

Atelicity and anticausativization*

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Various interactions between *argument structure* and *eventuality type* are currently attracting much attention. In this paper, we contribute to the field by examining one specific type of such an interaction not much addressed in the literature so far — that between *anticausativization* and *(a)telicity* of a verbal predicate. We focus on how anticausativization affects the range of interpretations of *non-culminating accomplishments*, showing that proper understanding of this phenomenon has far-reaching consequences for the analysis of (the denotation of) *vP*. We argue that *inertia modality* can be introduced at different levels within *vP*, and this explains why different kinds of non-culmination are affected by the anticausative in different ways.

1. Introduction

Studies in anticausativization and related phenomena (Grimshaw 1982, Roeper 1987, Haspelmath 1990, Levin & Rappaport Hovav 1995, Embick 1997, Wunderlich 1999, Reinhart 2002, Doron 2003, Chierchia 2004, Alexiadou et al. 2006, Kalluli 2006, 2007, Alexiadou & Doron 2007) have mostly focused on what the architecture of anticausative clauses looks like, in particular, on how the argument structure of non-derived verbs is related to that of the anticausative, on how the anticausative is related to other operations affecting core syntactic relations, e.g., to the passive voice, and on how the class of verbs/verb stems that allow for anticausativization can be singled out. One

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with the additional condition that their Agent is John. (Note that it is not the case that (2b) denotes agentless events: this would be a predicate $\lambda e. \neg \exists x [\text{burn}(e) \wedge \text{Agent}(x)(e) \wedge \text{Theme}(\text{soup})(e)]$.) Crucially, since John-burns-the-soup events *are* the-soup-burns events, the eventuality type of (2a-b) is inevitably the same. And since, by hypothesis, any anticausative clause differs from a corresponding transitive (causative) clause in the same way, we predict that if (2a-b) are correct, anticausativization can never have any impact on the eventuality type. In case of ‘burn’, both predicates are telic.

The story we are going to tell in this paper suggests, too, that things are more complicated than the analysis in (2) would imply.³ Specifically, we present evidence from Karachay-Balkar (Altaic, Turkic) showing clearly that anticausativization does affect the eventuality type.

In Section 2.1, we show that the anticausative differs systematically from its transitive counterpart in that it does not possess an atelic (non-culminating) interpretation. Then we find that, even more surprisingly, this only happens to a subclass of verbs that are able to form the anticausative: the eventuality type of others remains intact under anticausativization. We thus identify two classes of verbs/verb stems: *atelicity-preserving* and *atelicity-suppressing*. In Section 2.2, we discover that atelicity-preserving and atelicity-suppressing verbs differ semantically not only within anticausative, but also within transitive configurations. The former allow for two types of non-culminating readings which we call *failed attempt* and *partial success* readings. The latter are only associated with the failed attempt interpretation. In Section 3 our proposal accounting for the eventuality type of the anticausative is formulated. In 3.1, we offer informal generalizations and preliminary hypotheses that relate different types of non-culmination to different subevents constituting an accomplishment event structure. Section 3.2 introduces our argument for rich predicate decomposition whereby an eventuality in the denotation of accomplishment predicates consists of three subevents. In Section 3.3 we survey a constructionalist theory of event structure along the lines of Ramchand’s (2008) First Phase Syntax. Section 3.4 offers an analysis of the two basic types of accomplishments in Balkar. In Section 3.5, a theory of non-culmination is developed, and finally, all the ingredients are combined in Section 3.6 to explain the eventuality type of the anticausative.

3. Examining semantic relations between unaccusative change and motion verbs and corresponding causatives (e.g., *roll*), Dorit Abush (2005: 36 *et seq.*) makes a similar observation: one is tempted to analyze unaccusative and transitive construals of *roll* along the lines of (2b) and (2a), respectively, that is, as event predicates that involve the subset-superset relation. However, Abush presents convincing arguments from adverbial modification suggesting that this type of analysis cannot be maintained.

2. The problem

2.1 The anticausativity puzzle

Karachay-Balkar is a language in which accomplishment verbs do not entail culmination: they are systematically ambiguous between telic (culminating) and atelic (non-culminating) interpretations. In (3a-b) the perfective form of the verb *ac* ‘open.vt’ is exemplified.⁴ (3a) accepts a time span adverbial and is therefore telic: the Agent’s activity causes the Theme to reach the result state of being open. In contrast, (3b) is compatible with a measure adverbial, hence atelic.⁵ It indicates that the Agent performs activity that aims at changing a state of the Theme. However, this activity terminates before the culmination.

- (3) a. *kerim eki minut-xa ešik-ni ac-xan-dı.*
 Kerim two minute-DAT door-ACC open-PFCT-3SG
 ‘Kerim opened the door in two minutes.’
- b. *kerim eki saRat ešik-ni ac-xan-dı.*
 Kerim two hour door-ACC open-PFCT-3SG
 ‘Kerim tried to open the door for two hours.’ (lit. ‘Kerim opened the door for two hours.’)

The next observation is that this ambiguity exists at the *vP* level already and is not induced by functional structure dominating *vP*. This is evidenced by the fact that both telic and atelic interpretations are available for other types of fully inflected clauses, as in (4a-b) and (5a-b) with Simple Past and Future forms of *ac* ‘open’, for infinitival clauses in (6a-b), and in causative configurations in (7a-b):

- (4) a. [*kerim eki minut-xa ešik-ni ac*]-*tı.*
 Kerim two minute-DAT door-ACC open-PST.3SG
 ‘Kerim opened the door in two minutes.’

4. Perfectivity of both examples in (3a-b) is evidenced by the interpretation of temporal adverbial clauses. Consider (i):

- (i) *alim kel-gen-di kerim eki saRat ešik-ni ac-xan-dı.*
 Alim come-PFCT-TEMP Kerim two hour door-ACC open-PFCT-3SG
 1. ‘When Alim came, Kerim spent two hours trying to open the door.’
 2. *‘When Alim came, Kerim was opening the door for two hours.’

(i) does not support the interpretation (i.2) in which the running time of the opening event includes that of the coming event referred to by the adverbial clause. (i) is only true if coming temporally precedes opening, as in (i.1). Clearly, this would have never been the case if the imperfective viewpoint aspect were a part of the meaning of the main clause. In contrast, temporal sequencing of events in (i) follows naturally if *ac-xan-dı* ‘opened, tried to open’ is perfective. We are grateful to the anonymous reviewer of this volume who encouraged us to address this issue.

