Can you see? Actuality Entailments in the present

Abstract. The goal of this paper is to argue that English present ability modal statements like “I can see Saturn” are ambiguous in the same way as past ability statements like "I was able to lift a fridge": they can express either a general ability (‘I have the ability to see Saturn, in general’), or have an actualized (episodic) interpretation (‘I’m seeing Saturn, right now’). The challenge is to explain why in the present, actualized interpretations are only licensed when the modal’s prejacent is a perception verb like see, and not with other predicates: “I can watch Saturn” only has the general ability reading available, and not the actualized one. I propose that (i) similar to what has been shown for past modal statements in the literature on Actuality Entailments (AEs) (Bhatt 1999), the ambiguity depends on grammatical aspect: general ability readings are due to the imperfective, which “removes” AEs by having the event occur in worlds introduced by a generic operator (Bhatt 1999), and actualized readings are due to the perfective, which directly combines with the prejacent event across the modal (Hacquard 2009). (ii) The usual unavailability of actualized interpretations in the present comes from the Present Perfective Paradox (Malchukov 2009): perfective aspect is incompatible with present tense, because the event time, a time interval, cannot be contained within the punctual speech time. (iii) Perception verbs are special in that they, and only they, are able to combine with perfective in the present, either because the PPP does not arise at all, or because they allow a specific type of aspectual coercion. This also explains their behavior in (non-modal) simple present sentences. The second challenge is that actualized interpretations in the present appear to occur exclusively with ability modals, and not when modals express other root flavors (e.g., teleological or deontic). I propose that this restriction is due to a further temporal orientation constraint.

Keywords. Actuality Entailments; ability modals; perception verbs; simple present tense; present perfective paradox
Introduction

Present ability modal statements, such as (1) and (2), can be used to convey that one possesses a *general ability* to perform a certain action: for instance, that Sam has the capacity to see/watch Saturn, perhaps because she lives in the countryside (*general ability* reading, (1)/(2)a). However, (1) can also be interpreted differently, implying that the act of seeing Saturn is actually taking place at the present moment (*actualized/episodic* reading, (1)b). This alternative interpretation is not available for (2). The main goal of this paper is to explain the contrast between (1) and (2)—why is it that (1), but not (2), can be used to indicate that Sam is presently seeing Saturn?

(1) Sam **can** see Saturn.
   a. *she has the ability* (e.g., when it’s dark)  General Ability
   b. *she does* (right now)  Actualized

(2) Sam **can** watch Saturn.
   a. *she has the ability* (e.g., when it’s dark)  General Ability
   b. *she does* (right now)  *Actualized

The ambiguity of (1) has already been described for past ability modal statements such as (3). Similarly, *was able* in (3) can both be used to convey that Sam once had the capacity to lift a fridge (*general ability*, (3)a), or the occurrence of an actual event of Sam lifting a fridge in the past (*actualized*, (3)b), with the entailment that the event described by the modal’s complement actually took place—what Bhatt (1999) called *Actuality Entailments* (AEs). Bhatt showed that in languages that unlike English have an overt morphological distinction between perfective and imperfective aspect, AEs happen when modals combine with *perfective*, but not with *imperfective* aspect.

(3) Sam **was able to** lift the fridge.
   a. *she had the ability* (e.g., in those days)  General Ability (no AE)
   b. *she did* (yesterday)  Actualized (AE)

I argue that the same mechanism explains the ambiguity of (1) in the present, and the ambiguity of (3) in the past. The novel challenge is to explain why in the present tense, I argue, *actualized* readings are available only for a limited group of predicates exemplified in (1), perception verbs like *see or hear*, and why they are not possible with eventives like *watch* in (2), nor with typical statives.

Importantly, we find the same contrast between perception verbs and eventives in (non-modal) simple present sentences: *sees*, in (4), can be used to describe both a plurality of events (*pluractional*, (4)a) and a single ongoing event (*episodic*, (4)b), whereas *watches* in (5) can only be used to describe a plurality of events ((5)a), and not a single ongoing event ((5)b).

(4) Sam **sees** Saturn.
   a. 'There are events of Sam-seeing-Saturn now and then.'  Pluractional
   b. 'There is presently an event of Sam-seeing-Saturn.'  Episodic

(5) Sam **watches** Saturn.
   a. 'There are events of Sam-watching-Saturn now and then.'  Pluractional
   b. 'There is presently an event of Sam-watching-Saturn.'  *Episodic

This availability of *episodic* readings for perception verbs is one of the reasons why they are often analyzed as statives, which as shown in (6), are used to describe “ongoing” eventualities in the simple present (properties of individuals that hold at speech time). I argue that this resemblance is superficial. In present modal statements, statives never lead to *actualized* interpretations: they are either disallowed,
for statives like be-Canadian ((7)a), or might be reinterpreted (“coerced”) into eventives, for statives like be-attentive ((7)b). Crucially even in the latter case, they never allow AEs.

(6) Sam is attentive/is Canadian.
(7) a. ??Sam can be Canadian.
   b. Sam can be attentive. General Ability/*Actualized

I propose to explain the limited distribution of AEs in the present based on the following assumptions. (i) The literature on past AEs has established that there is a connection between AEs and grammatical aspect: perfective on root modals leads to actualized interpretations, whereas imperfective leads to general ability interpretations (Bhatt 1999, Piñón 2003, Hacquard 2006, a.o.). (ii) The reason why actualized interpretations are not more generally available in the present is that there is a general incompatibility between present tense and perfective aspect, sometimes called the Present Perfective Paradox (Malchukov 2009). Perfective requires the event time (E) be contained the reference time (R). The problem is that in the present, the reference time is the speech time, usually taken to be punctual (Jespersen 1924, Dowty 1979, Smith 1997). A time-interval would be contained within a time-point. As discussed by Hacquard (2006, Appendix A), this can explain both why episodic interpretation are not available in (5), and why we usually don’t get AEs in the present ((2)). (iii) I propose that perception verbs are unique in that they, and only they, are able to combine with perfective in the present.

