due to Boneh (2010), that associates these roots with telic meanings, e.g. “lift” instead of “be carrying” and “fall asleep” instead of “sleep”. Boneh uses result-states to account for the readings in (27b-c), but I do not think the account can explain why these sentences can be used to felicitously answer the question *What was he/she doing?* unlike other eventives that permit post-state readings in the PRT e.g. “go home”. See also Hallman 2017 for discussion of Boneh’s analysis.

ertheless the data are uniform in showing that PRT does not contribute any kind of modality (more on this shortly).

- (27) a. Ø kaan meekil  
*pro* PAST eat.PRT  
 ‘He had eaten.’  
 b. Ø kaan ĥaamil el kiis  
*pro* PAST carry.PRT the bag  
 ‘He was carrying the bag.’  
 c. Ø kaan naajim  
*pro* PAST sleep.PRT  
 ‘He was sleeping.’

The absence of *generic* modality from PRT becomes clearer when the form is combined with a kind-referring definite subject: these combinations are unacceptable.

- (28) a. \*el asad (kaan) naajim 15 saaʔa bil yom  
 the lion (PAST) sleep.PRT 15 hours per day  
 Intended: ‘The lion used to sleep 15 hours a day.’  
 (Adverb expressing habit/disposition is not compatible with PRT form, which has no generic reading)  
 b. haada l χunfus (kaan) ĥaamil ĥafaraat atʔal min-no  
 this the beetle (PAST) carry.PRT insects heavier than-it  
 ‘This beetle (✓ was carrying / #used to carry) insects heavier than it.’  
 (Sentence acceptable if said of a specific beetle, not a species, and of a specific carrying event)

(29-30) show the past PRT form of the PA ability root. Crucially, AEs are not licensed in these cases:

- (29) Ø kaan ʔaadir yaaxod el baas, ✓bas axad el qiṭaar  
*pro* PAST able.PRT take the bus, but took.PFV the train  
 ‘He was able to take the bus, but he took the train.’  
 (30) Ø kaan ʔaadir jindjah, bas rasab  
*pro* PAST able.PRT pass, but failed  
 ‘He was able to pass (e.g. the test), but he failed.’

Thus PRT-marking, while evidently non-modal as (27-28) suggest, does not license AEs when it hosts the ability root. This is the datum that I will argue to be problematic for Bhatt/Hacquard. Readers who are skeptical of my conclusion that PRT is not modal are asked to wait until Section 5.

## 4.2 Stative roots in PA, and derived telic (eventive) readings

I assume that the PA stative roots are those that are unacceptable or unnatural in the progressive form.<sup>13</sup> The roots that are stative in this sense include the ability

<sup>13</sup>In English, acceptability in the simple present is often used to diagnose stativity, but because there is no identifiable counterpart to the simple present in PA, I chose the progressive diagnostic

root /ʔdr/. What I will show in this section is that these roots tend to take eventive reinterpretations when they are PFV-marked, and in a few other morphosyntactic contexts as well. The ability root /ʔdr/ is also reinterpreted in these contexts, but in its case the reading brings the AE with it, thus demonstrating the link between aspect-shifting and AE-licensing.

Our representative PA stative roots are /ʔrf/ “*know/knowledge*”, /ħbb/ “*love*”, /ʔjb/ “*impress*”. These, as shown in (31), are quite odd in the progressive form, which consists of the particle /ʔam/ and the imperfective. (Despite their oddness, the forms do seem to marginally permit coerced meanings, which I will return to.)

- (31) ʔ\*Ø ʔam (b)tʔraf-o/bʔħbb-o/(b)tʔɔdj-b-o  
*pro* knowing-him/loving-him/impressing-him  
 Intended: ‘She knows/loves/impresses him.’

Note that the roots are perfectly acceptable in the imperfective (32), and in the participial forms discussed earlier (33).

- (32) Ø btʔraf-o/bʔħbb-o/btʔɔdj-b-o  
*pro* knows-him/loves-him/impresses-him.IMP
- (33) Ø ʔaarif-to/ħaabib-to/ʔaajib-to  
*pro* knows-him/loves-him/impresses-him.PRT

In both of these cases the roots seem to have roughly the same meanings as their counterparts in the English simple present, though in the case of PRT the forms appear to add an evidential inference that the subject is showing signs of being in the relevant state (of knowledge or recognition, love, etc.).<sup>14</sup>

Eventive roots, by contrast, are perfectly acceptable in the progressive. As examples I include /rkd/ “*run*”, /ʔzf/ “*play* (a musical instrument)”, and /rsm/ “*draw*”.

- (34) Ø ʔam (b)ʔrkʊd/(b)ʔzf/(b)ʔrsm  
*pro* run/play/draw.PROG  
 ‘✓He is running/playing/drawing.’

These roots, as expected, take the habitual reading in the imperfective (35). Unlike the stative roots, they are odd in PRT (36), though some speakers report that they can marginally get an evidential reading in these cases too.

- (35) Ø (b)ʔrkʊd/(b)ʔzf/(b)ʔrsm  
*pro* run/play/draw.IMP  
 ‘✓He runs/plays/draws.’
- (36) ʔ\*Ø raakɔd/ʔaazɔf/raasɔm  
*pro* run/play/draw.PRT

---

instead.

<sup>14</sup>The precise characterization and source of this inference is unclear, but the finding does not affect the point made here, that the roots are stative, nor does it affect the point made earlier about the absence of AEs in the (past) participial form of the ability root. I will say more about this in Section 5.