5. (3b) and all the (b) examples in (4)-(7) below also allow for the iterative reading ‘For two hours, K. opened the door again and again’ irrelevant for the present discussion.

- b. [*kerim eki saRat ešik-ni ac*]-*ti*.
 Kerim two hour door-ACC open-PST.3SG
 Lit. ‘Kerim opened the door for two hours.’
- (5) a. [*kerim eki minut-xa ešik-ni ac*]-*ar-di*.
 Kerim two minute-DAT door-ACC open-FUT-3SG
 ‘Kerim will open the door in two minutes.’
- b. [*kerim eki saRat ešik-ni ac*]-*ar-di*.
 Kerim two hour door-ACC open-FUT-3SG
 Lit. ‘Kerim will open the door for two hours.’
- (6) a. *alim kerim-ge* [PRO *eki minut-xa ešik-ni ac*]-*irRa bujruq ber-di*.
 Alim Kerim-DAT two minute-DAT door-ACC
 open-INF permission give-PST.3SG
 ‘Alim gave permission to Kerim to open the door in two minutes.’
- b. *alim kerim-ge* [PRO *eki minut ešik-ni ac*]-*irRa bujruq ber-di*.
 Alim Kerim-DAT two minute door-ACC
 open-INF permission give-PST.3SG
 ‘Alim gave permission to Kerim to try to open the door for two minutes.’
- (7) a. [_{VP} *alim* [_{VP} *kerim-ge eki minut-xa ešik-ni ac*]-*tir*]-*Ran-di*.
 Alim Kerim-DAT two minute-DAT door-ACC
 open-CAUS-PFCT-3SG
 ‘Alim made Kerim open the door in two minutes.’
- b. [_{VP} *alim* [_{VP} *kerim-ge eki saRat ešik-ni ac*]-*tir*]-*Ran-di*.
 Alim Kerim-DAT two hour door-ACC open-CAUS-PFCT-3SG
 ‘Alim made Kerim try to open the door for two hours.’

(7) provides the most significant evidence that allows to figure out at which stage of syntactic derivation non-culminating readings come into play. If causatives of transitives like those in (7a-b) involve configurations with two ν P (see Harley 2006 and references therein), lower ν P being a complement of the higher causative ν , examples like (7) make sure that the both culminating and non-culminating interpretations are generated at least at the (lower) ν P level.

Given this background let us now look at the anticausative. Anticausativization in Balkar as well as in the vast majority of other Turkic languages is morphologically

marked by the *-(Y)l* morpheme.⁶ The anticausative can be formed from a wide variety of accomplishment verbs, roughly corresponding to those exhibiting causative-inchoative alternation in English. Its precise lexical distribution is not significant for our purposes, however.

Anticausativization is exemplified in (8b):

- (8) a. *alim ešik-ni ac-xan-di.*
 Alim door-ACC open-PFCT-3SG
 ‘Alim opened the door.’
- b. *ešik ac-**il**-Ran-di.*
 door open-ANTICAUS-PFCT-3SG
 ‘The door opened.’

In (8a), the non-derived transitive verb *ac* ‘open’ occurs, and (8b) is the product of anticausativization. In (8b), the internal argument *ešik* ‘door’ assumes the subject position, and the sentence refers to a change of state of that argument.

Two crucial facts about the eventuality type of the anticausative are listed in (9):

- (9) a. There is a class of verbs that lose the atelic (non-culminating) interpretation under anticausativization.
- b. The rest of verbs that allow for anticausativization retain the atelic (culminating) interpretation.

(9) is illustrated by examples like (10a-b):

- (10) a. *ešik eki sekunt-xa ac-**il**-Ran-di.*
 door two second-DAT open-ANTICAUS-PFCT-3SG
 ‘The door opened in two seconds.’
- b. **ešik eki sa**Rat** ac-**il**-Ran-di.*
 door two hour open-ANTICAUS-PFCT-3SG
 Lit. ‘The door opened for two hours.’

We see that unlike what happens in a variety of other syntactic environments in (4)-(7), anticausativization does affect the eventuality type of accomplishment verbs. In contrast with finite clauses in (4)-(5), as well as with the infinitival clause in (6) and *vP* that occurs as a complement of the causative morpheme in (7), the atelic anticausative in (10b) is ungrammatical.

6. The *-(Y)l* morpheme is also associated with the passive voice (not discussed in the present paper). Cross-linguistically, it is not uncommon that passive and anticausative share the same piece of morphology, see e.g. Haspelmath (1990), Kemmer (1993), Alexiadou et al. (2006), Alexiadou & Doron (2007). The passive voice in Balkar is discussed extensively in Lyutikova et al. (2006).

Given (4)-(7), ungrammaticality of (10b) is puzzling by itself, but even more problematic are examples like (11)-(12):

- (11) a. *išci eki kün-ge üj-nü oj-Ran-dı.*
 worker two day-DAT house-ACC demolish-PFCT-3SG
 ‘The worker took down the house in two days.’
- b. *išci eki kün üj-nü oj-Ran-dı.*
 worker two day house-ACC demolish-PFCT-3SG
 ‘The worker was involved in taking down the house for two days.’ (lit. ‘The worker took down the house for two days.’)
- (12) a. *üj eki zil-Ra oj-ul-Ran-dı.*
 house two year-DAT demolish-ANTICAUS-PFCT-3SG
 ‘The house went into ruin in two years.’
- b. *üj eki zil oj-ul-Ran-dı.*
 house two year demolish-ANTICAUS-PFCT-3SG
 ‘The house was decaying for two years.’ (lit. ‘The house went into ruin for two years.’)

As (11a-b) show, the verb *oj* ‘demolish, destroy, crumble’ patterns with *ac* ‘open’ in allowing for both culminating and non-culminating interpretations. The latter, however, does not disappear under anticausativization: in contrast with (10b), (12b) indicating that the house decays for two years but does not enter the result state of being (completely) destroyed is perfectly appropriate.

What we see in (10b) and (12b) are not accidental properties of just two lexical items, *ac* ‘open’ and *oj* ‘demolish, crumble’. The whole class of accomplishment verbs allowing for anticausativization fall into two subclasses, which we refer to as *atelicity-preserving* and *atelicity-suppressing*.