In the rest of this paper, I develop my proposal and discuss its consequences for theories of AEs, the English simple present, and debates about the aspectual class (Aktionsart) of perception verbs. Section 1 sets up the novel data. I first review data about past modal statements to show the connection between AEs and grammatical aspect, and then give the evidence that AEs arise in the present as well, but in a very restricted way: only when the modal’s prejacent is a perception verb. Section 2 presents my proposal. I explain how the Present Perfective Paradox predicts the usual lack of AEs in the present and then focus on perception verbs, showing how they also differ from statives, which are generally taken to be incompatible with perfective due to its so-called boundedness requirement (Mari & Martin 2007; see also de Swart 1998, Bary 2009). I propose that perception verbs are special in that they “escape” the PPP: they are compatible with the perfective in the present. Section 3 focuses on the consequences of these data for current theories of AEs. I discuss how two of the main types of approaches to AEs might capture them, and argue that approaches where perfective aspect directly combines with the prejacent event (e.g. Hacquard 2006, 2009, Kratzer 2012) might be in a better position than those relying on aspectual coercion (e.g. Homer 2011, 2021). Finally, section 4 introduces a second challenge: AEs in the present seem to occur with ability modals only, unlike AEs in the past which occur with all root modal flavors. I propose that this is due to a further temporal orientation constraint. Section 5 concludes.

1. Background

The goal of this section is to establish that ability modal statements like (1) but not (2) allow actualized readings in the present. I first review evidence for the link between AEs and grammatical aspect established with past modal statements, and then give evidence supporting the claim that AEs occur in the present as well but in a restricted way.

1.1 Actuality Entailments in the past: the role of grammatical aspect
In English, past ability modal statements are ambiguous: (8), repeated from (3), can either be used to mean that Sam had-the-ability to lift a fridge in those days (general ability, (8)a), or that Sam actually lifted a fridge yesterday (actualized, (8)b). (8)b, but not (8)a, entails that the possible fridge-lifting event actually occurred. This is what Bhatt (1999) called Actuality Entailments (AEs) (see also Piñón 2003, Hacquard 2006, Homer 2010, 2021, Mari & Martin 2007, Kratzer 2012, Nadathur 2023, a.o.).

(8) Sam was able to lift a fridge.
   a. In those days, Sam had the ability to lift a fridge  Ability (no AE)
   b. Yesterday, Sam lifted a fridge  Actualized (AE)

Bhatt showed that in languages that make an overt morphological distinction between perfective and imperfective in the past, imperfective on root modals leads to ability interpretations, whereas perfective leads to actualized interpretations. This is illustrated in French in (9). That past perfective modal sentences, like (9)b, but not imperfective ones like (9)a, entail an actual event, is typically shown using two tests. First, the contradiction test (i) shows that when we add the continuation that Sam did not p, we obtain a contradiction with past perfective ((9)b), but not with imperfective ((9)a). Second, the presupposition test (ii) (Homer 2010) shows that (9)b satisfies the (notoriously hard to accommodate) presupposition triggered by aussi (‘too’), which requires the existence of an actual event, whereas with imperfective ((9)a), we obtain a presupposition failure.

(9) a. French, past imperfective: Sam pouvait voir/regarder Saturne, Ability/*Actualized
   Sam could-IMPF see/watch Saturn, ‘Sam was able to see/watch Saturn,
   i. Contradiction test: …mais il ne l’a pas vue/regardée.
      ……but he NE it-has not seen/watched.
   …but he didn’t watch/see it.’
   ii. Presupposition test: #…et Al aussi l’a vue/regardée.
      #…and Al too of-it has watched/seen.
      #…and Al saw/watched it too.’

b. French, past perfective: Sam a pu voir/regarder Saturne, *Ability/Actualized
   Sam has could-PFV see/watch Saturn, ‘Sam was able to watch/see Saturn,
   i. Contradiction test: #….mais il ne l’a pas vue/regardée.
      #…but he NE it-has not seen/watched.
   …but he didn’t watch/see it.’
   ii. Presupposition test: …et Al aussi l’a vue/regardée.
      …and Al too of-it has watched/seen.
      …and Al watched/saw it too.’

While theories of AEs diverge on how they explain the connection between AEs and perfective/imperfective aspect, most authors agree on the following generalization: perfective marking on root modals licenses AEs, whereas past imperfective yields no AE. In the rest of this paper, I’ll take this relation as granted and I’ll assume that perfective is necessary to license AEs (in other words, AEs only occur with the perfective). I come back to theories of AEs in section 3.1

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1 As an anonymous reviewer points out, potential counterexamples to this generalization have been discussed in the more recent literature (see e.g. Alxatib 2021, Nadathur 2023, for discussion). While I leave this aside here, it’s worth noting that the availability of present AEs could also mean that perfective is not required for AEs.
1.2 Actuality Entailments in the present

The existing literature on AEs focuses on past modal statements. I’ll now give evidence that English present ability statements display the same ambiguity, but in a restricted way: actualized interpretations are only available when *can* combines with perception verbs—verbs of involuntary perception like *see, hear* or *smell* ((10)), but not with eventives like *watch* ((11)), nor with statives like *be attentive* ((12)).

We can again use the same tests as for past statements: when we add the continuation that *Sam doesn’t see/watch Saturn* ((10)/(11)-(i)), (10) can be heard as a contradiction, but not (11)/(12). Note that (as we also see in English past modal statements (8)) since the sentence is ambiguous, the ability interpretation is always possible, so the continuation does not always lead to a contradiction. Homer’s presupposition test, however, proves that (10) has a distinct actualized reading, unavailable for (11)/(12): in (10)-(ii), the presupposition of *too* is supported, whereas in (11)/(12)-(ii), we (systematically) obtain a presupposition failure.

(10) Sam can see Saturn,
   i. Contradiction test: ✓but she doesn’t see it (now). Ability
   ii. Presupposition test: ✓and Joe sees it too. Actualized

(11) Sam can watch Saturn,
   i. Contradiction test: ✓but she isn’t watching it (now). Ability
   ii. Presupposition test: ✓and Joe watches it too. *Actualized

(12) Sam can be attentive,
   i. Contradiction test: ✓but she isn’t (now). Ability
   ii. Presupposition test: ✓and Joe is attentive too.³ *Actualized

The availability of AEs doesn’t seem to depend on the syntactic nature of the perception verb’s own complement. Though the complement might bias towards one or the other interpretation (for instance, gerunds seem to make actuality interpretations more readily available), in (13), both ability and actualized interpretations can be shown available.