With these diagnostics we find the ability root to pattern with the first group: it is odd in the progressive (37), and acceptable (as we have seen already) in IMP and in PRT (38-39). In (39), as in the case of the stative roots presented above, the PRT form suggests an evidential inference.<sup>15</sup>

- (37) ?\*Ø (kaan) ʕam biʔdar yiftri el beet  
*pro* (PAST) able.PROG buy the house  
 (intended) ‘He (was) able to buy the house.’
- (38) Ø (kaan) biʔdar yiftri el beet  
*pro* (PAST) able.IMP buy the house  
 ‘He (was) able to buy the house.’
- (39) Ø (kaan) ʔaadır yiftri el beet  
*pro* (PAST) able.PRT buy the house  
 ‘He (was) able to buy the house.’

Let me pause for a short summary: I have claimed that the PA ability root is stative, because it fits into the class of roots that are odd in the progressive but acceptable in the imperfective and the participial. Stative predicates, I assume, describe eventualities that are unbounded. Eventives, by contrast, are acceptable in the progressive, and they take habitual/generic interpretations in the imperfective, and are odd (though marginally permit an evidential meaning) in the participial.

Now we turn to the central datapoints of this section. First, (40-43) show *four* PA morphosyntactic contexts where stative roots take telic (eventive) readings. These are the perfective, the progressive, the future (FUT), and the past habitual (HAB). (As I noted earlier, the progressive form is not perfectly acceptable.) In these cases, the eventive interpretation is like what Bary (2009) calls “ingressive”: the forms describe events that begin the relevant state.

- (40) Perfective
- a. ... ʕirif il jawaab  
 ... knew.PFV the answer  
 ‘He came to know (figured out) the answer.’
- b. ... ʕabb il bmit  
 ... loved.PFV the girl  
 ‘He (came to love) fell in love with the girl.’
- c. ... ʕajab-o il ʔamees  
 ... impressed.PFV-him the shirt  
 ‘He came to like the shirt.’

- (41) Progressive (Repeated and expanded from (31))

---

<sup>15</sup>Oddly, the inference in the present suggests quite strongly that the relevant action is being attempted, but in the past it does not. Thus in the company of the past, the IMP and the PRT forms of the ability root seem to be similar in saying that the relevant ability was (unboundedly) ongoing. I suspect that the difference between the present and the past in this case is related to the difference between the English present perfect and the past perfect (see Portner 2011 for a review). A thorough investigation of this connection is beyond the scope of this paper, however.



- a. ?\*Ø ʕam (b)tɪʕraf-o  
*pro* knowing-him  
 ‘?She is starting to know him/recognize him.’ / ‘\*She knows him.’
- b. ?\*Ø ʕam biħhibb-o  
*pro* loving-him  
 ‘?She is starting to love him.’ / ‘\*She loves him.’
- c. ?\*Ø ʕam (b)tɪʕɪdʒb-o  
*pro* impressing-him  
 ‘?She is starting to impress him.’ / ‘\*She impresses him.’

(42) Future

- a. ... raħ jiʕraf il jawaab  
 ... FUT knew.HAB the answer  
 ‘He will come to know (figure out) the answer.’
- b. ... raħ jħibb il bmit  
 ... FUT love.HAB the girl  
 ‘He will (come to love) fall in love with the girl.’
- c. ... raħ jiʕɪjb-o il ʕameeʕ  
 ... FUT impressed.HAB-him the shirt  
 ‘He will come to like the shirt.’

(43) Habitual

lamma kunt aʕuufo...  
 when PAST.1sg see.HAB.1sg-him...  
 ‘When I used to see him...’

(42a) ... kaan jiʕraf il jawaab  
 ... PAST knew.HAB the answer  
 ‘He used to/would come to know (figure out) the answer.’

(42b) ... kaan jħibb il bmit  
 ... PAST love.HAB the girl  
 ‘He used to/would (come to love) fall in love with the girl.’

(42c) ... kaan jiʕɪjb-o il ʕameeʕ  
 ... PAST impressed.HAB-him the shirt  
 ‘He used to/would come to like the shirt.’

Second, and crucially, when the ability root /ʕdr/ appears in these four morphosyntactic contexts, the reading that results seems to robustly license AEs. This was already pointed out for PFV in Section 2 (in PA, repeated below, and other languages), but to my knowledge AEs have not been reported in contexts like PROG (e.g. (45)), FUT (e.g. (47)), and HAB (e.g. (46)). Note also that the progressive form in this case is marginal, like it is for the other statives discussed earlier.

(44) AE-licensing under the perfective

Ø ʕidir jrawwiħ, (#bas maa rawwaħ) (=4)  
*pro* able.PAST.PFV 3sg.MASC-go.home, but NEG go.home.PAST.PFV  
 ‘He was able to go home, but he didn’t.’

(45) *AE-licensing under the progressive*<sup>16,17</sup>

bil awwal ma kaan faahim el as?ileh. halla? f'am bi?dar yxalles  
 at first NEG PAST understand.NOM the questions. now able.PROG finish  
 el waajeb. #bas maa raħ yxalles  
 the homework. but NEG FUT finish  
 ‘At first he didn’t understand the questions. Now he is about to finish the  
 homework, but he won’t finish it.’

(46) *AE-licensing under the future*

lamma yon?ol, raħ yi?dar yzuur el baħr el majjit. #bas maa raħ jruuh  
 when move.MASC, able.FUT visit the sea the dead. d but NEG go.FUT

‘When he moves, he’ll be able to visit the Dead Sea, but he won’t go.’

(47) *AE-licensing under the habitual*

kaan (kul ween u ween) yi?dar yzuur el-batra. #bas maa raaħ  
 PAST (occasionally) able.HAB visit Petra. but NEG go.PFV  
 ‘He was (habitually) able to visit Petra, but he didn’t.’