A few instances of *atelicity-preserving* verbs (AP-verbs henceforth) that resemble *oj* ‘demolish, crumble’ in allowing the anticausative to be atelic are listed in (13a). Examples of *atelicity-suppressing* verbs (AS-verbs) that pattern with *ac* ‘open’ in being obligatorily telic under anticausativization come in (13b):

- (13) a. Atelicity-preserving verbs: *buz* ‘spoil’, *quj* ‘pour out’, *soz* ‘stretch’, *tazala* ‘clean’, *tök* ‘spill out’, *terenlendir* ‘deepen, tr.’, *aqla* ‘whiten, tr.’...
- b. Atelicity-suppressing verbs: *ac* ‘open’, *ij* ‘untie’, *ujat* ‘wake up’, *zap* ‘close’,...

We have two questions to address, therefore. First, why does anticausativization affect the eventuality type? As examples in (4)-(7) suggest, the full potential for the actional ambiguity must exist at the *vP* level, before functional structure dominating *vP* is projected. Therefore, it is within *vP* where this potential changes if the anticausative clause is built. But what exactly happens when the atelic interpretation disappears?

Secondly, where does the difference between *atelicity-suppressing* and *atelicity-preserving* verbs come from? Indeed, it is reasonable to assume that the anticausative

clause is derived in the same way for both types of verbs. If so, the fact that their eventuality type is affected in different ways suggests that there must be something about these verbs *per se* that is responsible for their different behavior. Furthermore, this difference should manifest itself elsewhere, we should be able to detect it not only in anticausative, but also in transitive clauses. Then, the fact that they look superficially identical – both possess telic and atelic interpretations, cf. (3a-b) and (11a-b) – does not reflect identity of their lexical representations and/or syntactic structures they project. But what exactly is this difference?

In the next section, we start answering the second question by taking a finer look at the non-culminating readings of AP-verbs like *oj* ‘demolish, crumble’ and AS-verbs like *ac* ‘open’ in transitive configurations. We will discover that despite apparent similarity of examples like (3a-b) and (11a-b), their interpretation is not exactly the same. This discovery will play the crucial role in our answer to the first question, which will be offered in Section 3.

2.2 Failed attempts and partially successful actions

In this section we will make two main observations. First, there are two distinct non-culminating atelic interpretations, not just one. Secondly, AP-accomplishments and AS-accomplishments differ not only as to the properties of the anticausative, but also as to the range of non-culminating interpretations they have in transitive configurations.

Let us first take a look at AS-accomplishments in (14) with *ac* ‘open’ and *zirt* ‘tear’:

- (14) a. *kerim eki saRat ešik-ni ac-xan-dı.*
 Kerim two hour door-ACC open-PFCT-3SG
 ‘Kerim tried to open the door for two hours.’ (lit. ‘Kerim opened the door for two hours.’)
- b. *fatima eki minut xalı-nı zirt-xan-dı.*
 Fatima two minute thread-ACC tear-PFCT-3SG
 ‘Fatima tried to tear a thread for two minutes.’ (lit. ‘Fatima tore a thread for two minutes.’)

What we see in (14a-b) is an activity that terminates producing no change in the Theme: attempts to make the Theme enter a new state fail completely. Examples like (14a-b) are thus compatible with the failed attempt scenario in (15a), but not with the partial success scenario in (15b):

- (15) Scenarios for (14b):
- Failed attempt*: For two minutes, Fatima was trying to tear a thread, but the thread was so firm that she was unable to tear it.
 - *Partial success*: For two minutes, Fatima was tearing a thread, so when she stopped, the thread was partly torn.

Therefore, AS-accomplishments like ‘tear’ and ‘open’ when refer to a non-culminating eventuality, only allow for the *failed attempt interpretation*.

AP-accomplishments like *oj* ‘demolish, crumble’ are different: they accept both the failed attempt and partial success scenarios, as represented in (16)-(17):

- (16) *išci eki kün üj-nü oj-Ran-dı.*
 worker two day house-ACC demolish-PFCT-3SG
 ‘The worker was involved in taking down the house for two days.’ (lit. ‘The worker took down the house for two days.’)

- (17) Scenarios for (16):
- Failed attempt*: For two days, the worker was trying to took down the house, but the house was so firm that he gave up, not being able to remove a single brick.
 - Partial success*: For two days, the worker was taking down the house; he removed the roof and one of the walls, but then was asked to stop.

On the partial success scenario in (17b), the event does not culminate, but in a strikingly different way than in (17a): the Theme is not completely destroyed when the event terminates, but it definitely undergoes a certain amount of change.⁷

Therefore, AP-accomplishments do not only differ from AS-accomplishments as to the properties of the anticausative: independently, they differ as to whether they can be associated with the partial success interpretation in the transitive configuration, as represented in Table 1.

Data in Table 1 suggest clearly that there is an implicational relation between the eventuality type of the anticausative (hence the membership of a verb in AS- or AP-classes) and the range of interpretations of a corresponding transitive clause: the anticausative preserves atelicity iff the transitive clause allows for the partial success reading, otherwise it suppresses atelicity. The failed attempt interpretation, on the other hand, is what AS-verbs and AP-verbs share.

Table 1. Semantic characteristics of AP and AS verbs

	AP-verbs	AS-verbs
Failed attempt interpretation	+	+
Partial success interpretation	+	-
Atelic anticausative	+	-

7. For AP-verbs like *oj*, it is the context that determines what kind of non-culminating interpretation we get. Imagine a big medieval house made of huge heavy rocks and a worker only equipped with a pickaxe. Here we are most likely to get (17a). If, on the other hand, the house is a small shack and the worker came with a pneumatic chipper, (17b) would be most probable. Crucially, AS-verbs are not dependent on the context in a comparable way: no kind of context can improve (15b) under the partial success scenario.

Finally, it is worth noting that the atelic interpretation of the anticausative in (18a) is essentially a “partial success”, not a “failed attempt”. Compare (16) and (12b), repeated as (18a) and (18b) respectively:

- (18) a. *išci eki kün üj-nü oj-Ran-dı.*
 worker two day house-ACC demolish-PFCT-3SG
 ‘The worker was involved in taking down the house for two days.’
 Partial success context: ...removed the roof and one of the walls, but then was asked to stop.
- b. *üj eki zıl oj-ul-Ran-dı.*
 house two year demolish-ANTICAUS-PFCT-3SG
 ‘The house was decaying for two years.’ (lit. ‘The house went into ruin for two years.’).
 Partial success context: ...so when I saw this house, the roof and one of the walls had already collapsed.
 *Failed attempt context: ...but when I saw this house nothing had yet happened to it.

