

Initial Stages of Events: The Atayal Unmarked Predicates

Sihwei Chen

1. Introduction

This paper addresses the aspectual properties of unmarked predicates in Atayal, one of the Austronesian languages spoken in northern Taiwan. Unmarked predicates are predicates that are only marked with a voice affix, without any aspect marker, and they have been characterized in the literature as temporally and aspectually neutral for the reason that the event that unmarked predicates denote can be interpreted as past episodic, present progressive, or past/present habitual (Huang 1993, Zeitoun et al. 1996), as exemplified in (1):

- (1) m-ihiy=ku' laqi'.
AV-beat=1S.ABS child
'I beat (past) a child.' / 'I am beating a child.' / 'I (usually) beat child(ren).'
- (Wulai Squliq, Zeitoun et al. 1996: 24; morpheme glosses modified)

I focus on the episodic reading of the Atayal unmarked predicates in this paper. I will show that the episodic reading is neither perfective nor imperfective, but varies depending on lexical aspect. I argue that unmarked predicates share a uniform aspectual interpretation: The described event must begin but needs not complete and may continue. I propose that every sentence of unmarked predicates in Atayal possesses a phonologically covert aspect; the aspect requires that the initial stage of an event is included in the reference time, allowing for further development of the event.

The rest of the paper is organized as follows. Section 2 examines initial and final points of events denoted by four lexical aspectual classes. Section 3 points out that the aspectual properties cannot be fully captured by either perfective or imperfective aspect. Section 4 reviews Smith's (1991/1997) neutral aspect, which parallels the Atayal case; I also show that Atayal unmarked predicates exhibit the so-called Imperfective Paradox, which calls for an intensional semantics of neutral aspect. For this, I review Altshuler's (2014) analysis of the Russian imperfective, and discuss its difference from the Atayal unmarked forms. Drawing on ideas of Smith's neutral aspect and Altshuler's imperfective aspect, Section 5 gives my proposal for unmarked predicates. Section 6 discusses potential alternatives, which I ultimately reject. Section 7 concludes the paper.

2. Interaction with lexical aspect

This section presents the result of applying sophistic diagnostics for eventuality (cf. Smith 1991; Bar-el 2005) to unmarked eventive predicates, including activities, accomplishments, achievements and inchoative states.

* Sihwei Chen, University of British Columbia, sw.chen@alumni.ubc.ca. I am deeply grateful for countless effort that my Atayal consultants have put into teaching me the Atayal language and their generosity and patience. I would like to thank Lisa Matthewson and Hotze Rullmann for guiding me along the way. This paper has benefited a lot from comments that I received at WCCFL 34. All remaining errors are my own.

2.1. Unmarked activities and accomplishments begin but need not stop/culminate

Unmarked activity events can be conjoined with an assertion that the event continues without introducing infelicity, as shown in (2); also, the final point of the activity event can be cancelled, as shown in (3).

- (2) m-ngilis qu tali' ru ki'a cyuw m-ngilis na'.¹
 AV-cry ABS Tali' CONJ may PROG.DIST AV-cry still
 'Tali cried, and he may be still crying.'
- (3) m-ngilis qu tali' ru nyuw ini' hawh na'.
 AV-cry ABS Tali' CONJ PROG.PROX NEG give.up.AV yet
 'Tali' cried, and he hasn't stopped it yet (lit. he hasn't given up crying).'

Similar facts are observed for accomplishments. Their unmarked uses are compatible with an assertion that the event is not culminated, as shown in (4), and one that the event is continued, as shown in (5):

- (4) kblay-un ni watan sa kawas wayal ga ini' t<m>asuq na'.
 make-PV ERG Watan LOC year past TOP NEG finish<AV> still
 'Watan built the house last year, but he didn't finish (building) it yet.'
- (5) kblay-un na yutas qutux lubuw ru cyuw kblay-un na'.
 make-PV ERG grandpa one harmonic CONJ PROG.DIST make-PV still
 'Grandpa made a harmonic, and he is still making it.'