<sup>16</sup>A reviewer wonders if the AE in (45) might come from the contrast between the two clauses in the example, i.e. from “he did not understand the questions” to “able to finish the homework”. Indeed, as the reviewer emphasizes, in English the use of **able** in a similar context does suggest completion:

(i) At first he didn’t understand the questions. Now he is able to finish the homework.

Nevertheless there is a clear difference between the inference of completion in the PA (45) and in the English (i). In English it is consistent to cancel the inference in something like (ii), but in the PA PROG form an analogous continuation contradicts the sentence:

(ii) At first he didn’t understand the questions. Now he is able to finish the homework, though knowing him, he probably won’t put in the effort.

(iii) bil awwal ma kaan faahim el as?ileh. halla? f'am yi?dar yxalles el waajeb,  
 at first NEG PAST understand.PRT the questions. now able.PROG finish the homework.  
 #bas b kasal-o fal ?aħlab maa raħ jħaawil  
 but in laziness-his at most.likely NEG FUT try  
 ‘At first he didn’t understand the questions. Now he is about to finish the HW, but with his  
 laziness he probably won’t try.’

<sup>17</sup>As one of the reviewers points out, French shows similar effects to the PA progressive in cases like (iv), which use *en train de* (“in the process of”) as a substitute to the grammatical progressive.

(iv) Je suis même en train de pouvoir réduire mes anti-dépresseurs, #mais je ne le fais pas  
 I am even in process of can reduce my anti-depressants, but I NE it do NEG.  
 ‘I am even in the process of being able to reduce my anti-depressants, but I don’t do it.’

Thus the effect is not unique to PA.

### 4.3 Short summary of PA findings

The overall findings from PA are therefore these: (i) the PRT form of the ability root does not license AEs, but does not appear to have a modal inference when it hosts other roots; (ii) AEs are licensed not only in PFV but also in PROG, FUT, and HAB. All of these four contexts produce telic eventive interpretations when they host other stative roots. In the next section I discuss the theoretical implications of these findings.

## 5 Theoretical significance

The main conclusion that I want to claim from the PA data is that AE-licensing is connected to boundedness, not to absence of modality. I begin with the latter point (Section 5.1), and afterwards discuss the connection to aspect-shifting (Section 5.2).

### 5.1 Consequences to Bhatt/Hacquard

If the PA ability root /ʔdr/ were implicative, that is, if the source of its AE under PFV-marking were its literal meaning, then the only way for PRT to obviate the AE is for it to add a layer of modal displacement of its own, like IMP arguably does. But given the findings from Section 4.1, there is no evidence from other roots that such a modality takes part in the meaning of PRT, or that it is required or licensed in its presence. Something else must be common to IMP and PRT that blocks AEs, and evidence suggests that it is not related to modality.

Similar remarks can be made about Hacquard's PED-based account of AEs. To her, the inferences follow from (i) the introduction of eventualities of possibility in the evaluation world, and (ii) the assumption, namely the PED, that eventualities must have the same properties in the worlds where they exist as those that they have in accessible worlds. If PRT is not independently found to introduce a modality of its own, then from PRT-marked ability, and given the PED, we expect an inference that the ability is *actually* realized, or at the very least that it is in the process of being realized. The reasons are the same as those in the case of the perfective: without a modality in its semantics, PRT requires the existence of some actual eventuality of ability (to  $P$ , for some event property  $P$ ), which then has to satisfy  $P$  in some accessible worlds. From the PED, the actual eventuality would therefore have to be an eventuality of  $P$  as well.<sup>18</sup>

Of course, these challenges to Bhatt/Hacquard hinge crucially on the conclusion that PRT is not modal. But is this conclusion convincing? In bringing up this question, I have in mind examples like (27b,c) from Section 4.1 (repeated below), where PRT is translated into the English progressive:

---

<sup>18</sup>Perhaps there is a way to make the PED specific to the PFV, or to aspectual operators that require complete events to fall in the time window that is specified by tense. Such a revision of Hacquard's proposal would be very different from the original, however, since it would no longer rely just on the modality of IMP to block AEs, but also on its viewpoint semantics.

- (27) b. Ø kaan haamil el kiis  
*pro* PAST carry.PRT the bag  
 ‘He was carrying the bag.’  
 c. Ø kaan naajim  
*pro* PAST sleep.PRT  
 ‘He was sleeping.’

There is a prominent line of research, beginning with Dowty 1977, that assigns a modal meaning to the English progressive. Such accounts are intended to solve the so-called “imperfective paradox”, where a progressive accomplishment predicate is felt, intuitively, not to entail the accomplishment itself. (48) is an example:

- (48) The chicken was crossing the road.  
 $\not\Rightarrow$  The chicken crossed the road

The challenge appears also in sentences that explicitly, and consistently, express interruption, like (49):

- (49) The chicken was crossing the road when it died of a stroke.

On its modal analyses, the progressive in e.g. **was crossing the road** does not say that an *actual* event of crossing the road was ongoing. Rather, it says that some event was ongoing which, in worlds that are accessible by some relation, develops into an event of crossing the road. Accounts of this kind correctly keep sentences like (48) from leading to the faulty conclusion, because on them, the truth conditions of (48) do not require the existence of an actual crossing event.