In the transitive clause in (18a), the Theme undergoes the process of destruction without attaining the result state of being destroyed. In (18b) we are dealing with exactly the same non-culminating process, but, due to anticausativization, the sentence does not indicate that the process is induced by the Agent’s activity.

Descriptive generalizations that emerge at this point are thus as follows:

- (19) a. The partial success reading is only available for AP-accomplishments like *oj* ‘demolish, crumble’ (cf. (15b) and (17b)). It survives under anticausativization, yielding the atelic interpretation of the anticausative (see (18b)).
- b. The failed attempt reading is available for all the non-culminating accomplishments (cf. (15a) and (17a)). It disappears under anticausativization (see (18b)).

Let us take stock of what we have observed so far. Karachay-Balkar is a language where accomplishment predicates do not entail culmination, so that accomplishment transitive clauses are systematically ambiguous between culminating (telic) and non-culminating (atelic) interpretations. There are two patterns of anticausativization, atelicity-preserving and atelicity-suppressing, and two corresponding types of verbs, AP-verbs and AS-verbs. The former yield *eventuality type ambiguity* in both transitive and anticausative clauses; the latter create unambiguously telic anticausatives. Besides, AP-verbs and AS-verbs differ as to the semantic type of non-culminating readings in the transitive configurations. AP-verbs can have both the partial success reading whereby the Theme undergoes some change before the eventuality terminates, and the failed attempt reading whereby the Theme undergoes no change at all. AS-verbs are only compatible with the failed attempt reading.

3. Solving the puzzle

3.1 Sources of atelicity

Since generalizations in (19) suggest that semantics of transitive and anticausative clauses are tightly connected, a reasonable strategy of discerning characteristics of the latter would be to look at the semantic makeup of the former.

The solution to the puzzles outlined above begins to emerge if one assumes the view that accomplishment predicates denote complex events consisting of a number of subevental components such as the Agent's activity, process in the Theme  the result state of the Theme.

If this view is correct, the informal notions of failed attempt vs. partial success introduced above can be given the following sense. These two types of non-culminating interpretations differ from each other and from the culminating one as to what part of the whole complex eventuality occurs in the actual world, as represented in Table 2.

The culminating reading obtains if all the three components of a complex eventuality exist in the actual world. Accordingly, for an eventuality not to culminate means that at least the result state does not occur in the actual world. The partial success and failed attempt interpretations then differ in whether the process in the Theme occurs in the actual world.

In this way, different types of non-culmination can be viewed as related to different subevental components. One type, the failed attempt, is, in a sense, an activity-related non-culmination: Agent's activity occurs in the actual world, but the rest of the complex eventuality does not. Another type, the partial success, is process-related: the process in the Theme induced by the Agent's activity does exist in the actual world, but the culmination of this process as well as the result state immediately following the culmination do not.

Table 2. Culminating and non-culminating readings

	Culminating	Non-culminating	
		partial success	failed attempt
Agent's activity	In actual world	In actual world	In actual world
Process in the Theme	In actual world	In actual world	Not in actual world
Result state	In actual world	Not in actual world	Not in actual world

While the activity-related non-culmination is what AP- and AS-verbs share, availability of the process-related non-culmination tells them apart, as informally represented in (20a-b):⁸

8. The anonymous reviewer of this volume has suggested that Krifka's (1998 and elsewhere) notion of Mapping to (Sub)objects (MSO) may provide "a conceptual tool in order to describe the facts much more precisely". If we understand this suggestion correctly, it invites us to reconstruct the semantics of AP-verbs like *oj* 'demolish' and AS-verbs like *zryt'sya* 'tear' in the following way. On 'tear a thread', MSO fails: it is not the case that the more a tearing event develops, the bigger part of the thread is torn. The thread tears at the minimal final part of the event, but at any non-final proper part it retains its initial state. If the non-culminating eventuality is viewed, roughly, as a proper part of a corresponding culminating one (see Section 3.5 for a more refined view), this will be precisely the part at which nothing happens to a thread. In this way, one can argue, the failed attempt interpretation obtains. On the other hand, the partial success reading emerges if the relation between individuals and events does show MSO. Demolishing the house can be construed in such a way that each part of the event is mapped onto some part of the house. A non-culminating variant of the predicate will thus necessarily contain events in which the house undergoes some change, hence the partial success reading.

If our attention is limited to non-incremental verbs like 'tear' and incremental theme verbs like 'demolish', the MSO approach works perfectly well. However, it faces a complication if we take into account other types of verbs for which the physical extent of the theme is irrelevant for tracking the progress of the event. One example are degree achievement verbs like 'deepen', 'lengthen', etc. As one can see from (13) above, in Balkar they fall under the AP-class and can thus have a partial success reading. On this reading, predicates like 'deepen the hole' refer to a partially successful action in which the depth of the hole increases a little, but the deepening activity stops before the depth reaches some intended (contextually salient) degree. But unlike on 'demolish', on 'deepen' MSO fails: it is not the case that if the hole has been deepened by some degree d in the event e , then in every subevent of e some part of the hole was deepened by d . Rather, in every e' , $e' < e$, the depth of the *whole* hole increases by some degree d' , $d' < d$. This, of course, happens because events in the extension of 'deepen' are incrementally related to gradable properties of theme participants (depth, in the case at hand), not to theme participants as such. To capture this, we will need some sort of Mapping-to-Degrees property, parallel to MSO.

The problem is that there can be even more entities incrementally related to eventualities (e.g., incremental paths), and for every such an entity we may have to have a separate "Mapping-to-..." property. In this way, we end up by not having a natural class of verbal predicates that allow for a partial success interpretation. As a result, the observation that, e.g., both incremental theme verbs like 'demolish' and degree achievement verbs like 'deepen' allow for a partial success interpretation would reflect two independent facts about distinct verb classes. Evidently, this is not a welcome outcome of the analysis. If we could develop a theory of accomplishments in which all verbs that allow a specific type of non-culmination form a natural class, this would be a better option. But an attempt to describe relations between activity and *become* events in terms of another relation, that between the whole eventuality and some entity incrementally related to the eventuality, does not yield this result. This is the main reason why we do not rely on MSO when developing our account for the anticausativization puzzle.