These suggest that the two lexical classes in their unmarked forms behave similarly in not entailing final points, i.e., termination points for activities and culmination points for accomplishments. Note that non-culmination effects appear to be similar to being able to continue, but I distinguish them because the two criteria do not always coincide in languages; for example, non-culminating accomplishments can be cancelled but cannot continue in Hindi (Singh 1998) and Thai (Koenig and Muansuwan 2000).

By contrast, as shown by inceptive readings induced by punctual clauses in (6-7), initial points of events are encoded for events of both classes:

- (6) kt-an=maku' hya' lga, m-ngilis hya' la. (Activity)
 see-LV=1S.ERG 3S.N PRT.TOP AV-cry 3S.N PRT
 'When I saw him, he cried.'
 Consultant's comment: "He started to cry just at the moment when you saw him."
- (7) tayhuk qu tali' ga, kblay-un=naha qu ngasal la. (Accomplishment)
 arrive.AV ABS Tali' TOP make-PV=3P.ERG ABS house PRT
 'When Tali' arrived, they built the house.'
 Researcher: "Is that they waited for Tali' and only started to build the house when he came?"
 Consultant: "That's correct!"

2.2. Unmarked achievements culminate

There are two classes of predicates, those whose culmination can be cancelled in the unmarked aspect, as shown above, and those which can't. Since the latter class includes predicates typically analyzed as achievements, I analyze them all as achievements which are telic and entail culmination. The evidence that unmarked achievements entail culmination is given in (8-9), where the dying event and the stealing event are incompatible with an assertion of non-completion.

¹ Abbreviations: 1 = first person; 3 = third person; ABS = absolutive; AV = actor voice; CONJ = conjunction; DIST = distal; ERG = ergative; GEN = genitive; LOC = locative; LV = locative voice; N = Neuter; NEG = negation; P = plural; PFV = perfective; PRF = perfect; PRT = particle; PROG = progressive; PROX = proximal; PV = patient voice; OBL = oblique; S = singular; STA = stative; TOP = topic.

- (8) # m-huqil qu mlikuy=nya' la, ulung ini' huqil.
 AV-die ABS man=3S.GEN PRT fortunately NEG die.AV
 Intended for 'Her husband died, but fortunately he didn't die.'
- (9) # qriq-un=nya' qwaw ni temu' shira' ga wal ini' thuzyay.
 steal-PV=3S.ERG wine GEN Temu' yesterday TOP PRF.PFV NEG succeed
 Intended for 'He stole Temu's wine yesterday but didn't succeed.'
 Consultant's comment: "Contradictory! *qriq-un=nya' qwaw ni temu' shira'* says he did it. You can't add the second part."

If modified by a punctual clause, the event described by an achievement can occur right at or after the time of the punctual clause:

- (10) m-wah=saku' lga, m-huqilhya' la.
 AV-come=1S.ABS PRT.TOP AV-die 3SN PRT
 'When I came, he died.'

This reading, however, is not simply inceptive but instantaneous, as the punctual clause doesn't pick out the initial point of the event denoted by the achievement but the entire event. This is expected given that achievements are not durative. I conclude that unmarked achievements entail culmination, with both initial and final points coinciding, in which respect they contrast with both accomplishments and activities shown above.

2.3. Unmarked inchoative states realize

Stative verbs are ambiguous between inchoative states and homogeneous states in Atayal. For instance, the verb *mbka'* 'be/get broken' can obtain an inceptive reading in (11) or a progressive reading in (12). Note that inceptive readings preferably require the final particle *la*.²

- (11) m-bka' qu tubung sa m-zyup=saku' blihun la. (Inchoative state)
 AV-broken ABS window LOC AV-enter=1S.ABS door PRT
 'The window got broken when I entered the door.'
- (12) m-bka' qu tubung sa m-zyup=saku' blihun. (Homogeneous state)
 AV-broken ABS window LOC AV-enter=1S.ABS door
 'The window was broken when I entered the door.'

