

On capacities and their epistemic extensions

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The goal of this talk is to discuss the semantic properties of the Catalan modal *ser capaç* (and its Spanish counterpart *ser capaz*) ‘be able/capable’, which participates in both generic abilities and action dependent abilities (Mari & Martin 2007), but which doesn't have the same distribution as English ‘be able’. Our main claim is that the force of this modal is slight possibility, rather than human possibility. We also argue that an implicature arises according to which the event described by the complement VP is a daring event. We show that, along with other modals *ser capaç* exhibits an ambiguity between root (abilitative) and epistemic interpretations, and provide an analysis along the lines of Hacquard 2010, which reconciles Kratzer's semantics with Cinque's syntax.

This previously unexplored modal shows an interesting dual behavior in that it has both abilitative, (1a), and epistemic interpretations, (1b).

(1) En Joan és capaç de buidar la nevera. ‘John is capable of emptying the fridge.’

a. John has the ability of emptying the fridge & this is quite an achievement.

b. It is possible that John empties the fridge & this is something daring/ audacious/ unusual.

The differences between the two readings informally paraphrased in (1a,b) can be empirically tested. First, the abilitative (1a) but not the epistemic (1b) is found in *ser capaç* in perfective aspect, (2). And only the epistemic is compatible with perfective and progressive aspects of the embedded verb, (3).

(2) En Joan va ser capaç de buidar la nevera. ‘John was capable of emptying the fridge.’

John had the ability of emptying the fridge vs.

It was possible that John empties the fridge.

(3) En Joan és capaç d'haver buidat/estar buidant la nevera.

‘(lit.) John is capable of having emptied/being emptying the fridge.’

It is possible that John has emptied/is emptying the fridge vs.

John has the ability of having emptied/being emptying the fridge.

Second, only the epistemic licenses the modifier *qualsevol dia d'aquests* ‘one of these days’ when *ser capaç* is inflected in present tense, (4). If it is inflected in the future, only the abilitative works, (5).

(4) En Joan és capaç de buidar la nevera qualsevol dia d'aquests.

It is possible that John empties the fridge one of these days vs.

John has the ability of emptying the fridge one of these days.

(5) En Joan serà capaç de buidar la nevera qualsevol dia d'aquests

John will have the ability of emptying the fridge one of these days vs.

It will be possible that John empties the fridge one of these days.

Third, the position of negation correlates with each one of the readings: *ser capaç* + negation yields an epistemic interpretation, (6), but negation + *ser capaç* yields an abilitative one, (7).

(6) En Joan és capaç de no fer els deures. ‘(lit.) John is capable of not doing his homework.’

It is possible that John doesn't do his homework vs.

John has the ability of not doing his homework.

(7) En Joan no és capaç de fer els deures. ‘John is not capable of doing his homework.’

John doesn't have the ability of doing his homework vs.

It is not possible that John does his homework.

We argue that *ser capaç p* denotes a slight possibility, in Kratzer's 1981/1991 terms. That is, there is only a world compatible with the conversational background *f* where *p* holds (and in the rest of the worlds compatible with *f* and a stereotypical ordering source, *p* is not the case), (8).

(8) $[[\text{ser capaç}]]^{w,f,g}(p) = 1$ iff $\exists w' \in \bigcap f(w): p(w') = 1$ and $\forall w'' \in \text{BEST}_{g(w)} \bigcap f(w): p(w'') = 0$

We propose that the two readings in (1) are the result of semantic change, which is in line with the pattern according to which epistemic modals tend to develop from root modals (Hacquard 2011 and references

therein). *Ser capaç* starts out as having a modal base restricted to worlds where people have abilities to do things and where people are aware of these abilities (Giannakidou 2001), and has evolved into also allowing for a modal base that contains what is known about these abilities.