(13) a. Sam can see [NP Venus]
    b. Sam can see [Naked infinitive Venus move]
    c. Sam can see [Gerund Venus moving]
    d. Sam can see [CP that Venus moves]

   i. ✓but she doesn’t see it (now). Ability
   ii. ✓and Joe sees him too. Actualized

Finally, AEs are possible with some ‘cognitive’ perception verbs like *remember*: in (14), both ability and actualized interpretations are available.

(14) Sam can remember the street,
   i. ✓but she isn’t doing so (now). Ability
   ii. ✓and Joe remembers it too. Actualized

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² Throughout this paper, I use the main distinction between *stative* and *eventive* predicates and presuppose some familiarity with Vendler’s (1957) classification of event-types into four main classes. States (e.g. be-Canadian/be-available) describe stative situations (durative and unbounded). Eventives subsumes the three remaining classes: Activities (e.g. run) describe situations that have no specific endpoint, and involve no change (durative and unbounded). Achievements (e.g. reach-the-summit) are punctual and involve a (instantaneous) change of state. Accomplishments (e.g., cross-the-street) lead to a change of state (durative and bounded). Various other classifications of event-types have been proposed in the literature; for a review, see e.g. Filip 2012.

³ There is some variation in judgments for sentences like (12)-(ii), but the four native speakers I consulted agree that it is significantly degraded compared to (10)-(ii).
2. Present, perfective and perception verbs

In section 1, I argued that actualized readings are available in the present, but only when the prejacent is a perception verb. The goal of this section is to provide an explanation for this novel puzzle, which hasn’t yet been discussed in the literature on AEs. First, I give a brief reminder of the difference between perfective and imperfective aspects and explain the Present Perfective Paradox: why perfective aspect is in principle unable to combine with the present tense. Then, building upon the established connection between AEs and perfective, I show how the PPP predicts the usual absence of AEs in present modal statements. Next, I focus on the unique behavior of perception verbs, focusing on how they differ from both eventives and statives. Eventually, I propose that perception verbs are special in that they and only they are compatible with the perfective in the present, either because the PPP does not arise at all, or because they allow a specific type of aspectual coercion.

2.1. Explaining the lack of AEs in the present

According to standard views, perfective and imperfective differ in the perspective they introduce on the event: imperfective presents it from the inside, as an ongoing process, and perfective, as a single whole, located within a certain time interval (Comrie 1979). Formally, this is usually captured via containment relations: imperfective requires that the event time (E) properly contains the reference time (R) (15)a; perfective, that the event time (E) is contained within the reference time (R) (15)b. The difference is illustrated in French in (16)a/b (the non-modal versions of (9)a/b). Past perfective sentences like (16)b, but not past imperfective (16)a, entail an actual event.

(15) a. Imperfective: E ⊃ R ‘from within’ (does not entail a p-event)
   b. Perfective: E ⊆ R ‘from the outside’ (entails a p-event)

(16) a. French, past imperfective: Sam voyait/regardait Saturne
    Sam see/watch-IMPF Saturn
    ‘Sam (used to) watch/see Saturn’

   b. French, past perfective: Sam a vu/regardé Saturne
    Sam has see/watch-PFV Saturn
    ‘Sam saw/watched Saturn’

Imperfective aspect is standardly argued to have a modal semantics (Menendez-Benito 2013, Arregui et al. 2014, Ferreira 2016, a.o.). For Bhatt (1999), this was crucial to explain the lack of AEs with imperfective in past modal statements like (9)a. I come back to this point in section 3. I’ll propose to explain the general ability reading of (10)/(11)/(12) in the same way: as coming from the generic operator associated with imperfective aspect, and I’ll argue that the usual lack of AEs in the present comes from a more general incompatibility between perfective and present tense, sometimes called the Present Perfective Paradox (PPP) (Malchukov 2009) ((17)) (see also Comrie 1976, Langacker 1991, Smith 1997, De Wit 2016, a.o.).

(17) Present Perfective Paradox (PPP): The perfective is incompatible with present tense.

There is a debate about whether simple present can combine with perfective aspect. As we see in (18), in bare (non-modal) simple present sentences, eventives like watch typically receive ‘pluractional’
interpretations, describing a general pattern of repeated events. Most semantic analyses attribute to these pluractional interpretations to the generic operator associated with the imperfective (for various analysis of the simple present, see Carlson 1977, Smith 1991, 1994, Kamp & Reyle 1993, Cowper 1998, a.o.). But importantly, English eventives never get ‘episodic’ interpretations in the simple present: they can’t be used to describe ongoing events. As we see in (18)a/b/c, this holds for all subtypes of eventives: activities ((18)a), accomplishments ((18)b) and achievements ((18)c).

As we saw in (15)b, perfective requires that the event time is contained within the reference time \( (E \subseteq R) \). The problem is that in the present, the reference time is the speech time, usually taken to be punctual (Jespersen 1924, Dowty 1979, Smith 1997). Therefore, a present perfective sentence should mean that a time interval is contained within a time point (or alternatively, for punctual events (e.g. reach-the-summit), that two time points can perfectly coincide)——thus, the paradox.\(^5\)

\[
\begin{align*}
(18) & \quad \text{a. Sam watches Saturn.} & \text{activity} & \text{Pluractional/*Episodic} \\
& \quad \text{b. Sam crosses the street} & \text{accomplishment} & \text{Pluractional/*Episodic} \\
& \quad \text{c. Sam reaches the summit} & \text{achievement} & \text{Pluractional/*Episodic}
\end{align*}
\]

This paradox can also explain the usual lack of AEs in present modal statements. As already discussed by Hacquard (2006, Appendix A), given the link between perfective and AEs (AEs are only licensed by the perfective), if perfective can’t combine with present tense, AEs are never expected.

2.2. Statives, perfective and aspectual coercion

So how can we explain the data with perception verbs? One possible explanation, I argue, is that perception verbs “escape” the PPP: they are compatible with present perfective. This will explain their behavior in both modal and non-modal present sentences, as I now show.