Unmarked inchoative states behave like unmarked achievements in entailing culmination. Trying to cancel the completion of initial change of state in inchoative states results in infelicity:

- (13) Context: *Yayut eats a lot. She's getting fat but fortunately she hasn't gotten fat (her size is okay).*
 # (awbih) qthuy qu yayut lga ini' k-qthuy la.
 almost fat.AV ABS Yayut PRT.TOP NEG STA-fat.AV PRT
 Intended for 'Yayut almost got fat but she didn't get fat/is not fat.'

Table 1 summarizes the aspectual properties of eventualities in unmarked forms. Regarding initial points, except homogeneous states, all the lexical classes in unmarked forms have inceptive readings when modified by punctual clauses (this includes instantaneous readings with achievements and inchoative readings with inchoative states). Regarding final points, which I refer to as the last point of the event rather than a telic point, activities and accomplishments only bear an implicature, and the event described by both predicates can be continued. Whereas achievements span a very short time

² Since I have not investigated conditions on the presence/absence of *la*, I have to leave aside the issue whether to attribute states' inchoativity to *la*. See Gorbunova's (2015) proposal that *la* is a discontinuative/iimitive marker, which locates the focus time after (or at) some change-point.

such that initial and final points may coincide and are entailed in the unmarked aspect, and similarly inchoative states have an initial change of state realized.

Table 1. Eventuality in unmarked forms

	inceptive readings w/ punctual clause	failure to terminate/culminate	ability to continue
Activities	√	√	√
Accomplishments	√	√	√
Achievements	√ (instantaneous)	*	n.a.
Inchoative states	√ (inchoative)	*	n.a.

3. Problems with (im)perfectivity

The aspectual properties of unmarked predicates cannot be properly characterized by either perfective or imperfective aspect. Perfective and imperfective aspect are standardly analyzed as reversing the containment relation between the event time and the reference time (Kratzer 1998): As shown in (14), perfective aspect arises when the event time is included in the reference time, whereas imperfective aspect arises when the reference time is included in the event time.

(14) Perfective vs. imperfective in Kratzer (1998)

a. Perfective: Event time included in reference time
 $\lambda P_{\langle l, st \rangle}. \lambda t_i. \lambda w_s. \exists e_1 [\tau(e) \subseteq t \ \& \ P(e)(w) = 1]$

b. Imperfective: Reference time included in event time
 $\lambda P_{\langle l, st \rangle}. \lambda t_i. \lambda w_s. \exists e_1 [t \subseteq \tau(e) \ \& \ P(e)(w) = 1]$

Unlike perfective, which delineates final points of an event, unmarked activities can continue and unmarked accomplishments do not have to culminate. Unlike imperfective, which leaves initial and final points open, unmarked eventives have an inceptive reading, and unmarked achievements and inchoatives culminate (rather than being coerced).

4. Neutral aspect and the ‘Imperfective Paradox’

Smith (1991/1997) proposes a viewpoint aspect that is neither imperfective nor perfective aspect, dubbed ‘neutral aspect’, which I will implement to account for the properties of Atayal unmarked predicates. According to Smith, the range of meanings that neutral aspect can express is not entirely flexible, but shares the following three characteristics: (a) inceptive readings with a *when*-clause, (b) incomplete readings of accomplishment events, and (c) lack of the reading that focuses on the preliminary stage of an achievement. Based on evidence of these kinds in French, Chinese, and Navajo, Smith characterizes neutral aspect as an aspect that “*includes the initial point and at least one internal stage of a situation (where relevant)*” (Smith 1997: 81). The precise interpretation of internal stages of an event is conditioned by eventuality type. The temporal schema of an instantaneous event like an achievement has no internal stages so neutral aspect spans the entire event and thus the completion of the event follows, whereas neutral aspect spans only one stage of a durative event, and thus no final point is ensured. This way, neutral aspect complements perfective and imperfective in how an event is viewed with respect to initial and final points: “*the neutral viewpoint includes one endpoint, the perfective both endpoints, and the imperfective neither*” (ibid.: 81). In spite of the misleading name, neutral aspect in Smith’s proposal is not “neutral” at all but a special viewpoint that allows reference to the beginning point of an event and part of its temporal structure, but not to the final point.