Abilitatives involve an effort inference analogous to the one conveyed by implicative verbs like *manage* (Bhatt 1999). This meaning component surfaces in the pragmatically odd sentence # *John is able to breathe*. Hacquard 2009 derives this inference as a conversational implicature. Specifically, if there is a world where *p* holds, then there are accessible worlds where John has the abilities that he has and yet *p* is not the case. Not breathing doesn't seem likely, but any other non-trivial eventuality can do. We argue that the daring component in *ser capaç* can be derived in a similar way, the basic difference being that *ser capaç* is weaker than *be able* and, consequently, the effort component is stronger. In particular, if there is only one world where *p* holds and $\neg p$ is the norm, then *p* is interpreted as something unexpected, daring or unusual. Since we relate the strength of the modal with the flavor of the implicature, it follows that when *ser capaç* is intensified with the adverb *ben* ('well'), then instead of yielding a slight possibility, human possibility obtains, and the daring component turns into plain effort. In a scenario where Pau is a regular teenager, (9) would be odd without the modifier *ben*, because reading a novel by Tolstoy is not a daring activity, but something that simply requires an effort.

(9) En Pau és #(ben) capaç de llegir una novel·la de Tolstoi.
'Pau is well capable of reading a novel by Tolstoy.'

The contrast in the interpretation of (2)-(7) follows straightforwardly from what we know about the syntactic position of root vs. epistemic modals and the locus of aspect (Cinque 1999, Hacquard 2010). While root modals (which include abilitatives) sit below AspP, (10), epistemic modals sit above AspP, (11). It follows that the epistemic readings can combine with perfective aspect but abilitative interpretations are ruled out, (3). The time anchoring of roots is VP's time, so tense in (2) provides the time in which John empties the fridge. The time anchoring in epistemics is the speech time. Unlike *may* or *can*, *ser capaç* is inflected for tense, so we propose that ModP in (11) merges between TP and AspP.

(10) En Joan va ser capaç de buidar la nevera (cf. (2))

a. [_{TP} va ser_i [_{AspP} t_i [_{ModP} capaç [_{VP} John empty the fridge]]]]

b. There is an event in the actual world located in a past interval, and there is a world *w'* compatible with the abilities of the VP subject in the actual world where this event is an event of emptying the fridge by John (and for all worlds *w''* compatible with John's abilities and a stereotypical ordering source, John doesn't empty the fridge in *w''*).

(11) En Joan és capaç d'haver buidat la nevera (cf. (3))

a. [_{TP} és [_{ModP} capaç [_{AspP} haver [_{VP} John empty the fridge]]]]

b. There is a world *w'* compatible with what is known in the actual world about the abilities of the VP subject such that there is an event in *w'* located at a past interval which is an event of emptying the fridge by John (and for all worlds *w''* compatible with what we know about John's abilities and a stereotypical ordering source, John doesn't empty the fridge in *w''*).

Concerning (4), since the sentence describes an event of emptying the fridge which is located in the present tense, and the adverbial is a temporal modifier that locates the event in the future, there is a clash. It is corrected in (5), where *ser capaç* is inflected for future tense. (4) is not problematic in the epistemic reading, because present tense identifies the speech event, so no incompatibility arises if the VP event is a future event. As for negation, we assume a structure where NegP lies right above AspP, so the facts in (6) and (7) follow straightforwardly.

References

Bhatt, R.: 1999, Ability modals and their actuality entailments, in K. Shahin, S. Blake and E.-S. Kim (eds), WCCFL 17 Proceedings, Vol. 17, pp. 74–87. **Cinque, G.: 1999**, Adverbs and functional heads: A crosslinguistic perspective. **Giannakidou, A.: 2001**, The meaning of free choice, *Linguistics & Philosophy* 24(6), 659–735. **Hacquard, V.: 2009**, On the interaction of aspect and modal auxiliaries, *Linguistics & Philosophy* 32(3), 279–315. **Hacquard, V.: 2010**, On the event relativity of modal auxiliaries, *Natural Language Semantics* 18(1), 79–114. **Hacquard, V.: 2011**, Modality, in K. von Stechow, C. Maienborn and P. Portner (eds), *Semantics: An international handbook of natural language meaning*, Berlin: Mouton de Gruyter, pp. 1484–1515. **Kratzer, A.: 1981**, The notional category of modality, *Words, Worlds, and Contexts* pp. 38–74. **Kratzer, A.: 1991**, Modality, *Semantik: Ein Internationales Handbuch Zeitgenössischer Forschung*. **Mari, A. and Martin, F.: 2007**, Tense, abilities and actuality entailment, *Proceedings of the Sixteenth Amsterdam Colloquium*, pp. 151–156.