In the simple present—contrary to eventives—, perception verbs can be used to describe ongoing events, happening at speech time. We find an ambiguity again: (19) can receive both pluractional ((19)a), and episodic interpretations ((19)b).

\[
\begin{align*}
(19) & \quad \text{a. Sam sees Saturn.} & \text{Pluractional/Episodic} \\
& \quad \text{b. 'There are events of Sam-seeing-Saturn now and then.'} & \text{Pluractional} \\
& \quad \text{b. 'There is presently an event of Sam-seeing-Saturn.'} & \text{Episodic}
\end{align*}
\]

\(^4\) For reasons of space, I don’t delve into the distinctions between the different uses of English simple present. I use pluractional to encompass habitual uses (e.g., “Sam bikes to school”), generic (e.g., “Fishes swim”), futurate (e.g., “Sam arrives at noon”) and reportive/historical (e.g., “Sam enters the room”). What’s crucial for us is that eventives can never be used to describe ongoing states of affairs in the present (to do so, they require the progressive, which acts as a stativizer).

\(^5\) Various explanations have been proposed for the PPP: for an overview, see de Wit 2016. According to De Wit, we find manifestations of this paradox in all languages, but they vary in how they “resolve” it. She describes three possible “strategies”: the prospective strategy, leading to future interpretation, found in Russian or Finnish; the retrospective strategy, leading to past interpretation, found in some African languages and in Chinese, and the structural strategy, leading to habitual/generic reading, as in English or Bulgarian. She analyzes these interpretations as a consequence of the PPP, resulting from aspectual coercion, following Michaelis’ (2003) analysis of simple present as an aspectually sensitive operator selecting for states (see also Schmitt 2001, de Swart 2008).
This makes perception verbs resemble statives, which are used to describe “ongoing” states of affairs ((20)/(21)) in the present:  

(20) Sam is Canadian/tall/etc. (Individual-level) ‘Ongoing’
(21) Sam is attentive/nice/etc (Stage-level) ‘Ongoing’

I’ll argue that the resemblance between the ‘ongoing’ interpretation of statives ((20)/(21)) and the episodic interpretation of perception verbs ((19)b) is superficial, and that (only) the latter is due to perfective. First, there is no complete “being” event entailed by (20)/(21) (they just describe properties that hold at speech time), whereas (19) seems to entail a complete seeing-event—one hallmark of the perfective.

Second, statives are said to be generally incompatible with perfective, because the perfective requires a bounded event as its argument (de Swart 1998, Bary 2009, Homer 2011, 2021, a.o.). The problem this time does not come from the interaction with tense: it is that statives, having no natural beginning or endpoint, cannot be contained within the reference time, as required by the perfective ((15)b). Following the terminology introduced by Mari & Martin (2007), I’ll call this the boundedness requirement (BR) of the perfective ((22)). This is taken to explain data like (23), where the stative be-Canadian is fine with past imperfective ((23)a), but unacceptable with past perfective ((23)b).

(22) Boundedness Requirement (BR): The perfective requires a bounded event as its argument.
(23) a. Sam était Canadien.
  Sam was-IMPF Canadian.
  ‘Sam was IMPF Canadian.’
 b. ?Sam a été Canadien.
 ?Sam has been-PFV Canadian.
  ‘?Sam was PFV Canadian.’

In French, past perfective marking on perception verbs ((24)) is judged perfectly natural, suggesting that no conflict arise when perception verbs and perfective combine. However, it has been shown—with some other statives as well—that bad combinations (cases of aspectual mismatches) do not systematically lead to ungrammaticality: they can sometimes be “repaired,” via “aspectual coercion” (Moens 1987, Moens & Steedman 1988, de Swart 1998, a.o.). For instance, in (25), the (Stage-level) stative être-attentif (‘be-attentive’) can be reinterpreted as ‘act in an attentive way’, a bounded event, to meet the BR.  

(24) Sam a vu Saturne.

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6 I use the common distinction between Individual- and Stage-level statives: Individual-level (e.g. be-Canadian) describe inherent properties of an entity, not subject to change; Stage-level (e.g. be-attentive), temporary or accidental properties (Conrie 1976, Carlson 1977a).
7 As pointed out by a reviewer, De Swart (1998) and Bary (2009) discuss the selectional restrictions of the perfective in terms of Krifka’s (1989) quantization property, which is conceptually similar to boundedness. Here I abstract away from technical details.
8 For reasons of space, I can’t elaborate much on this topic, but see Nadathur 2023, chapter 6.2, for review and discussion. Technically, Aspectual coercion is taken to involve covert coercion operators intervening between the aspectual head and the vP. Different coercion operators have been discussed in the literature: for instance, MAX returns a complete eventuality, from beginning to end, INGR returns the starting point of a state. Importantly, it can be triggered by temporal adverbials (e.g. ‘suddenly’). I come back to this in section 3, as aspectual coercion is at the core of Homer’s (2021) account of AEs (see also Alxatib 2019, Nadathur 2023).
Sam has seen-PFV Saturn.
‘Sam saw Saturn.’

(25) Sam a été attentif.
Sam has been-PFV attentive.
“Coercion”: ‘Sam acted in an attentive way.’

One could thus argue that aspectual coercion is involved in both (24) and (25). Since I don’t see how to adjudicate between the possibility that perception verbs “naturally” combine with perfective, or that a coercion operator is involved to “repair” (24), I’ll leave both open here. Note however that perception verbs in the perfective are judged natural without adding any temporal adverbials (e.g. suddenly), contra what we often observe when aspectual coercion is involved, which would favor the first possibility.

Getting back to modal statements, perception verbs and statives again differ in the present. The acceptability of statives under root modals is an important matter of debate in the literature, which I can only allude to here (Hackl 2001, Werner 2006, Klecha 2016, Rullmann & Matthewson 2018, a.o.; for a summary, see Harr 2019, chapter 7). According to Hackl (2001), there is a general ‘ban against statives’ under ability can, which, he argues, requires a prejacent expressing a change of state. As we see in (26), under present root modals, Individual-level statives like be-Canadian in (26) are indeed disallowed. However here again, some reinterpretation strategies seem available, for Stage-level like be-attentive in (27), which can be reinterpreted as ‘Sam is sometimes attentive’ (expressing quantification over situations; see Heim 1982, Brennan 1993, Portner 2009). Note that in the past, Stage-level statives under perfective modals allow AEs, as shows the contradiction test ((28) is fine with imperfective).

