Circumstantial Modality, Aspect and Negation in Mundurukú

The expression of circumstantial modality in Mundurukú, a Tupían language spoken in the Amazon basin, is distributed over a variety of grammatical domains, and implicates negation and aspect in a unique way. Example (1)a. and b. are two possible responses a speaker would have regarding their inability to hunt given the rainy circumstances: (1)a. is a response with the negated circumstantial modal put-'um, and (1)b. with the adjectival predicate pa'ore 'is difficult'. In (1)c. the speaker asserts their ability to hunt with the modal verb put. The core claim of this paper is that the distinction between (1)a. and b. is fundamentally aspectual: put has been previously analyzed as a circumstantial modal verb (Crofts 1985), however, we provide evidence that put is more amenable to being analyzed as the progressive aspect that has a modal interpretation. In (1)a., the hunter was hunting a tapir in the forest when it began to rain, and thus he was unable to continue his hunting activity. On the other hand, the adjective pa'ore, is analyzed as an event predicate, which reflects the fact that event in (1)b. has no internal temporal structure: the hunter was simply unable to hunt (because of the rain) and no hunting event took place.

The main focus of this paper is to examine how an aspectual treatment of circumstantial modality interacts with the semantics of negation. Mundurukú presents a challenging case as it has four strategies for negating a circumstantial modal, each associated with different meanings. To build the picture from the ground up: as in many languages, circumstantial modality in Mundurukú can be expressed through an unmodalized sentence, such as (2)b., where the predicate is marked with the imperfective suffix –m (in contrast to the perfective in (2)a.). Thus, (2)b. is ambiguous between an imperfective meaning, and the individual-level, stative ability reading which means the speaker is trained in the skills of hunting. In (2)c. the circumstantial verb put represents a stage-level, progressive reading: the speaker is proceeding with, or perhaps in the middle of the hunting activity. We first claim this contrast is captured by a progressive treatment of the modal put (Dowty 1979; Landman 1992; Kratzer 1991). Following Portner (1998) and Hacquard (2006:87), the formula in (3) defines the progressive as the function PROG, which takes an event e and a predicate of events P, and yields a true sentence if all of the circumstantially accessible worlds (not including the ordering source) have a larger event e’ (which includes e as a subpart) with property P. The circumstantially accessible worlds will be those in which the circumstances of the base world relevant for the completion of the event hold: the speaker's hunting skills, a spear, the intent to hunt and capture an animal, the weather conditions, etc. However, if, in the actual world, the spear breaks or it starts raining, the sentence will be true, even if, in reality, the hunter did not complete the event.

The question turns to how negation interacts with the semantics in (3). Mundurukú has two types of negation: in (4)a., the suffix 'um negates the individual-level ability to hunt (the speaker is untrained in hunting), while in (4)b., the negative particle nu introduces control: the speaker can't hunt – not because of outside forces or inability, but because they wish not to. We focus on (4)c.: when 'um is attached to the modal/progressive put (4)c., where the hunting activity in progress was interrupted because of outside force (or non-control). Assuming 'um is a negation operator, the interpretation we need is one that still allows the progressive activity but negates the ability to carry it out. This is achieved by negation taking scope over the modal base (¬∃w' [w' ∈ CIRC(e, P)]) and not ¬PROG.

The alternative strategy for conveying inability is pa'ore in (5)a. However, the pa'ore involves a different temporal structure from put: although translated as “my hunting is difficult”, speakers report that, although they may have the ability to hunt, no hunting event can take place because of some external factor (i.e. rain). We achieve this by analyzing pa'ore, not as a negation operator, but as an independent circumstantial modal that has lexicalized a negated event argument, as given in (6)a. (Davidson 1967; Kratzer 1996). Because pa'ore is a bona fide modal verb, 'um negation can attach, as in (5)b. This yields a double negation of the event argument: “my hunting is not impossible”, or, “I can hunt”, as in (6)b. (5)b contrasts with (2)c. in that (5)b. describes an event where a person has the ability to hunt, such as making a decision upon observing favourable weather conditions; whereas (2)c. describes the activity of hunting.

These analyses are supported by primary language data, and also include an examination of the potential actuality entailments and implicatures found in the negation of circumstantial modals, the issue of control, the pragmatic uses, and the role morphosyntax plays in deriving these alternations.
(1) a. ŏn tak je-orok ojuy ojuy kapusu, imenpit we-orok put-'um ojuy.  
1sg also COREF.POSS-hunt IRR. AUX yesterday, but 1sg.POSS-hunt CIRCUM-NEG AUX
“I also wanted to hunted yesterday, but I couldn't hunt (because of the rain).”

b. ŏn tak je-orok ojuy ojuy kapusu, imenpit we-orok pa'ore ojuy.  
1sg also COREF.POSS-hunt IRR. 1sg-AUX yesterday, but 1sg.POSS-hunt is.difficult AUX
“I also wanted to hunted yesterday, but I couldn't hunt (because of the rain).”

c. ṣasu bit we-orok put  
today CONTR. 1sg.POSS-hunt CIRCUM  
“But today I can hunt.”

(2) a. ŏn o-ce-orok  b. je-orok-m ŏn c. we-orok put  
1sg 1sg-COREF.POSS-hunt COREF.POSS-hunt-IMPF 1sg 1sg.POSS-hunt CIRCUM
“I hunted” “I hunt” “I can hunt”
(CIRCUMSTANTIAL) (lit. “My hunting is possible”)

(3) PROG(e, P) is true at w iff ∃w' [w' ∈ CIRC(e, P)] : ∃e' which includes e as a non-final subpart such that P(w')(e') is true.

(4) a. o-ce-orok-'um b. o-ce-orok yu c. we-orok put-'um  
1sg-COREF.POSS-hunt-NEG 1sg-COREF.POSS-hunt NEG 1sg.POSS-hunt CIRCUM-NEG
“I didn't/can't hunt” “I didn't/can't hunt” “I don't/can't hunt”
(control) (lit. “My hunting is impossible”) (no-control)

(5) a. we-orok pa'ore  b. we-orok pa'ore-'um-ma  
1sg.POSS-hunt is.impossible 1sg.POSS-hunt is.impossible-NEG-EMPH
“I can't hunt” (lit. “My hunting is impossible.”) “I can hunt” (lit. “My hunting isn't difficult.”)

(6) a. ¬∃e. ∃w'[w' ∈ CIRC(w) → p(e)(w')]
   b. ¬¬∃e. ∃w'[w' ∈ CIRC(w) → p(e)(w')]