To make this informally stated hypothesis fully explicit, we need the following ingredients of the theory:

- (23) a. A theory of predicate decomposition based on the three-way distinction between activity, process and result state subevents.
 b. A theory of non-culmination, accounting for atelic interpretations of accomplishment verbs in languages like Balkar.
 c. Semantic analysis capturing the difference between AP- and AS-verbs in transitive clauses.
 d. Semantics for the anticausative.

The components of our proposal listed in (23) will be developed in Sections 3.2–3.5, and in Section 3.6 we put them together to achieve an explanation for the anticausativity puzzles discussed above.

3.2 Rich predicate decomposition

At least since Dowty (1979), various theories accounting for the semantic characteristics of accomplishments assume that natural language predicates of this type are complex and involve at least two components, an activity component and the change of state/result state induced by that activity. Among other things, these theories differ as to how many components of accomplishment structure they assume. The vast majority of semanticists rely on different versions of two-way decomposition, see Dowty (1979), Rappaport Hovav & Levin (1998 and elsewhere), Kratzer (2000 and elsewhere), Pylkkänen (2002), Rothstein (2004), to mention only a few.

In contrast, Ramchand (2002, 2003, 2008) and Folli (2002 and elsewhere) develop an elaborated theory of three-way decomposition. Within this theory, the event predicate that forms a part of the denotation of accomplishment clauses like (24a) can be represented as in (24b), with a few simplifications and adjustments not significant for our present purposes:

- (24) a. John demolished the house.
 b. $\lambda e \exists e' \exists s [\text{demolish}_A(e) \wedge \text{Initiator}(\text{John})(e) \wedge \text{cause}(e')(e) \wedge \text{demolish}_P(e') \wedge \text{Undergoer}(\text{door})(e') \wedge \text{cause}(s)(e') \wedge \text{demolish}_S(s) \wedge \text{Resultee}(\text{door})(s)]$
 where e is a variable ranging over events, s ranges over states, **demolish_A** and **demolish_P** are event predicates, and **demolish_S** is a state predicate.

(24) denotes demolishing activities (those that fall under the denotation of the event predicate **demolish_A**) performed by John. These activities bring about a process (**demolish_P**) in the house that makes the house attain a state (**demolish_S**) of being demolished.⁹

9. Cf. Folli's (2002) characterization of causative accomplishment predicates like *open* in *John opened the door*. As Folli (2002: 38) argues, they are to be analyzed as "composed of three sub-events, the causing event of *John doing something*, the change event of *the door being progressively in a different spatial configuration*, and the result event of *the door being open*".

In the literature, one can find extensive evidence showing that accomplishments involve *more than one* component. Essentially, most of this evidence points towards the same general observation: there exist operators that can take scope over one of the components of accomplishment structure, not affecting other component(s). Operators most thoroughly examined in this respect include negation and adverbials like *almost* and *again*.

Thus, it has been widely observed that sentences like *Ali Baba opened Sesam again* (cf. von Stechow 1996: 88) allow at least for two readings. On the *repetitive* reading, the whole event of Ali Baba's opening Sesam happens twice, but on the *restitutive* one it is only necessary that the state of Sesam's being open had occurred before. Two readings of *again* strongly suggest that the result state is a distinct meaning component of VPs/vPs based on verbs like *open*. Accomplishments thus denote complex eventualities, that is, eventualities consisting of more than one subevental component.

Much trickier is to establish on empirical grounds how many components, two or three, the accomplishment event structure *exactly* has. The Ockham's razor clearly dictates to avoid excessive complexity of the theory if we can make a simpler alternative work, hence other things being equal, the two-way decomposition is to be preferred.

There are, however, a number of observations suggesting that the two-way decomposition runs into empirical complications. One argument in favor of a richer structure, directly relevant to the anticausativity puzzle discussed in the present paper, is developed in (Tatevosov 2008). Discussing failed attempt and partial success non-culminating readings, Tatevosov makes a point that whatever type of two-way decomposition one assumes, the difference between them cannot be captured. Because of space limitations we are not able to repeat this argument. Here is an outline of the idea.

Let us assume that the accomplishment event structure consists of exactly two subevents, say, the result state and the rest of the complex eventuality. A possible way of representing the predicate like 'John demolished the house', then, would be (25):

$$(25) \lambda e \exists s [\text{demolish}_D(e) \wedge \text{Agent}(\text{John})(e) \wedge \text{Theme}(\text{house})(e) \wedge \text{demolish}_S(s) \wedge \text{holder}(\text{house})(s) \wedge \text{cause}(s)(e)]$$

where **demolish_S** is the same state predicate as before, and **demolish_D** is a predicate that denotes dynamic components of the overall demolishing event.

Imagine, then, that we want to derive a non-culminating variant of this predicate. If the non-culmination equals to non-occurrence of at least one of the subevents in the actual world, as was argued in the previous section, the desired predicate can be given a quasi-formal analysis in (26) (the more elaborated theory of non-culmination will wait until Section 3.5):

$$(26) \lambda e \exists s [\text{demolish}_D(e) \wedge \text{Agent}(\text{John})(e) \wedge \text{Theme}(\text{house})(e) \wedge \text{demolish}_S(s) \wedge \text{holder}(\text{house})(s) \wedge \text{not.in.the.actual.world}(s) \wedge \text{cause}(s)(e)]$$

The crucial thing to note about (26) is that it does not tell us if the event predicate denotes partially successful actions or failed attempts. In fact, it denotes both. Events in

the extension of (26) that do occur in the actual world are dynamic events in which John is the Agent and the house is the Theme. Nothing in (26) specifies if the house undergoes any change or, despite the Agent's activity, retains the initial state. Hence, both types of eventualities fall under the denotation of (26). As we saw in Section 3.1, this is actually what we need to capture the range of interpretations of verbs like 'demolish, crumble' in Balkar, which possess both partial success and failed attempt interpretations. But if one tries to extend this analysis to verbs like 'tear', only compatible with the failed attempt interpretation, the problem arises.