(26) ??Sam can be Canadian. (Individual-level)
(27) ✓Sam can be attentive, ??and Joe is attentive too. (Stage-level)
Possible interpretation: ‘Sam is sometimes attentive’

(28) Pour traverser, Sam a dû être prudent, mais il ne l’a pas été.
To cross, Sam has must-PFV be careful, #but he NE it-has not be
‘To cross, Sam had to be careful, #but he wasn’t.’

While these data and the exact nature of the constraint are still debated, our take-away is that, even though some statives may allow AEs (when “coerced”) in the past ((28)), they never do in present modal statements: if coercion is to happen, they behave like eventives.

2.3. The Aktionsart of perception verbs

Let’s take stock. Our main challenge was to explain why AEs in the present only occur with perception verbs. I propose that perception verbs are special in being compatible with present perfective, which is not the case of typical eventives because of the PPP, nor of typical statives because of the BR. This might suggest that perception verbs form an aspectual class on their own—as has been proposed, for instance, for semelfactives (Comrie 1976).

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9 A reviewer points out that (27) may also be interpreted as ‘It’s possible for Sam to act attentively.’
10 Individual-level stative don’t. We seem to obtain the same split in behavior between Individual and Stage-level, suggesting that usually the same reinterpretations strategies are available in the present and in the past.
Perception verb’s aspectual class (Aktionsart) has been a matter of debate since Vendler (1957) (see Ryle 1949, Dowty 1978, Mourelatos 1978, Croft 2012, Gisborne 2010, a.o.). In his classic 1957 paper, Vendler takes them as an example, to show that some classes of predicates do not neatly fit into one class. For him, perception verbs have an “obvious” achievement sense, which he calls their ‘spotting’ sense (instantaneous, telic) ((29)/(30)a), but can also be states/activities (durative, atelic) (30)b. He also discusses two “borderlines cases,” where see behaves like an accomplishment ((30)c), and with the progressive ((30)d), receives an idiomatic interpretation (hallucinating).

(29) At that moment, I saw him. achievement

(30) a. I saw him while he was running. achievement Vendler (1957)
b. I saw him running. state/activity
c. I saw Carmen last night. accomplishment
d. He is seeing pink elephants. idiomatic interpretation

Vendler doesn’t propose any compelling explanation for perception verbs’ puzzling behavior. For him, this is a case of polysemy: the different interpretations come from see having (at least) two senses, one being an achievement, and the other one a state (Vendler 1967:113). He uses three tests to show perception verbs’ peculiarity: their incompatibility with English progressive (30)d, their incompatibility with adverbs like deliberately (showing that they take experiencer but not agentive subjects), and finally, their behavior under can, noting the “curious equivalence in meaning” between “I can see it” and “I see it” (Vendler 1957, p154 to 160).

Relating Vendler’s discussion to the literature on AEs, we see we don’t need to assume polysemy: his different senses come from the interaction with grammatical aspect. With perfective, we obtain Vendler’s achievement or ‘spotting’ sense ((29)/(30)a); with imperfective, their stative sense ((30))b.

Let’s sum up. If we assume that perception verbs are special in being “compatible” with present perfective, we can explain both why—contrary to eventives—they can be used to describe ongoing events in the simple present, and why—contrary to both eventives and statives—they allow AEs in present modal statements. Concretely, this can be implemented in two ways.

First, it could be that with perception verbs, the PPP just does not arise for principled reasons. As we saw in section 2.2, the PPP arises because of the conflict in temporal structure: the event time, represented as an interval, cannot be contained within the speech time, a time-point. Importantly, as we saw in (18)c, it arises even with punctual events: achievements can’t describe ongoing events in the

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11 See also Dowty (1979), for who perception verbs belong to three aspectual classes: achievements, activities and states.

12 Vendler uses the progressive criterion to distinguish activities and accomplishments from states and achievements. For him, progressive marking selects for predicates of eventualities that ‘consist of successive phases following one another in time’ (1957, p. 144) (durative and internally heterogeneous).

13 In many regards, his discussion echoes later discussions of Effortful Inferences (Bhatt 1999). Bhatt notes that past modal statements, like “Sam was able to P,” seem to carry an implicature that some effort was involved in realizing P (the more general question being what (if) there is a difference, at the truth-conditional level, between the modal sentence and its unmodalized counterpart when AEs occur). In the present as well, the use of the modal version of “I see/I can see” seem to suggest that there is some effort involved; no such effortful inference arise with “I can watch.”

14 As noted by a reviewer, the ‘spotting’ interpretation of perception verbs could also involve PRS>PROG (‘Sam is looking at Saturn at speech-NOW’) (rather than PRS>PFV: ‘Sam’s Saturn-seeing is contained within speech-NOW’), which would also require an eventive reinterpretation of the embedded predicate. Explicitly comparing the English data to other languages might useful in differentiating the different possible readings.
simple present, and don’t lead to AEs in modal statements. One potentially critical difference between perception verbs and achievements might be the agentivity of their subject: perception verbs (like statives) take experiencer subjects, whereas achievements take agentive subjects. I leave the implications of this difference for future research. Another line, suggested in Gisborne (2010), would be to say that perception verbs have “no inherent temporal dimension.” Precisely, Gisborne (2010, chapter 5.7) states that “‘seeing’ must be underspecified for its duration; it is neither punctual nor durative inherently, but has its feature for duration specified by the nature of the percept.” He doesn’t give a precise implementation of this idea.

Alternatively, it could be that perception verbs allow a specific type of aspectual coercion, which—for reasons to be explained—is not allowed by other statives in the present. The idea that the PPP can be “resolved” by aspectual coercion is not a new one (see footnote 7). Here, we need to determine what properties of predicates are critical to determine the possible reinterpretations (see Nadathur 2023 and references within), and why perception verbs might permit certain coercion possibilities that aren’t present for other statives in present tense contexts.

One crucial question is thus what happens in languages that make the distinction between perfective/imperfective overt in the present, such as Slavic languages, where categories of tense and aspect are expressed independently. De Wit (2016) argues that in those languages, the combination of perfective and present never involves “real” present tense reference or “real” perfective, but doesn’t give data about perception verbs specifically. I leave this, and a more systematic assessment of the cross-linguistic picture, for future investigation.

