Two faces of inchoativity in Wari': A study of the aspectual markers *wra* and *pin*

Proposal: This project expands on previous descriptions of Wari''s Tense-Aspect-Modality (TAM) system by providing a semantic analysis of two markers, *wra* and *pin*, previously described as marking a 'preceding event', and as a perfective marker respectively (Apontes 2015). Using original data we analyze *wra* as conveying ingressive/inchoative aspect and *pin* as conveying egressive aspect. Interestingly, both markers permit inchoative readings, though in different environments, which is accounted for in our analysis. Our data was collected via translation tasks in both directions, acceptability judgement tasks, and elicited production tasks (Bochnak & Matthewson 2015, 2020). The data come from multiple speakers of the Oro Waram Xijein, Oro Nao', and Oro At linguistic varieties. Our consultants are bilingual speakers of Wari' and Portuguese and work as Wari' language teachers in schools within their respective communities.

Wari' is an isolating language with a rigid sequence of several inflectional particles (Everett & Kern 1997; Apontes 2015). Clauses are predicate-initial, incorporating a mandatory inflectional particle that marks the grammatical subject and object of the predicate, followed by optionally expressed nominal arguments, establishing VOS as the basic word order. Wari' permits clauses unmarked for TAM; unmarked sentences of any Aktionsart can have past or present temporal reference, while future reference requires overt prospective marking. Unmarked instantaneous achievement predicates have past perfective reference by default, while unmarked clauses of other Aktionsarten may be interpreted as past perfective or present imperfective. This paper takes these facts as evidence that *wra* and *pin* do not mark past tense or perfective aspect.

Following a Neo-Reichenbachian approach (Klein 1994), we distinguish two temporal relations: Topic Time (TT) relative to Utterance Time (UT), which determines temporal reference, and TT relative to Event Time (ET), which determines aspectual reference. In this framework, tense is the grammatical expression of temporal reference, while viewpoint aspect encodes aspectual reference. We further relate parts of event times to topic times and propose that *wra* locates the beginning of an event before TT ($ET_{begin} < TT$) while *pin* locates a post-state before the right boundary of TT ($ET_{post\text{-}state} < TT_{end}$). These two markers can appear independently or co-occur within a single clause. Notably, they do not relate TT to UT, indicating that they encode aspect rather than tense.

Data: Example (1) shows *wra* used with past temporal reference, resulting in the assertion that Awo started building the house before TT, which is constrained by the adverbial clause *ka pe taɲ aldeia* 'when I was in the village'. In (2), the use of *pin* results in the assertion that Awo finished building the house within TT. (3) shows a sentence with both *wra* and *pin*, yielding the interpretation that Awo started and finished building the house before the speaker's arrival; that is, both the beginning and the end of the building event are located before TT. (4) shows the same sentence with future temporal reference, demonstrating that *wra* and *pin* do not encode tense because they can be used with multiple temporal references.

(1)

wra	*ara*	*na-ɲ*	*trim*	*Awo*	[*paɲ*	*ka*	*pe*	*ta-ɲ*	*aldeia*]
wra	make	3-3n	house	Awo	3N	COMP	be	1SG-3N	village

'Awo had started building the house when I was in the village.'

(2) Context: I saw Awo finish building the house.

ara	***pin***	*na-ɲ*	*trim*	*Awo*	[*paɲ*	*ka*	*pe*	*ta-ɲ*	*aldeia*]
make	pin	3-3N	house	Awo	3N	COMP	be	1SG-3N	village

'Awo finished building the house when I was in the village.'

(3) ***wra*** *ara* ***pin*** *na-ɲ* *trim* *Awo* [*paɲ* *ka* *pe* *ta-ɲ* *aldeia*]
wra make pin 3-3N house Awo 3N COMP be 1SG-3N village
'Awo had already built the house when I was in the village.'
Consultant comments: Awo started and finished building before I arrived in the village.

(4) *mo taʔ pe pin ta-ɲ aldeia // **wra** ara **pin** ta-ɲ trim na Awo*
COND be pin 1SG-3N village wra make pin PROSP.SG-3N house 3 Awo
'When I am in the village, Awo will have already built the house.'