Given such a semantics of the progressive, and given the similarity between the PA PRT forms in (27) and their progressive translations, one might ask whether PRT in PA is modal after all, and whether the claimed challenge (from PA) to Bhatt/Hacquard might therefore disappear.<sup>19</sup>

While this may seem like a serious worry on first glance, I do not think it holds up to close scrutiny. First, it is well-known that, whatever the right details of a modal account of the progressive turn out to be, it has to deliver *actual* truth conditions when it comes to activity predicates like **run** and **sleep**. Activity predicates have what Portner (2011) calls “the process property”: they entail that the relevant activity is *ongoing in the evaluation world* at the evaluation time.<sup>20</sup> So, if we take the English translations in (27) as our guide to the meaning of PRT, the conclusion has to be that it situates the given activity in the *actual* world. Second, and relatedly, even when the English progressive marks an accomplishment predicate, like in (48-49), there is an inference that some *actual* activity is ongoing. Here too, then, the semantics of the progressive must say something about the actual world, e.g. that some event in it, perhaps a part or stage of street-crossing, was going on. So, if PRT were like the English progressive in having a modality, that modality would not be strong

<sup>19</sup>I thank an anonymous reviewer for bringing up this point.

<sup>20</sup>See e.g. Dowty’s (1979) and Landman’s (1992) “Activity Postulates” for attempts to derive actual truth conditions for activities.

enough to block the AEs entirely when it hosts the ability root. PRT would also have to license some inference about an actual, ongoing eventuality, one of ability in the case of the root /ʔdr/. From this, and assuming either Bhatt or Hacquard, it would have to follow that the ability is being realized, either because /ʔdr/ is implicative (Bhatt), or because the actual ability eventuality inherits the properties that it has in accessible worlds (PED). But in fact, no inference of realization is licensed when /ʔdr/ is PRT-marked, as we saw from (29-30), repeated below.

- (29) Ø kaan ʔaadir yaaxod el baas, ✓bas axad el qiṭaar  
*pro* PAST able.PRT take the bus, but took.PFV the train  
 ‘He was able to take the bus, but he took the train.’
- (30) Ø kaan ʔaadir jindjaḥ, but rasab  
*pro* PAST able.PRT pass, but failed  
 ‘He was able to pass (e.g. the test), but he failed.’

A similar concern may come from the observation, made in footnote 14, that PRT seems to have evidential readings in certain cases. Evidentiality is a modality too, so once again, there may be reasons to be skeptical of the argument against Bhatt / Hacquard. But again, I do not think that the worry is warranted. First, evidential readings of PRT do not arise by default, and they are particularly unlikely in the case of stative roots, which include the ability root (see examples in Section 4.1). Second, even if an evidential reading of PRT were available in the case of the ability root, the resulting meaning, assuming Bhatt’s/Hacquard’s views, should entail evidence of *realization*: to Bhatt, this is because ability is assertorically equivalent to realization, so evidence of ability should be equivalent to evidence of realization; to Hacquard, the same holds because presumably the PED applies to evidentially-accessible worlds, so whatever appears in them as an event of ability-to-*P* should also be a *P*-event. It follows that, even if PRT-marking on ability (to *P*) introduced an evidential modal layer, the resulting meaning should entail evidence of realization on both Bhatt’s and Hacquard’s accounts. But evidence of realization should not tolerate *denial* of realization, yet this denial is perfectly consistent with PRT-marked expressions of ability, as (29-30) show.

In sum, there appear to be no convincing candidates of a modality that is expressed in the meaning of PRT and that could reasonably be expected to block AEs when PRT hosts the ability root. The absence of AEs in these cases is unexplained on Bhatt’s view, and on Hacquard’s.

Before I move on, I want to discuss one last possibility about a modality that, in principle, might take part in the semantics of PRT, but that is in fact absent given the detected meanings of the relevant PA forms. So far I have talked about PRT without suggesting a lexical entry for it, but as I indicated in footnote 12, I believe that it is like the perfect in attributing the event/state property that it hosts to an extended time span. In the literature on the perfect, theories that use these time spans are collectively called “extended now” theories.<sup>21</sup> One of their advantages is

<sup>21</sup>The “now” part of the label “extended now” refers specifically to the *present* perfect; in the case of the past perfect the extension applies to a prior interval.



- c. Ø kaan naajim  
*pro* PAST sleep.PRT  
 ‘He was sleeping.’

In light of this, let us apply Pancheva’s (2003) semantics of the perfect to the PA PRT:

$$(54) \quad \llbracket \mathbf{PRT} \rrbracket^t = [\lambda p_{\langle i,t \rangle} . \exists t' (\text{PTS}(t', t) \& p(t') = 1)],$$

where  $\text{PTS}(t', t)$  iff  $\text{RB}(t') = \text{RB}(t)$ , and  $t \sqsubset t'$ .

Now we come to a crucial detail. Iatridou et al. (2001) argued that the perfect embeds *aspect phrases*, and that these aspect phrases are themselves the source of the (un)boundedness that, in turn, gives the perfect its E- and U-readings. Bulgarian shows evidence of embedded aspect in its morphology: in (55a) the perfect participle is based on the perfective stem and forces the E-reading; in (55b) it is based on the imperfective, and takes the U-reading:<sup>24</sup>

- (55) a. Marija (\*vinagi) e obiknala Ivan (\*ot 1980 nasam)  
 Maria (\*always) is love-PERF.part Ivan (\*from 1980 towards-now)  
 ‘Maria has fallen in love with Ivan.’
- b. Marija vinagi e običala Ivan  
 Maria always is love-IMP.part Ivan  
 ‘Maria has always loved Ivan.’

So, if the E/U-readings of the PA PRT-form depend on the bounded/unbounded meaning of the root that it hosts, and if in other languages (e.g. in Bulgarian), the perfect — by assumption the analog of PRT — embeds aspect phrases, the possibility emerges that in PA too, PRT underlyingly embeds something that includes aspect in it. If so, it may well be the case that the PRT-form of the ability root is in fact an instance of PRT that embeds the *imperfective*, which may be modal.