If *zirt* 'tear' and *oj* 'demolish, crumble' are associated with the same event structure (below, in Section 3.4 we present arguments that this is indeed the case), we get (27), parallel to (26), as a semantic representation for the non-culminating predicate based on *zirt* 'tear':

$$(27) \lambda e \exists s [\text{tear}_D(e) \wedge \text{Agent}(\text{John})(e) \wedge \text{Theme}(\text{thread})(e) \wedge \text{tear}_S(s) \wedge \text{holder}(\text{thread})(s) \wedge \text{not.in.the.actual.world}(s) \wedge \text{cause}(s)(e)]$$

Up to the predicate and individual constants (27) is the same as (26). Therefore, like (26), (27) does not impose any explicit restrictions on how Agent's activity is related to the change in the Theme. But if the denotation of the event predicate in (26) contains demolishing events that do bring about some change in the Theme, even if this change is not sufficient for the Theme to enter the result state in the actual world, similar tearing events should be part of the denotation of (27). As we saw earlier, this is not the case: partially successful actions can be referred to by verbs like *oj* 'demolish', but not by verbs like *zirt* 'tear'. (27), however, does not tell us where this difference comes from.

Generalizing over this case, Tatevosov (2008) shows that whatever two-way decompositional representation we adopt, both verbs like *zirt* 'tear' and verbs like *oj* 'demolish, crumble' are predicted to possess both FA- and PS- readings. The distribution of subevental components between actual and non-actual worlds from Table 1 is impossible to derive, because the partial success and failed attempt interpretations (hence AP- and AS- verbs) are not distinguished explicitly by the semantic representation. And this happens because the two-way decompositional theory does not provide us with enough subevental structure.

Within the three-way decompositional theory, this problem does not arise, because failed attempt and partial success interpretations can be assigned distinct representations. In (28a-b) this is done in the same quasi-formal notation as in (26)-(27):

$$(28) \text{ a. Partial success: } \lambda e \exists e' \exists s [\text{demolish}_A(e) \wedge \text{Agent}(\text{John})(e) \wedge \text{cause}(e')(e) \wedge \text{demolish}_P(e') \wedge \text{Theme}(\text{door})(e') \wedge \text{cause}(s)(e') \wedge \text{demolish}_S(s) \wedge \text{holder}(\text{door})(s) \wedge \text{not.in.the.actual.world}(s)]$$

b. Failed attempt:

$$\lambda e \exists e' \exists s [\text{demolish}_A(e) \wedge \text{Agent}(\text{John})(e) \wedge \text{cause}(e')(e) \wedge \text{demolish}_P(e') \wedge \text{Theme}(\text{door})(e') \wedge \text{not.in.the.actual.world}(e') \wedge \text{cause}(s)(e') \wedge \text{demolish}_S(s) \wedge \text{holder}(\text{door})(s) \wedge \text{not.in.the.actual.world}(s)]$$

(28a-b) make the difference between failed attempts and partially successful actions explicit: the process subevent occurs in the actual world in (28a), but not in (28b). If we find a way to guarantee that verbs like *oj* ‘demolish, crumble’ can produce both (28a) and (28b) while *zirt* ‘tear’ only yields predicates like (28b) (this is done below in Section 3.5), their semantic characteristics will receive a principled explanation.

If the above suggestions are on the right track, and the three-way decomposition should in fact be preferred on empirical grounds, this has immediate consequences for what we expect about other diagnostics for subevental structure. Specifically, we predict that adverbials like ‘again’ should be three-way ambiguous, since the event structure now provides three scope possibilities in (29):

- (29) a. *again* [activity subevent – process subevent – result state subevent]
 b. activity subevent — *again* [process subevent – result state subevent]
 c. activity subevent – process subevent — *again* [result state subevent]

This prediction is borne out, as (30) with *zañıdan* ‘again’ indicates:

- (30) *alim eřik-ni zañıdan ac-ti.*
 Alim door-ACC again open-PST.3SG
 1. ‘Again, Alim opened the door (i.e., it happened twice that Alim opened the door).’
 2. ‘Alim again opened the door (i.e., it happened twice that the door opened).’
 3. ‘Alim opened the door again (i.e., the door was open twice).’

Due to a presupposition introduced by *again* (von Stechow 1996), an eventuality from the event description that falls under its scope has to occur twice. One possibility demonstrated in (30.3) is where *again* takes the narrowest scope over the result state only, hence it is the result state of being open that occurs twice. This is the restitutive reading of *again*. Another, repetitive reading obtains if *again* takes wide scope that includes all subevental components, (30.1), so the whole event of Alim’s opening the door occurs twice. Finally, (30.2) corresponds to the intermediate scope, whereby the change in the door plus the result state occur twice, but the activity does not.

If examples like (30) are indeed three-way ambiguous and if the number of readings induced by *again* does indeed reflect the number of subevental components in the accomplishment event structure, then (30) provides empirical evidence supporting to the rich predicate decomposition along the lines of (25). Two problems, however, are to be discussed to make sure that this evidence is valid.

First, there is some debate in the literature surrounding the issue of whether intermediate readings of *again* really exist. Secondly, some semanticists, while admitting that

the three readings of examples like (30) are real, put under suspicion the assumption that one needs three subevents to derive these three readings. Space limitations prevent us from discussing these issues in much detail, but a few comments seem to be necessary.

Discussing intermediate readings of *again*, Pylkkänen (2002) makes a case against rich decomposition involving three subevents; *again*, she argues, yields exactly two interpretations, hence accomplishments are to be decomposed into exactly two subevents.

As von Stechow also discusses, the intermediate scope is not available, which makes the CAUSE-BECOME decomposition <i.e., decomposition into three subevents> problematic... *Again* should be able to modify either the resultant state denoted by the root *√open* or the causing event introduced by CAUSE. (Pylkkänen 2002: 102–103)

Crucially, von Stechow (1996: 96) does not claim that intermediate readings of *again* do not exist. He comments on examples like *Randi caught Bockhirsch. Then he escaped. Tristan caught Bockhirsch again*:

The last sentence of this short story reports the repetition of the action of catching Bockhirsch: the action had occurred before, though with a different subject. If this is one particular reading of the sentence, then we can represent it by giving *again* intermediate scope. But we need not analyze the sentence that way. Taking the sentence in its restitutive sense is compatible with the scenario as well (von Stechow 1996: 96).