The neutral aspect correctly predicts the use of unmarked predicates in Atayal: The event denoted by the neutral aspect must begin within the reference time, but does not need to reach any particular culmination point; achievements are forced to culminate due to their eventuality structure. However, the fact that unmarked accomplishments in Atayal do not culminate constitutes the so-called ‘Imperfective Paradox’, which is observed on progressives (Dowty 1979, Parsons 1990, Landman 1992, Zucchi 1999, etc.). Given that Atayal has a perfect aspect *wal*, and the perfect always entails

culmination of accomplishments, as shown in (15a), the non-culminating effect in (15b), repeated from (4) above, becomes a (classic) puzzle.

- (15) a. *wal=naha kblay-un qu ngasal.*
 PFV.PRF=3P.ERG make-PV ABS house
 ‘They built the house.’
- b. *kblay-un=naha qu ngasal.*
 make-PV=3P.ERG ABS house
 ‘They built/started building the house (but didn’t finish it).’

It has been argued that the lack of culmination entailments for progressives cannot be explained by an extensional analysis, which asserts that the culminating event in the VP denotation exists, but requires an intensional analysis (Dowty 1977, 1979, Landman 1992, Portner 1998, among others). For instance, Dowty (1979) gives an analysis that the complete eventuality only exists in ‘inertia worlds’—“worlds which are exactly like the given world up to the time in question and in which the future course of events after this time develops in ways most compatible with the past course of events” (Dowty 1979: 148).

Altshuler (2014) extends this modal approach to Russian imperfective, which shares many similarities to the Atayal unmarked forms. In what follows, I will review his proposal and discuss the difference between the two languages. It is worth noting that non-culminating accomplishments are also observed in perfective cross-linguistically, which receive many different analyses.³ However, I will discuss in Section 6 reasons for not analyzing the Atayal unmarked predicates as perfective. Altshuler proposes that the Russian imperfective is a STAGE operator, as given in (16a), which denotes a function that returns VP-event stages, which are defined as less-developed versions of an event by Landman (1992).⁴ As given in (16b), the STAGE operator combines with a set of events P and requires an event e' that is instantiated in the actual world w^* to be a *non-proper* part of a P -event e in a ‘near enough’ world w .

- (16) a. $[[\text{IPF}]] = \lambda P \lambda e' \exists e \exists w [\text{STAGE}(e', e, w^*, w, P)]$
- b. $[[\text{STAGE}(e', e, w^*, w, P)]]^{\text{M.g}} = 1$ iff (i)–(iv) holds:
- (i) the history of w is the same as the history of w^* up to and including $\tau(e')$
 - (ii) w is a reasonable option for e' in w^*
 - (iii) $[[P]]^{\text{M.g}}(e, w) = 1$
 - (iv) $e' \subseteq e$ (Altshuler 2014: 754)

Altshuler also assumes that achievement events are atomic stages.⁵ In the application of (16b-iv), an atomic stage trivially develops into itself in the actual world and presumably in every other possible world. Thus an achievement is expected to have culmination entailments. By contrast, accomplishment events comprise at least two stages, and thus any of the event stages will satisfy the truth-conditions of the imperfective, and no culmination is entailed. The Atayal unmarked predicates behave exactly like the Russian imperfective with respect to (non-)culmination, but differ from it in having an inceptive reading. The Russian imperfective requires the reference time to follow a (sub)part of the event (i.e., the reference time is included inside the result state of the event) (Altshuler 2012):

³ See, for instance, Tagalog (Dell 1987), Japanese (Ikegami 1985), Hindi (Singh 1998), Mandarin (Smith 1994, Koenig and Chief 2008), Malagasy (Travis 2000), Thai (Koenig and Muansuwan 2000), *Skwxwú7mesh*, *St'át'imcets* and *SENĆOŦEN* (Salish) (Bar-el 2005, Bar-el et al. 2005, Kiyota 2008), Karachay-Balkar (Turkic) (Tatevosov 2008), among many others.