Note that this also has consequences for theories of the English simple present. As noted in section 2.1, the standard take is that present and perfective just “can’t” combine. But this is also debated: for instance, Smith (1994) argues that English (and French) simple present are “aspectual neutral” (see also Brinton 1988). Smith uses other tests to show that English simple present can combine with both imperfective and perfective, in particular the when-test: “Sam always smiles when Al gets home” is ambiguous between an ‘incidental’ interpretation (‘Sam is always smiling when Paul gets home’), which would be due to imperfective, and ‘sequential’ interpretation (cause/consequence), which would be due to perfective. We may then use AEs as another diagnostic for perfectivity: even if they are restricted in the present, the fact that they at least can occur can be taken as evidence that English simple present can combine with perfective, just as the simple past.

3. Explaining Actuality Entailments

The goal of this section is to see how these data help us adjudicating between current theories of AEs. I compare two main types of approaches: under the first type (Hacquard 2006, Kratzer 2012), perfective combines with the prejacent event directly; under the other type (Homer 2011, 2021, Nadathur 2019, Alxatib 2021), AEs result from aspectual coercion, required when perfective combines with modals, which are themselves are taken to be statives. Technical details are available in Appendix A.

For Bhatt (1999), the basic meaning of able is implicative (following Karttunen & Peters (1979)’s analysis of implicatives like manage), and shows up with perfective. Bhatt introduced the idea that the general-ability reading comes from the generic operator associated with the imperfective, which quantifies over ‘representative’ or ‘ideal’ situations (Krifka et al. 1995, Carlson & Pelletier 1995) and “removes” AEs, by making the vP event only need to occur in the worlds introduced by GEN. Most following accounts of AEs keep Bhatt’s insight that the generic operator associated with the imperfective explains the lack of AEs; mostly, they diverge on how they account for the effect of the perfective.
For Hacquard (2006, 2009) (Appendix A1), AEs result from having perfective aspect quantify over the vP event, across the modal. She assumes a monoclusal structure for modal sentences, with a single tense and aspect projections, and where root modals scope under both.\footnote{One of Hacquard’s goals was to use AEs as evidence that root modals scope below Aspect, and epistemics above. She showed that AEs don’t occur with epistemics (see also Borgonovo & Cummins 2007). Note that in the present as well, AEs don’t occur with epistemics: in (i), the actuality reading is not available. (i) Sam might see Saturn, …

(i).√but she doesn’t (now). Ability

(ii).#and Jo sees it too. *Actuality}

With imperfective, following Bhatt, the vP event gets anchored to the worlds provided by GEN. The meaning of a past imperfective sentence like (9)a is thus that ‘in all representative worlds w$_1$ accessible from w$_0$, all (past) events e$_1$ in w$_1$ are such that in some accessible world w$_2$ compatible with the circumstances in w$_1$, e$_1$ is a Sam-watching-Saturn event in w$_2$.’ The entailment ends up being about events occurring in the worlds provided by GEN, which may not include the actual world. With past perfective ((9)b), Aspect, being outside of the scope of the modal, anchors the vP event to the actual world. (9)b’s meaning is thus that ‘there is an event e$_1$ in w$_0$, located in a past interval, such that in some world w$_1$ accessible from w$_0$, e$_1$ is an event of Saturn-watching by Sam in w$_1$’. To derive that the event is a Saturn-watching event in w$_0$, Hacquard postulates a principle, Preservation of Event Description across worlds, which states that all else equal, the same event maintains its description in all worlds in which it occurs (for discussion, see Portner 2009, Falaus & Laca 2020, Nadathur 2023).\footnote{As noted by a reviewer, strictly speaking, perfective does not directly combine with the modal’s prejacent: perfective combines with the modal but ties the event instantiated by aspect to the event described by the prejacent via a shared description (PED principle).}

Though it’s been criticized on other grounds, this type of structural account seems able to capture the present data. With present imperfective, the vP event gets anchored to the worlds introduced by GEN, making the event only need to occur in ‘representative’ situations: we obtain ability interpretations, available for any predicate. With present perfective, as in the past, the vP event gets anchored to w$_0$, and would yield an actual event. However, the combination typically leads to the PPP. But actualized interpretations remain possible for predicates that escape it—perception verbs. Crucially, this captures the link between the ability of perceptions verbs to license AEs in the present and to combine with present simple to yield an episodic interpretation.

Another promising approach is Kratzer’s (2011) (Appendix A2). Kratzer assumes a different structure for modal sentences, where all modals take complements that contain their own aspect: either perfective, or prospective. Prospective locates the event in some future time interval and, following Matthewson (2012), is responsible for the future-orientation often associated with root modals. Perfective locates the event time within the reference time, and triggers AEs by forcing a counterpart of the event to be part of the circumstances which match exactly those of the world of evaluation up to the time of evaluation. With prospective, Sam’s counterpart is only asserted to have the potential to do something after the reference time, which does not entail that she does it. With perfective, the meaning we obtain is that ‘there exists a counterpart of Sam who lives in a world very much like ours, whose circumstances yesterday exactly matched those of Sam’s yesterday, and who watched a counterpart of Saturn yesterday’, from which an actual Saturn-watching event by Sam is inferred.

According to another important line of approach (e.g. Homer 2011, 2021; see also Mari & Martin 2007, Nadathur 2019, 2023; Alxatib 2021), AEs result from aspectual coercion. Homer (2021) (Appendix A3) argues that (root) modals are stative predicates, therefore incompatible with the perfective, because of the Boundedness Requirement (see (22)). He proposes that a dedicated coercion operator,
ACT, triggers actualized interpretations, by having a “contextually salient” actual event satisfy the boundedness requirement of the perfective—for instance for (9)b, an event of Sam-watching-Saturn.