However, there are reasons to doubt that “compatibility” mentioned in this quotation can be taken as a strong argument against the existence of the intermediate scope. The reason is: what von Stechow says about the intermediate scope goes *mutatis mutandis* for the wide scope: the restitutive sense ‘be open again’ is compatible with the repetitive scenario, too. Therefore, if we recognize repetitive and restitutive readings at all, we have every reason to distinguish between restitutive and intermediate readings.

Another problem, to which the anonymous reviewer of this volume turns our attention, is more significant. She argues that the three readings in (30), including the intermediate one, can be derived within a two-way decompositional theory, hence the three-way decomposition is conceptually superfluous. Here is her argument, translated into the event semantic framework.

Let us assume that accomplishments are analyzed as in (31), which can be thought of as a simplified variant of the analysis (25):

$$(31) \quad ||\text{John open the door}|| = \lambda e \exists s [\text{Agent}(\text{John})(e) \wedge \text{cause}(s)(e) \wedge \text{open}(\text{door})(s)]$$

The analysis of repetitive and restitutive readings is straightforward: *again* takes scope either over the whole event of the result state:

$$(32) \quad \begin{array}{l} \text{a. } \lambda e \text{.again}(\lambda e' \exists s [\text{Agent}(\text{John})(e') \wedge \text{cause}(s)(e') \wedge \text{open}(\text{door})(s)])(e) \\ \text{b. } \lambda e \exists s [\text{Agent}(\text{John})(e) \wedge \text{cause}(s)(e) \wedge \text{again}(\lambda s' \text{open}(\text{door})(s'))(s)] \end{array}$$

(32a-b) represent the meanings ‘John had opened the door before and he opened it again’ and ‘The door had been open before and John caused it to be open again’. These are the repetitive and restitutive readings, respectively.

The intermediate reading of *again*, the reviewer indicates, can be derived by giving it the scope over cause, as in (33):

$$(33) \lambda e[\text{Agent}(\text{John})(e) \wedge \text{again}(\lambda e'\exists s[\text{cause}(s)(e') \wedge \text{open}(\text{door})(s)])(e)]$$

What happens again in (33) is that the door attains a state of being open due to a causing event for which no participants are specified. As the reviewer argues, this is precisely the intermediate interpretation in (30.2).

We agree completely with the reviewer that the three interpretations of clauses with *again* can indeed be effectively distinguished by the semantics in (32)-(33). We also agree that if one wants to analyze the intermediate reading by means of a two-way decompositional theory, (33) offers a suitable way of doing so. (Among other things, this implies that the range of interpretations induced by *again* does not correspond to the number of subevental components, hence *again* does not provide a precise diagnostic for the internal make-up of accomplishment predicates after all.)

However, we believe that the theory in (32)-(33) produces undesirable wider implications and is to be rejected. The essential premise of this type of theory is that whereas transitive accomplishments like *John opened the door* are analyzed as in (31), their intransitive (unaccusative) counterparts are assigned the representation in (34):

$$(34) \parallel \text{the door open} \parallel = \lambda e\exists s[\text{cause}(s)(e) \wedge \text{open}(\text{door})(s)]$$

Indeed, if the intermediate reading of *again*, in which the door opens twice, is analyzed as in (33), and in (33) the predicate modified by *again* is $\lambda e'\exists s[\text{cause}(s)(e') \wedge \text{open}(\text{door})(s)]$, it is exactly this predicate that denotes events corresponding to *The door opened*. (This is of course a variant of the causative theory of unaccusatives, see, e.g. Chierchia 2004.)

Crucially, with (31) and (34), brought together, the problem we started with in Section 2.1 re-appears immediately. The unaccusative change of state predicates and their transitive accomplishment counterparts only differ as to the specification of the Agent relation and an individual participant of this relation. This brings us back to the problem that the set of events in the extension of (31) is a subset of events in the extension of (34), hence the eventuality type of the two is necessarily the same. As we have already seen, this is not so, hence the analysis in (31) and (34) cannot be maintained.

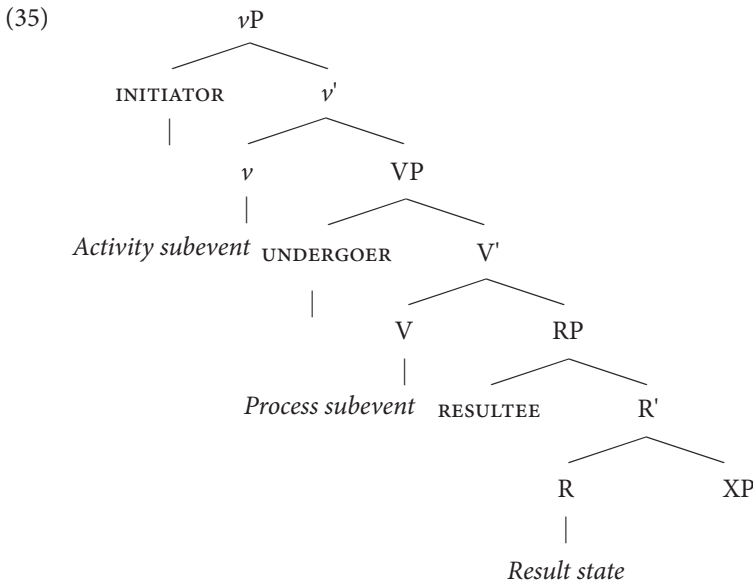
Let us summarize main results of this section. We presented an argument from non-culminating readings of accomplishments in Balkar that favor a rich predicate decomposition involving three subevents. We tested predictions this analysis makes for the semantic distribution of *again* and found out that this distribution is at least compatible with the proposed subevental architecture. We reviewed arguments against the three-way decomposition and concluded that some of them are not strong enough to make the two-way alternative a preferred option, while others intrinsically require assumptions that are not plausible for independent reasons.

In the subsequent sections we present a theory of three-way decomposition on which our analysis of anticausatives is based. Specifically, we will assume semantics in the spirit of Ramchand's First Phase Syntax theory, briefly characterized below.