⁴ According to Landman (1992), sets of events can be ordered by a ‘part-of’ relation and a ‘stage-of’ relation, where “not every part of [an event] at an interval is a stage of e ; to be a stage, a part has to be big enough and share enough with e so that we can call it a less developed version of e ” (Landman 1992:23).

⁵ This is different from proposals (e.g., Rothstein 2004) where achievement events are assumed to have no stages.

- (17) Nedelju nazad Marija po-celova-l-a Dudkina.
 Week ago Maria PFV-kissed-PST.3S-FEM Dudkin
 ‘A week ago, Maria kissed Dudkin.’

On *dari-l* ej cvety i *priglaš-a-l* ee v teatr.
 He give.IPF-PST.3S her flowers and invite.IPF-PST.3S her to theatre
 ‘He had given her flowers and had invited her to the theatre.’

(Altshuler 2012:61)

To account for the inceptive reading in Atayal unmarked predicates, however, the initial interval of the event time must be included inside the reference time. This brings us back to the hybrid behaviour of the unmarked forms: They can be neither accounted for by perfective nor imperfective, but support a distinct viewpoint aspect, namely, neutral aspect. I suggest that the modal semantics in Altshuler’s implementation be incorporated into the semantics of neutral aspect. Note that Altshuler (2013, 2014) in fact defends the position that neutral aspect can be dispensed with if telicity is made independent from (im)perfectivity. The Atayal unmarked forms thus present as rejection of this reduction.

5. Analysis

Following Smith (1997), I propose that sentences of morphologically aspectually-unmarked predicate in Atayal carry a null neutral aspect. Modifying Altshuler’s (2014) idea about the Russian imperfective, the Atayal null aspect is analyzed as encoding a partitive operator in (18), which I term I(initial)-STAGE. As given in (18a), the null aspect denotes a function from a set of events to a property of times and it is true of a time t such that t includes the running time of an *initial stage* of the P-event.

(18) a. $[[\text{NEU}]] = \lambda P \lambda t \exists e \exists e' \exists w' [\text{I-STAGE}(e, e', w, w', P) \wedge \tau(e') \subseteq t]$

b. $[[\text{I-STAGE}(e, e', w, w', P)]]^{\text{M.g}} = 1$ iff (i)–(iv) holds:

- (i) the history of w' is the same as the history of w up to and including $\tau(e)$
- (ii) w' is a reasonable option for e in w
- (iii) $[[P]]^{\text{M.g}}(e', w') = 1$
- (iv) $e \preceq e'$ iff $\tau(e) \preceq \tau(e')$ and $e \sim e'$

The notion of ‘initial-stages’ in (18b-iv) is borrowed from Landman (2008) and Landman and Rothstein (2012): e is an i-stage of e' , $e \preceq e'$, iff $\tau(e)$ is an initial subinterval of $\tau(e')$, and e and e' are cross-temporally identical. Activities and accomplishments differ in whether i-stages are incrementally homogeneous with respect to the VP-event; for instance, the i-stage of an accomplishment like ‘eating a mango’ is big enough to count as eating, but not itself an event of eating a mango (see Landman and Rothstein 2012 for motivating i-stages to account for subinterval property of activities).

5.1. Explaining the presence/absence of culmination entailments

As with Altshuler, I also assume (a) that an event stage going on in the actual world is a part of the event continued in some possible world, and (b) that achievements denote a set of atomic stages. These explain the contrastive behaviour of accomplishments vs. achievements (as well as inchoatives) in culmination entailments: An achievement (or an inchoative state) has an atomic stage, which trivially develops into itself in every world, yielding culmination entailments, whereas a stage of an accomplishment event that satisfies the null aspect is never identical to the completed event.