Under this approach, it seems that there shouldn’t be discrimination based on what predicate the modal embeds, since coercion is triggered by the stative nature of the modal itself. If what’s being reinterpreted is the ability modal itself, why should the complement type matter? The question is then what determines the availability of ACT and the value of the entailed event. Homer notes that ACT is not specific to modals: for instance, it also explains the entailment that the house was bought with “La maison a coûté 100 000 €” (‘The house cost €100,000’) (Homer, 2021: 63a). He argues that the entailed event is determined by the utterance context. For non-modal predicates, this depends on the presupposition of the stative (e.g., cost presupposes that its subject can be bought). But as he discusses, this doesn’t capture the facts with modals. An account for why perception verbs but no other verbs leads to actualistic coercion of the ability modal in the present would thus need to be worked out.\footnote{As noted by a reviewer, Homer constrains the result of coercion with ACT to be quantized. If this is right, a stative prejacent might still not give rise to AEs because that wouldn’t satisfy the requirements of his operator ACT without being coerced itself.}

To summarize, for Homer, Aspect combines directly with the modal, which is itself stative. AEs arise because of the general incompatibility between perfective and statives, which can be resolved by ‘actualistic’ coercion. Given that what triggers coercion is the stative nature of the modal itself, it’s unclear why AEs should only be restricted to perception verbs in the present, but not in the past. Our data are also a puzzle for Bhatt, since there’s no reason that the implicative properties of able should reassert themselves with only a specific type of complement. For both Hacquard and Kratzer, Aspect combines with the modal’s prejacent: this might more readily captures that AEs depend on lexical properties of the modal’s prejacent and its ability to combine with perfective. None of the accounts, however, predict the further flavor constraint on AEs in the present, which I now turn to.

4. A puzzle

This section introduces a further puzzle with AEs in the present. In the past, AEs occur with all subtypes of root possibility and necessity modals: ability, as in Bhatt’s original examples, but also teleological (goal-based), or deontic (rule-based) modals (Borgonovo & Cummins 2007, Hacquard 2009). This is illustrated in (31) (from Hacquard 2016).

(31)  Jean a pu/dû prendre le train pour aller à Paris, #mais il ne l’a pas pris.  
Jean has could(PFV) take the train to go to Paris but he NE it has not take ‘Jean could take the train to go to Paris, #but he didn’t take it.’

However, AEs seem to occur only with ability modals in the present. This is illustrated in (32): if we use can to mean Sam has the ability to see her gift (32)a, the actualized reading is available. But if we use can to mean that Sam has permission to see her gift (a deontic interpretation, (32)b), then, the sentence doesn’t entail that she’s seeing it now (we obtain a presupposition failure). (33) (teleological) and (34) (deontic) provide more examples: in both cases, actualized interpretations are unavailable.

(32)  a. Ability (‘from here, she’s able to’) …✓ and Joe sees it too. (AE possible)
      b. Deontic (‘now, she’s allowed to’) …?? and Joe sees it too. (no AE)

(33)  To win, Sam can/has to teleological see Waldo, ?? and Joe sees him too. (no AE)
(34) Now, the groom can\textit{deontic} see the bride, ?\textit{and} Joe sees her too. (no AE)

Relatedly, no necessity modals seem to allow AEs in the present. However, this might be a consequence of them being restricted to ability flavor: indeed, as often noted in the literature, ability modals have no clear ‘necessity’ counterpart (Horn 1972, Hackl 1998, Mandelkern et al. 2017). The remaining challenge is thus to explain the restriction to ability in the present: none of the accounts reviewed in Section 3 seem to predict it. While I leave a full treatment to future research, this flavor restriction could be a matter of temporal orientation. As mentioned earlier, root modality tends to be restricted to future-orientation (Condoravdi 2001, Rullmann & Matthewson 2018). This constraint is typically justified by the pointlessness of requests, goals, or desires about already fulfilled states of affairs. Interestingly, ability modality seems to be the only kind of root modality that routinely escapes this future orientation constraint (Thomas 2017, Matthewson 2012, van Dooren et al. 2022). While the reasons for this difference in temporal orientation amongst root flavors is still elusive, it could make sense of the flavor restriction of AEs in the present, which are necessarily present-oriented.

5. Conclusion

I’ve argued that AEs occur in \textit{present} modal statements, but in a restricted way: only when the modal’s prejacent is a perception verb like see, hear, or remember), and not with other predicates. I proposed that, (i) as in the past, \textit{general ability} readings are due to a generic operator associated with the imperfective (Bhatt 1999), and \textit{actualized} readings, to perfective aspect. (ii) Following Hacquard (2006, Appendix A), the reason why \textit{actualized} interpretations aren’t generally available in the present is that the combination of present tense with perfective aspect typically leads to a paradox, the \textit{Present Perfective Paradox} (Malchukov 2009): a whole event cannot be contained within the punctual speech time. (iii) Perception verbs are unique in being the only predicates compatible with present perfective. This leaves some puzzles. First, \textit{why} are perception verbs able to combine with the perfective, if it this is indeed the case? Should they constitute an aspectual class on their own? While Vendler (1957) only discusses English examples, perception verbs peculiar behavior is by no means not a specificity of English. The next step is thus to get to a more systematic assessment of the cross-linguistic picture. Second, why are \textit{actualized} readings available in the present only with \textit{ability} modals, when they are available in the past with other “root” modals? This remains a challenge for all theories of AEs.

References


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Appendix A

Accounts of AEs generally keep Bhatt’s insight that a generic operator associated with imperfective “removes” AEs, by forcing the event to occur only in ‘representative ‘worlds. Essentially, they disagree on how they capture the role of the perfective.

A1. Hacquard’s structural account

For Hacquard (2006, 2009), AEs result from having perfective aspect quantify over the vP event, across the modal. Formally, she assumes a mono-clausal structure for modal sentences, with a single tense and aspect projections, and where root modals scope under both. Sentences like “Sam a pu regarder Saturne” thus have the structure in (1).

\[
(1) \text{[TP past [AspP PFV/IMPF [ModP can [VP Sam watch Saturn]]]]}
\]

Aspects are existential quantifiers over events: their main role is to locate the event in time and in a world. Imperfective locates the event time, \(\tau(e)\), as surrounding the reference time provided by tense (3)a; perfective locates the event time within the reference time (3)b. Root modals are quantifiers over
possible worlds. They take predicates of events (denoted by the vP) as arguments, and return predicates of events (4). Tenses are treated as indexical pronouns (following Partee 1973, Heim 1994) (5).