Once again, however, there is no independent empirical evidence from PA that supports this possibility; no PRT-form of either eventive or (more crucially) stative roots, seems to displace the truth conditions of its root away from the evaluation world. From a theoretical point of view this may come as a surprise; why should IMP-marking on its own permit modal readings — the generic uses of IMP discussed earlier — but not the putative IMP that appears under PRT on the view entertained here? The question is important, but it is not immediately relevant. It appears to be a fact that the range of readings that PRT allows does not include a modal one. So if we capture the semantics of PRT by likening it to the perfect, and if we allow it to take additional (covert) aspect heads in its scope, we must keep the genericity/modality of IMP from appearing in that scope. Why this should be the case is something that I must leave to future work.<sup>25</sup>

<sup>24</sup>This description is very rough, but it will do for my present purposes. The Bulgarian sentences are Iatridou et al.’s (2003) examples (35) and (36).

<sup>25</sup>It is noteworthy that the ability verb in Bulgarian has both a perfective and an imperfective stem, and both can appear under the perfect. As expected, AEs result in the former case but not

I conclude from these findings, so far, (a) that the PA ability root is *lexically* modal — the lack of the AE in PRT would otherwise be unexplained — and (b) that the AE-licensing behavior of the root, under PFV-marking, does not result from the absence of other layers of modality under PFV — PRT also lacks a modality, but no AEs arise when the ability root is PRT-marked.

Now I turn to the remaining PA data, and to what they tell us about the role of (un-)boundedness in AE-licensing.

## 5.2 Consequences to Piñón/Homer, and proposal

The second of the two empirical conclusions of Section 4.2 was that AEs in PA are licensed in PFV, PROG, FUT, and HAB, and that in all four of these environments, stative roots take telic interpretations.

This generalization is predicted by Piñón’s account and Homer’s: from the finding that PFV, PROG, FUT, and HAB force bounded readings of stative roots, it appears that the four contexts are, by their semantics, compatible only with telic predicates. To Piñón, this is sufficient to trigger the reasoning that leads to the AE in the case of the ability root: the proposition that the ability is shortlived should arise uniformly in all four contexts, and the unusualness of the proposition, and the subsequent AE-based explanation of it, should also arise in all four of them.

My objection to Piñón’s account, however, is that it does not explain why no AE follows when ability is expressed in the imperfective but simultaneously said to hold of only an instant. The PA (56) is an example of this, modeled after (19) from Section 3.3.

- (19) Only at that precise moment was John able to take the train.

in the latter (Roumi Pancheva p.c.). In (1) I show the plain PFV and IMP forms; in (2) the perfect forms:

- (1) a. Aleks moža                                    da si trägne (#no ne si trägna)  
 Aleks can-PFV.PAST.3SG subj refl leave.3sg    but not refl leave-PFV.PAST.3SG  
 ‘Alex was able to leave, but did not.’
- b. Aleks možeše                                    da si trägne (✓no ne si trägna)  
 Aleks can-IMP.PAST.3SG subj refl leave.3sg    but not refl leave-PFV.PAST.3SG  
 ‘Alex was able to leave, but did not.’
- (2) a. Aleks e mogla                                    da si trägne (#no ne si e  
 Aleks is can-PFV.PERF.fem.SG subj refl leave.3sg    but not refl is  
 trägnala)  
 leave-PFV.PERF.FEM.SG  
 ‘Alex has been able to leave, but has not.’
- b. Aleks e možela                                    da si trägne (✓no ne si e  
 Aleks is can-IMP.PERF.fem.SG subj refl leave.3sg    but not refl is  
 trägnala)  
 leave-PFV.PERF.FEM.SG  
 ‘Alex has been able to leave, but has not.’

It would be interesting to see if the same effect can be found in PA, but unfortunately the PA PRT form does not co-occur with additional aspect morphology.



- (56) bas b-hadiik l-lahza      kaan biʔdar    jaχod l-qitaar.    ✓w    maa ʔaxad-o  
 only at-that    the-moment PAST able.IMP take    the-train. ✓and NEG took-it

‘Only at that moment was he able to take the train, and he didn’t take it.’

If AEs resulted *pragmatically* as intuitive explanations to an unlikely premise, and if in the cases of interest the unlikely premise is that ability was confined to an uncharacteristically short period, then as I said earlier, we should see an AE in (56), but we do not. Note that it should not matter that in (56), the confinement of the ability is communicated with *only* rather than the PFV/IMP competition. In both cases the same proposition follows as an inference, and it is not obvious why abductive reasoning should lead from that proposition to the AE in one case, but not in the other.

To Homer, on the other hand, the shift that brings the AE is not pragmatic. It is triggered by a selectional restriction of the PFV, which requires bounded event-properties, and by combining the PFV with the (unbounded) ability verb. Because Homer’s proposal is specific to such configurations, it does not lead us to expect AEs in cases like (19). However, the proposal does suggest a generalization: any morphosyntactic context where stative roots are assigned bounded interpretations is in principle a context where AEs are expected to arise for ability verbs. PA, as we saw in Section 4.2, shows four such contexts, and in all of them the ability root gives rise to AEs.

We therefore have a new kind of evidence from PA in favor of connecting AE-licensing to aspect-shift. The evidence is different from what Homer claimed for the French **pouvoir**. There, recall, the argument began with what appeared to be a kind of complementarity between AE-licensing and other instances of aspect-shift. In PA, the connection was established by looking at other contexts, beyond the perfective, that favor telic reinterpretations of stative roots, and by finding that in these same cases, the ability root gives rise to AEs.