5.2. Explaining the event continuation

Within the framework of event stages, this analysis can also explain the possible continuation of a non-achievement event. Without restricting development of an event (which may be required for other languages), any bigger part of that event, which shares the same initial stage, could keep developing beyond the initial stage.

5.3. Explaining the inceptive reading

Recall that the Atayal neutral aspect parallels the Russian imperfective aspect except that the event stage referred to by the neutral aspect must include the initial point of the completed event. The inclusion of the running time of initial stages inside the reference time thus correctly accounts for inceptive readings for events of every lexical class.

6. Potential alternatives

An alternative to the analysis that I propose is to encode the intensional semantics as a lexical property rather than to build it into the semantics of viewpoint aspect. For example, it has been proposed in the literature that the culmination of accomplishments is removed by an imperfective operator in Thai (Koenig & Muansuwan 2000), or by the control transitivity in Salish languages (Bar-el 2005 and Bar-el et al. 2005). Adopting this approach, Atayal unmarked predicates are best analyzed as having a (null) perfective, by which inceptive readings with every lexical class and culmination of achievements are expected, whereas accomplishments are unusual due to extra semantics.⁶ Also, activities and accomplishments can continue if two units of activity events are viewed as the same event. This analysis, however, has a difficulty in unifying the entire aspectual system. Recall that Atayal has a perfect form that leads to culmination entailment with accomplishments. If Atayal accomplishment stems had no final point, the perfect sentence could terminate without entailing that any culmination has been reached, contrary to the fact:

- (19) *wal kblayun ni watan sa kawas wayal #ga ini' tmasuq na'.*
 PRF.PFV make.PV ERG Watan LOC year past TOP NEG finish.AV still
 'Watan built the house last year (#but he didn't finish building it).'

The culmination effect cannot be encoded in the perfect aspect *wal* either as it would force undesired final points for activities.

Another possibility is to suppose that accomplishment stems are ambiguous between a non-culminating and a culminating reading (Tatevosov 2008), and *wal* only applies to the culminating form but not the other, yielding the right results.⁷ Such an analysis requires further evidence for the ambiguity of accomplishment stems in the language, which I am not aware of. Technically speaking, the null neutral aspect that I propose can be also seen as extending Bar-el's and this analysis: Atayal needs a null version of the morpheme that takes away culmination, and *wal*-marked accomplishments do not contain this null morpheme.⁸

7. Concluding remarks

This paper brings empirical evidence showing that aspectually-unmarked predicates in Atayal share a unified episodic reading, which motivates a null neutral aspect in the sense of Smith (1991/1997). The neutral aspect includes the initial point and one internal stage of an event, where achievements differ from accomplishments in entailing culmination. Building upon Altshuler's (2014) analysis, which is in turn based on Landman's (1992) idea of event development, I propose that the neutral aspect in Atayal encodes a partitive operator, I-STAGE. The neutral aspect requires that the initial stage of an event that takes place in the actual world is included in the reference time, and that event continues and culminates in some possible world that closely resembles ours. This analysis successfully explains the generalization that the event described by unmarked predicates begins, but does not reach any particular culmination/termination point. The observed culmination entailment for achievements and inchoative states independently follow from the nature of those events being atomic. The analysis has a typological implication for encoding non-culmination effects: The intensional

⁶ Non-actor voice in Atayal is a potential bearer of the intensional semantics as it introduces a specific or definite object to an activity verb, which makes it accomplishment-like. However, one pitfall is that not all sentences of non-actor voice are non-culminating; some are achievements.

⁷ Thanks a WCCFL-34's reviewer for bringing up this possibility to me.

⁸ Thanks Lisa Matthewson for clarifying this issue for me.

semantics can be introduced by neutral aspect, in addition to perfective (e.g., in Thai), imperfective (e.g., in Russian), and progressive (e.g., in English) that have been argued in other languages.

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