(2) [TP past [λwp PFV/IMPF [ModP can [VP Sam watch Saturn ] ] ] ]
(3) a. [[[IMPF]]] w,f,g,e = P<sv,ω>λt,τ; ∀w′eMax<sv> (Bωτ); ∀ew′ τ(e) ≈ t: P(w′)(e)
   b. [[[PFV]]] w,f,g,e = λP<sv,ω>λt,τ. ∃e [e in w & τ(e)⊆ t & P(e)]

(4) [[can]] w,f,g,e = λP<sv,ω>λe,τ. ∃w′e ∈ Best(g(w)) ∩ f(w): P(e)(w′)
(5) [[past]] w,f,g,e = defined iff c provides time t <t, if defined = t

In the case of a root modal with imperfective, the vP event gets anchored to the worlds provided by the generic operator GEN from the imperfective, which “removes” the AE (Bhatt 1999). With imperfective, the vP event gets anchored to the worlds provided by GEN (following Bhatt 1999). The meaning obtained is that ‘in all representative worlds w1 accessible from w0, all (past) events e1 in w1 are such that in some accessible world w2 compatible with the circumstances in w1, e1 is a Sam-watching-Saturn event in w2.’ The AE ends up being about events occurring in the worlds provided by GEN, which may not include the actual world. In the case of a root modal with perfective, Aspect (being outside of the scope of the root modal), anchors the vP event to w0. With perfective, Aspect, being outside of the scope of the modal, anchors the vP event to w0. The meaning obtained is that ‘there is an event e1 in w0, located in a past interval, such that in some world w1 accessible from w0, e1 is an event of Saturn-watching by Sam in w1.’ To obtain that the event is a Saturn-watching event in w0, Hacquard postulates a principle, Preservation of Event Description across worlds, which states that all else equal, the same event maintains its description in all worlds in which it occurs (for discussion, see Portner 2009, Falauls & Laca 2020).

A3. Kratzer’s Prospective aspect analysis

Kratzer (2011) assumes a different structure for modal sentences, where both epistemic and root modals take complements which contain their own viewpoint aspect (6). In her account, there is no structural difference between epistemic and root modals (Tense > Mod > Asp) (AEs cannot occur with epistemic modals because of a difference in their Modal Base). (7)a, (7)b and (8) give denotations for prospective, perfective and root modals, respectively. For Kratzer, two kinds of aspects can appear in the infinitival complement: perfective or prospective. Prospective locates the event in some future time interval (7)a and, following Matthewson (2012), is responsible for the future-orientation often associated with root modals. Perfective locates the event time within the reference time (7)b. It allows AEs to occur, by forcing the event to be part of the circumstances which match exactly those of the world of evaluation. For Kratzer, AEs arise when the circumstances of an individual perfectly match the ones of its counterpart (when they share all their ‘intrinsic properties’) (Lewis 1968). With prospective, Sam’s counterpart is only asserted to have the potential to do something after the reference time, which does not entail that she does it. With perfective, the meaning we obtain is that ‘there exists a counterpart of Sam who lives in a world very much like ours, whose circumstances yesterday exactly matched those of Sam yesterday, and who watched a counterpart of Saturn yesterday’, from which an actual Saturn-watching event by Sam is inferred.

(6) [TP Past [Sam can [AspectP perfective/prospective [VP watch Saturn] ] ] ]
(7) a. [[[prospective]]] = λP λt ∃e [P(e) & e ≤ future]
    b. [[[perfective]]] = λP λt ∃e [P(e) & e ≤ t]
(8) [[can]] = λR λx λt ∃x′ [x′, t′] ∈ f(t,x,τ) & R(x′)(t′) (Kratzer 2011)
A3. Homer’s aspectual coercion

For Homer (2011, 2021), AEs result from a certain type of aspectual coercion, which he names actualistic. Homer assumes that root modals are stative predicates, therefore incompatible with the perfective, because of the Boundedness Requirement (Mari & Marti 2007) (see section 2.3). A specific coercion operator, ACT, leads to actuality interpretations.

Homer assumes the structure in (9). For past perfective modal sentences like (9)b (“Sam a pu regarder Saturne”). Each clause has a Viewpoint aspect head Asp, located below Tense and above vP. A perfect head can intervene between Tense and Aspect. Denotation for perfect, PFV, root modals and ACT are given in (10), (11), (12) and (13), respectively. The (covert) aspectual coercion operator ACT intervenes between the aspectual head and the vP. It takes two <v,t> arguments: the value of the first one is fixed by the utterance context, and corresponds to the property entailed; the second one is provided by the vP. The value of P6 is determined by the modal’s complement: here, Sam watch Saturn. The perfective locates the eventuality of Sam watching Saturn in the topic interval in the actual world: it is asserted that a state of Sam being able to watch Saturn existed in the actual world, and its running time overlaps the topic time. The meaning of (9)b is thus ‘only defined if s(P6) is fixed by the utterance context; if defined, (9)b is true iff there is a past interval t’ such that there is an eventuality e of s(P6) in w in t’ such that no proper part of e is an eventuality of s(P6), and there is a state of Sam being able to cross the bridge in w whose runtime overlaps with t’.

(9) [TP PRS [PerfP Perf [AspP PFV [ACT P6 [vP pouvoir [CP [vP Sam regarder Saturne]]]]]]]

(10) \[[PFV]^{c,w,t} = \lambda P_{\alpha,\nu,\varphi}. \exists e_{\nu}: \Pi [I(e) \subseteq t]\]

(11) \[[Perf]^{c,w,t} = \lambda P_{\alpha,\nu,\varphi}. \exists t': t' < t \land p(t') \]

(12) \[[[pouvoir_{root}]]^{c,w,t} = \lambda \Phi_{\alpha,\nu,\varphi}. \exists e : wIAcc(e): \Phi(w') \]

(13) \[[[ACT]]^{c,w,t} = \lambda P_{\alpha,\nu,\varphi}. \lambda Q_{\alpha,\nu,\varphi}. \lambda e_{\nu}. P_{\Phi}(e) \land \exists e''_{\nu}: Q(e'') \land C([\exists e_{\nu}: P_{\Phi}(e_{\nu}) \land \tau(e_{\nu}) \subseteq t] \leftrightarrow \Omega) \]

Homer argues that ACT is not specific to modals: for instance, it also explains the entailment that the house was bought in “La maison a coûté 100 000 €” (‘The house cost 100,000’) (Homer, 2019: 78a). According to Homer, the value of the entailed event is partially determined by context. For those non-modal predicates where ACT is also taken to intervene, like cost, he suggests that it depends on the presupposition of the stative (coûter presupposes that the house can be bought). But as he discusses, this doesn’t capture the facts with modals, since modals don’t presuppose their complement.