Many questions still remain of course. Perhaps the most important of these is the difference between the shifted readings of ability and those of other stative roots. We saw earlier, for instance, that the PA stative root for “know”, /ʔrf/, becomes “find out/discover” when it is shifted to an eventive, an interpretation that can be paraphrased as “acquire knowledge”, say. The question is why a similar shifted meaning does not come up when the ability root /ʔdr/ is shifted; nothing is outlandish or strange about the idea of *acquiring* an ability, any more than the idea of acquiring a piece of knowledge. Yet the latter serves as an eventive reinterpretation of “know”, but the former does not in the case of “able”.

I can only speculate on a possible answer to this question. de Swart (1998) has proposed that states can undergo “dynamic” shifts. The interpretations that result in such cases actively involve the agent of the given predicate. In de Swart 2011, she argues that this explains why the stative verbs in (57a-b) can appear in the progressive, but the ones in (57c-d) cannot (Michaelis 2003): dynamic reinterpretations of the former are possible, but not of the latter, and it is only after these shifts apply

that the verbs can appear in the progressive.

- (57) a. I’m feeding him a line, and he is believing every word.  
 b. Bill is being obnoxious.  
 c. \*?Bill is being sick/in the garden.  
 d. \*?Julie is having blue eyes.

In the case of ability verbs, which are underlyingly stative, active involvement of the agent requires some demonstration of the given ability. Such demonstration is naturally done by exercising the ability, hence (perhaps) the actualistic shift that produces the AE. In the case of knowledge, active involvement requires some effort on the agent’s part, which may be the source of the reading translated as “figure out” earlier. Of course, this does not cover all instances of shift that were shown in the PA examples above (recall the cases of “love” and “be impressed by”, for instance, where the shift was ingressive). The theory must therefore allow multiple kinds of state-to-telic-event shift, and at the moment I do not know how to predict the specific kind of shift from the given stative predicate.<sup>26</sup>

My proposal, then, is like Homer’s. AEs result from assigning an (telic) eventive interpretation to the ability root. Such shifts take place in cases where the tense/aspect context that hosts the root is defined for only *bounded* properties of events. In PA, PFV is one of these, as are PROG, HAB, and FUT. Each of these markers denotes a function on eventuality properties, but the functions are defined only for bounded properties:

- (58) For any evaluation coordinate  $w, t$ ,  
 $\text{Dom}(\llbracket \text{PFV}/\text{PROG}/\text{HAB}/\text{FUT} \rrbracket^{w,t}) = \{P : P \text{ is bounded}\}$ <sup>27</sup>

Since stative VPs do not have bounded interpretations, they are semantically incompatible with PFV, PROG, HAB, and FUT.

- (59) For any stative VP  $S$ ,  $\llbracket S \rrbracket^{w,t} \notin \text{Dom}(\llbracket \text{PFV}/\text{PROG}/\text{HAB}/\text{FUT} \rrbracket^{w,t})$ , because  $\llbracket S \rrbracket^{w,t}$  is not bounded.

Shift operations provide bounded *re*interpretations of stative properties, and these are semantically compatible with PFV, PROG, HAB, and FUT.

---

<sup>26</sup>This a well-known challenge in the literature on coercion, and a variety of contextual factors and lexical idiosyncracies seem to be at play (see e.g. Pustejovsky 1995 and de Swart 2011). It must be noted that the idea of associating the ability expression with the actualistic shift is independent of the question why that particular shift is available, and why it is associated with ability in e.g. PA. So, accepting a view like Homer’s (as I do) does not explain why the expression of ability in PA undergoes actualistic shift instead of, say, ingressive shift. The discussion above is an attempt at relating Homer’s ACT to De Swart’s “dynamic” shift, but I must leave the job of working out the details to future work.

<sup>27</sup>As I mentioned in Section 3.4, Krifka (1989) captures boundedness using the mereological property of quantization: A property of events  $P$  is bounded/quantized iff when  $P$  holds of  $e$ , it does not hold of any proper subpart of  $e$ . Here I abstract away from these technical details.

(60)  $\text{SHIFT}_{s-e}$  is a function from (unbounded) stative properties to bounded properties.

Given a stative VP  $\mathbf{S}$ ,  $\text{SHIFT}_{s-e}(\llbracket \mathbf{S} \rrbracket^{w,t}) \in \text{Dom}(\llbracket \text{PFV}/\text{PROG}/\text{HAB}/\text{FUT} \rrbracket^{w,t})$ .

The output of  $\text{SHIFT}_{s-e}$  depends on the stative predicate that it takes as its input. By the proposal sketched above, the output (in PA) in the case of **able to VP** is the result of applying Homer’s ACT to it. On a simplified definition of ACT, this produces a conjunction of the VP and the relevant ability, more specifically, the output is a predicate that holds of an event  $e$  iff it satisfies the description of the VP, and it is accompanied temporally by an ability to perform the action denoted by that VP:<sup>28</sup>

$$(61) \quad \begin{aligned} & \text{SHIFT}_{s-e}(\llbracket \mathbf{able} \mathbf{S} \rrbracket^{w,t}) \\ &= \text{ACT}(\llbracket \mathbf{able} \mathbf{S} \rrbracket^{w,t}) \\ &= [\lambda e_v . \llbracket \mathbf{S} \rrbracket^{w,t}(e) = 1 \ \& \ \exists e'(\tau(e) \subseteq \tau(e') \ \& \ \llbracket \mathbf{able} \mathbf{S} \rrbracket^{w,t}(e') = 1)] \end{aligned}$$

But there is still a question about this outcome: what if the embedded VP is stative? In these cases, intuitions indicate that the VP also undergoes shift. Indeed if this were not the case, the description that appears at the bottom of (61) would not necessarily be telic, since it would conjoin a(n atelic) stative description with another (the VP and the ability). The meaning of (62b) tells us what happens in such cases: the AE brings with it the inference that Iyad *fell/will fall in love with* Lolo.<sup>29</sup> This is the shifted interpretation of the stative VP “love”.