When *pin* is used with stative predicates, the resulting interpretation is inchoative, shown in (5) with *kati* 'sick'. Additionally, among a minority of speakers, *pin* yields an inchoative reading with activity predicates as well (6). To account for these inchoative readings as well as the terminative readings in (2) and (6), we propose that *pin* locates the post-state of an event before or within TT. Thus, *pin* requires a change of state to obtain, leading to the inchoative reading with stative predicates. Activities may be coerced into a change-of-state predicate, which results in an inchoative reading, or not, leading to a terminative reading. Achievements and accomplishments already denote changes of state, explaining why they only permit terminative readings (Rothstein 2008). In the case of (6), to obtain an inchoative reading, the predicate *pan* 'rain' is coerced to mean 'go from a state of not raining to a state of raining'. With the terminative reading, the change of state is from raining to not raining.

(5) *kati* ***pin*** *na* *oromiyak*
sick pin 3 dog
'The dog is now sick.' (It just became sick.)

(6) *pain xek pane pan* ***pin*** *na* *xowi'*
yesterday fall pin 3 rain
'It finished raining yesterday. / It started raining yesterday.'

Analysis: *Pin* is a function from predicates of events to predicates of times, of type ⟨⟨*v*, *t*⟩, ⟨*i*, ⟨*v*, *t*⟩⟩⟩. The denotation of *pin* is given in (7), using Dowty's (1979) BECOME operator, which applies to the predicate P and it says that a BECOME(P) eventuality is located before the right boundary of TT. When *wra* occurs with *pin*, it is of type ⟨⟨*i*, ⟨*v*, *t*⟩⟩, ⟨⟨*i*, ⟨*v*, *t*⟩⟩⟩, and its denotation is given in (8). *Wra* locates the left boundary of an event's runtime before TT. When *wra* occurs without *pin* it needs to type-shift to ⟨⟨*v, t*⟩, ⟨*i*, ⟨*v*, *t*⟩⟩⟩ to take an argument of type ⟨*v, t*⟩, (9).

(7) $[\![pin]\!] = \lambda P_{\langle v,t\rangle}.\lambda t_c.\lambda e[(\text{BECOME}(P))(e) \wedge \underline{\tau(e) < \text{RB}(t_c)}]]$

(8) $[\![wra]\!] = \lambda P_{\langle\langle i,\langle v,t\rangle\rangle}\lambda t_c\lambda e.[P(e) \wedge \underline{\text{LB}(\tau(e)) < t_c}]$

(9) $[\![wra]\!] = \lambda P_{\langle v,t\rangle}\lambda t_c\lambda e.[P(e) \wedge \underline{\text{LB}(\tau(e)) < t_c}]$

Conclusion: With this project we aim at providing a more in-depth understanding of Wari''s TAM system by contributing the first detailed, fine-grained analysis of two of its particles. While both *wra* and *pin* induce inchoative readings in some contexts, they have significantly different semantics overall, making Wari' typologically interesting for the study of TAM cross-linguistically. The Neo-Reichenbachian model has proven to be a satisfactory theoretical framework for explaining the data of Wari' so far. However, further research and analysis of additional particles are necessary to achieve a comprehensive understanding of Wari''s entire TAM system.

References

Apontes, Selmo Azevedo. 2015. *Descrição gramatical do Oro Waram, variante Wari' norte (Pakaa Nova, Txapakura): fonologia, morfologia e sintaxe*. Belo Horizonte, Brazil: Faculdade de Letras da UFMG.

Bochnak, M. Ryan & Lisa Matthewson (eds.). 2015. *Methodologies in semantic fieldwork*. Oxford ; New York: Oxford University Press.

Bochnak, M. Ryan & Lisa Matthewson. 2020. Techniques in Complex Semantic Fieldwork. *Annual Review of Linguistics* 6(1). 261–283.

Dowty, D., 1979. Word Meaning in Montague Grammar. Reidel, Dordrecht.

Everett, Daniel L. & Barbara Kern. 1997. *Wari'*: The Pacaas Novos Language of Western Brazil. London: Routledge.

Klein, Wolfgang. 1994. *Time in language* (Germanic Linguistics). London ; New York: Routledge.

Rothstein, Susan Deborah. 2008. *Structuring Events: A Study in the Semantics of Aspect* (Explorations in Semantics v. 5). Hoboken: Wiley.