- (62) a. iyad ʔıdır / raħ jiʔdar jımdjaħ  
 Iyad able.PFV / able.FUT pass  
 ‘Iyad was/will be able to pass’  $\implies$  he passed/will pass
- b. iyad ʔıdır / raħ jiʔdar jħıbb lolo  
 Iyad able.PFV / able.FUT love Lolo  
 ‘Iyad was/will be able to love Lolo’  $\implies$  he fell/will fall in love with her

Therefore, the work of ACT is not merely to conjoin the embedded VP with the ability. Rather it seems to conjoin the ability with whatever the shifted interpretation is of that VP. If the VP is telic already, the shift is vacuous; if it is not, the shift produces the interpretation that is specified either lexically, or contextually:

$$(63) \quad \begin{aligned} & \text{SHIFT}_{s-e}(\llbracket \mathbf{able} \mathbf{S} \rrbracket^{w,t}) \\ &= \text{ACT}(\llbracket \mathbf{able} \mathbf{S} \rrbracket^{w,t}) \\ &= [\lambda e_v . \text{SHIFT}_{s-e}(\llbracket \mathbf{S} \rrbracket^{w,t})(e) = 1 \ \& \ \exists e'(\tau(e) \subseteq \tau(e') \ \& \ \llbracket \mathbf{able} \mathbf{S} \rrbracket^{w,t}(e') = 1)] \end{aligned}$$

On the other hand, IMP and PRT show no evidence of shift when they host stative predicates; no telic re-interpretations result in their case. So, unlike PFV/PROG/HAB/FUT, the two categories are defined for unbounded eventuality predicates. And as expected, IMP/PRT also fail to license AEs when they host the ability root; no shift arises in that case either.

<sup>28</sup>This conjunctive definition faces problems under negation. In Alxatib 2016b, 2019 I suggested replacing the conjunction with a biconditional presupposition.

<sup>29</sup>(62b) carries the same implication that its English translation does: that it took some effort on Iyad’s part to love Lolo.

## 6 Conclusions and future work

The findings reported in this paper were intended to (i) show challenges to Bhatt’s and Hacquard’s accounts of Actuality Entailments, and (ii) show support for Homer’s account of AEs as results of aspect-shift. In developing these two points, I emphasized the following difference between Bhatt/Hacquard and Homer: the former explain *absence* of AEs by relying on *external* modality — external to the ability expression, that is. Without such a layer of modality, AEs come about as default inferences, as it were: they either result from the lexical semantics of the ability expression (Bhatt), or from the prohibition against having differing event properties across possible worlds (Hacquard’s PED). On Homer’s view, the default is *absence* of AEs — the inferences only arise when the (stative) ability verb appears in the perfective, an aspect category that is defined only for bounded event predicates.

Both (i,ii) were backed by data from Palestinian Arabic, a language that has not featured in prior discussions of AE-licensing. PA was specifically shown to have an aspect category (PRT) that does not independently have modal readings, but that nevertheless fails to license AEs when it hosts the ability root. That was argued to be problematic for Bhatt/Hacquard, because on both views, AEs are crucially linked to absence of modality. PA was also shown to have four morphosyntactic contexts where stative predicates take shifted, bounded interpretations, and in all four contexts it was shown that the ability root licenses AEs. I have speculated that AEs result from a “dynamic” aspect shifting, an instance of coercion that, speaking vaguely, requires active involvement of the given agent (de Swart 1998). I suggested that it may be this “active involvement” that generates the AE in the case of ability, but I leave the plausibility of this proposal to future study.

## References

- Alxatib, Sam. 2016a. Actuality entailments in Palestinian Arabic. In *Proceedings of the 46th meeting of the North East Linguistic Society*, ed. Christopher Hammerly and Brandon Prickett, 11–24. Amherst, MA: GLSA Publications.
- Alxatib, Sam. 2016b. Actuality entailments, negation, and free choice inferences. In *Semantics and Linguistic Theory 26*, ed. Mary Moroney, Carol-Rose Little, Jacob Collard, and Dan Burgdorf, 451–470. Amherst, MA.
- Alxatib, Sam. 2019. Actuality entailment and free choice. *Journal of Semantics* 701–720.
- Arregui, Ana, María Luisa Rivero, and Andrés Salanova. 2014. Cross-linguistic variation in imperfectivity. *Natural Language and Linguistic Theory* 32:307–362.
- Baglini, Rebekah, and Itamar Francez. 2016. The implications of managing. *Journal of Semantics* 33:541–560.
- Bary, Corien. 2009. Aspect in Ancient Greek. A Semantic Analysis of the Aorist and Imperfective. Doctoral Dissertation, Radboud University.
- Bhatt, Rajesh. 1999. Covert modality in non-finite contexts. Doctoral Dissertation, University of Pennsylvania.

- Bhatt, Rajesh. 2006. *Covert modality in non-finite contexts*. Berlin: Mouton De Gruyter.
- Boneh, Nora. 2010. Perfect constructions in Syrian Arabic. In *Layers of Aspect*, ed. Patricia Cabredo Hofherr and Brenda Laca. Stanford: CSLI Publications.
- Carlson, Gregory N. 1995. Truth conditions of generic sentences: two contrasting views. In *The Generic Book*, ed. Gregory N. Carlson and Francis Jeffrey Pelletier. Chicago: University of Chicago Press.
- Dahl, Östen. 1975. On generics. In *Formal Semantics of Natural Language: Papers from a Colloquium Sponsored by the King's College Research Centre, Cambridge*, ed. Edward L. Keenan, 99–111. Cambridge: Cambridge University Press.
- Dowty, David. 1977. Toward a semantic analysis of verb aspect and the English ‘imperfective’ progressive. *Linguistics and Philosophy* 1:45–77.
- Dowty, David. 1979. *Word Meaning and Montague Grammar*. Dordrecht: Reidel.
- Falk, Ingrid, and Fabienne Martin. 2017. Towards an inferential lexicon of event selecting predicates for French. In *IWCS 12*.
- Hacquard, Valentine. 2006. Aspects of Modality. Doctoral Dissertation, MIT.
- Hacquard, Valentine. 2009. On the interaction of aspect and modal auxiliaries. *Linguistics and Philosophy* 32:279–312.
- Hacquard, Valentine. 2014. Actuality entailments. In *A Companion to Semantics*, ed. Lisa Matthewson, Cécile Meier, Hotze Rullmann, and Thomas Ede Zimmermann. Oxford: Wiley.
- Hallman, Peter. 2017. Participles in Syrian Arabic. In *Perspectives on Arabic Linguistics XXIX: Papers from the Annual Symposium on Arabic Linguistics, Milwaukee, Wisconsin, 2015*, ed. Hamid Ouali. Amsterdam/Philadelphia: John Benjamins.
- Homer, Vincent. 2010. Actuality entailments in French: a case of aspectual coercion. [Lingbuzz/001058](https://lingbuzz/001058).
- Homer, Vincent. 2011. Polarity and Modality. Doctoral Dissertation, UCLA.
- Iatridou, Sabine, Elena Anagnostopoulou, and Roumyana Izvorski. 2001. Observations about the form and meaning of the perfect. In *Ken Hale: A Life in Languages*, ed. Michael Kenstowicz, 189–238. Cambridge, MA: MIT Press.
- Iatridou, Sabine, Elena Anagnostopoulou, and Roumyana Pancheva. 2003. Observations about the form and meaning of the perfect. In *Perfect Explorations*, ed. Artemis Alexiadou, Monika Rathert, and Arnim von Stechow, 153–204. Berlin: de Gruyter.
- Karttunen, Lauri. 1971. Implicative verbs. *Language* 47:340–358.
- Karttunen, Lauri, and Stanley Peters. 1979. Conventional implicature. In *Presupposition*, ed. Choon-Kyu Oh and David A. Dinneen, volume 11 of *Syntax and Semantics*. New York, San Francisco, and London: Academic Press.
- Krifka, Manfred. 1989. Nominal reference, temporal constitution and quantification in event semantics. In *Semantics and Contextual Expression*, ed. Renate Bartsch, Johan van Benthem, and P. van Eerde Boas. Dordrecht: Foris.
- Landman, Fred. 1992. The progressive. *Natural Language Semantics* 1:1–32.
- Lawler, John Michael. 1973. *Studies in English Generics*. Ann Arbor, MI: University of Michigan Press.
- Mari, Alda, and Fabienne Martin. 2007. Tense, abilities and actuality entailment. In

- Amsterdam Colloquium 16*, ed. Maria Aloni, Paul Dekker, and Floris Roelofsen. Amsterdam: ILLC/University of Amsterdam dept. of Philosophy.
- Michaelis, Laura A. 2003. Headless constructions and coercion by construction. In *Mismatch: Form-function Incongruity and the Architecture of Grammar*, ed. Elaine J. Francis and Laura A. Michaelis, 259–310. Stanford, CA: CSLI Publications.
- Pancheva, Roumyana. 2003. The aspectual makeup of perfect participles and the interpretations of the perfect. In *Perfect Explorations*, ed. Artemis Alexiadou, Monika Rathert, and Arnim von Stechow, 277–306. Berlin: de Gruyter.
- Piñón, Christopher. 2009. Another look at the actuality entailments of certain modals. *Genericity: Interpretation and Uses*, Paris, 11-13 May 2009.
- Piñón, Christopher. 2011. The pragmatics of actuality entailment. Handout of talk presented in *Aspect and Modality in Lexical Semantics*, Stuttgart, 30 Sept. 2011. Available at [http://pinon.sdf-eu.org/work/pinon\\_pae\\_ho.pdf](http://pinon.sdf-eu.org/work/pinon_pae_ho.pdf).
- Portner, Paul. 2009. *Modality*. New York: Oxford University Press.
- Portner, Paul. 2011. Perfect and progressive. In *Semantics: An International Handbook of Natural Language Semantics*, ed. Klaus von Stechow, Claudia Maienborn, and Paul Portner, volume 2, 1217–1261. Berlin: de Gruyter.
- Pustejovsky, James. 1995. *The Generative Lexicon*. Cambridge, MA: MIT Press.
- de Swart, Henriëtte. 1998. Aspect shift and coercion. *Natural Language and Linguistic Theory* 16:347–385.
- de Swart, Henriëtte. 2011. Mismatches and coercion. In *Semantics: An International Handbook of Natural Language Semantics*, ed. Klaus von Stechow, Claudia Maienborn, and Paul Portner, volume 2. Berlin: de Gruyter.
- Thalberg, Irving. 1969. Austin on abilities. In *Symposium on JL Austin*, ed. K. T. Fann. New York: Humanities Press Inc.
- von Wright, Georg Henrik. 1963. *Norm and Action: A Logical Inquiry*. London: Routledge & Kegan Paul.