3.3 Ramchand's theory of event structure

At the moment, the only fully elaborated theory relying explicitly on three-way decomposition we are aware of are Ramchand's (2002, 2003, 2008 and elsewhere) first phase syntax, and its variant adopted by Folli (2002). Ramchand assumes a radical constructionalist approach whereby the whole event structure is built syntactically, with no independent level(s) identical to or comparable with lexical conceptual structure, argument structure or so. All information an individual lexical item carries is that about syntactic heads projected by that item within the ν P phase. Interpretation of the event structure is determined by syntactic heads themselves: ν introduces an initiation/activity subevent, V refers to a process induced by that activity, and R(result) head denotes the result state brought about by the process. Thematic relations of arguments in specifier positions of ν , V, and R to corresponding subevents are fully determined by their structural positions: Spec- ν P is a position of the initiator of the activity, Spec-VP is where the undergoer of the process is located, and the Spec-RP position is interpreted as hosting the holder of the result state. The overall architecture of the articulated ν P is represented in (35).¹⁰ As Folli (2002) takes it:

... ν P introduces the causation event and licenses different types of external argument, VP specifies the nature of the change or process and licenses the object of change or process, RP gives the 'telos' of the event and licenses the object of result. (Folli 2002: 43–44)



10. Here we stick to Ramchand's original notation involving ν , V, and R, later re-labelled as *init*, *proc*, and *res*. We believe that this choice does not bear any theoretical import on the below discussion and analysis.

Ramchand's (2002, 2003, 2008) semantics for v , V , and R heads with minor simplifications and adjustments is represented in (36a-c):¹¹

- (36) a. $\| v \|^{wg} = \lambda P \lambda x \lambda e \exists e' [v'(e) \wedge \text{Initiator}(x)(e) \wedge \text{cause}(e')(e) \wedge P(e')]$
 b. $\| V \|^{wg} = \lambda P \lambda x \lambda e \exists s [V'(e) \wedge \text{Undergoer}(x)(e) \wedge \text{cause}(s)(e) \wedge P(s)]$
 c. $\| R \|^{wg} = \lambda x \lambda s [R'(s) \wedge \text{Resultee}(x)(s)]$

Examples of individual lexical entries are shown in (37), where coindexation of heads indicates that they share a participant:

- (37) a. *defuse*: [v_i, V_i]
 b. *push*: [v, V]
 c. *dance*: [v_i, V_i]

Thus, for instance, *push* is a transitive activity verb that projects an activity event structure consisting of two subevents, activity and process, with two distinct arguments, initiator and undergoer. *Dance* is associated with the same event structure, the only difference being that the initiator of the activity and undergoer of the process are identical, hence the event structure is unergative. Finally, encyclopedia entries associated with lexical items provide descriptive content for the event structure, that is, specify event predicates involved in the interpretation (v' , V' and R' in (36)).


3.4 Event structure of AP- and AS-verbs

We analyze both *oj* 'demolish, crumble' and *zirt* 'tear' as transitive accomplishments:

- (38) *oj* [v, V_i, R_i]
zirt [v, V_i, R_i]

Within the vP phase, both project v , V and R heads, hence for both the vP denotation consists of three subevents. From (36), for culminating (telic) sentences (39a) and (40a), we get (39b) and (40b) respectively.

- (39) a. *alim üj-nü oj-Ran-di.*
 Alim house-ACC demolish-PFCT-3SG
 'Alim took down the house.'
 b. $\| [{}_{vP} \text{Alim take down house}] \|^{wg} =$
 $\lambda e \exists e' \exists s [\text{demolish}_A(e) \wedge \text{Initiator}(\text{Alim})(e) \wedge \text{cause}(e')(e) \wedge$
 $\text{demolish}_P(e') \wedge \text{Theme}(\text{house})(e') \wedge \text{cause}(s)(e') \wedge \text{demolish}_S(s) \wedge$
 $\text{Resultee}(\text{house})(s)]$

11. The major departure from Ramchand's original proposal we assume here is that a superordinate head existentially closes the event variable introduced by a subordinate XP, rather than creating  of superordinate and subordinate subevents.

- (40) a. *alim xah-ni zirt-xan-di.*
 Alim thread-ACC tear-PFCT-3SG
 ‘Alim tore a thread.’
- b. $\| [\text{v}_p \text{ Alim tear thread}] \|^{wg} =$
 $\lambda e \exists e' \exists s [\text{tear}_A(e) \wedge \text{Initiator}(\text{Alim})(e) \wedge \text{cause}(e')(e) \wedge$
 $\text{tear}_p(e') \wedge \text{Theme}(\text{thread})(e') \wedge \text{cause}(s)(e') \wedge \text{tear}_s(s) \wedge$
 $\text{Resultee}(\text{thread})(s)]$

(39b) and (40b) denote the Agent’s destroying/tearing activities, eventualities that fall under the denotations of event predicates **demolish_A** and **tear_A** respectively. These activities bring about a process in the Theme (**demolish_p** and **tear_p**) that lead the Theme to the result state of being destroyed/torn (**demolish_s** and **tear_s**).

In (39b) and (40b) AS- and AP-verbs are treated on a par. A possible alternative could be a suggestion that these classes of verbs are associated with different event structures. Treating verbs like *open* and *break* as accomplishments of the type $[v, Vi, Ri]$, Ramchand (2008: 81–83) discusses transitive degree achievements like *dry* and *lengthen*, arguing that they lack the resultative projection. Folli (2002) reaches the same conclusion as to the structure of verbs like *diminuire* ‘decrease’, *augmentare* ‘increase’, and *cambiare* ‘change’ in Italian. Folli convincingly shows that it is the lack of R (Rv, in her terminology) is what makes them different from verbs like *chiudere* ‘close’, which, like their English counterparts, are of type $[v, Vi, Ri]$. Apparently, in terms of telicity, *dry* differs from *open*, and *diminuire* from *chiudere* in a similar way as *oj* differs from *zirt*: [+R] verbs yield telic and [–R] verbs both atelic and telic event predicates. If *oj* ‘demolish, crumble’ in Balkar patterns with degree achievements like *dry* in English, AS- and AP-verbs are to be analyzed in different ways, as in (41):

- (41) a. *oj* $[v, V]$
 b. *zirt* $[v, Vi, Ri]$

If (41) is correct, telicity of AS- and AP-verbs comes from different sources. *zirt* ‘tear’ is telic because of a result state specified in the event structure. *oj* ‘demolish, crumble’, on the other hand, acquires telic interpretation in the same way as degree achievements and other types of incremental verbs (e.g., incremental theme activities like *write*, *read* or *eat* or incremental path predicates like *run a mile*) – through the homomorphism from the part structure of the Theme, path or abstract measurement scale to the part structure of the process denoted by V.

There is empirical evidence, however, supporting (38) rather than (41): it can be shown that in Balkar AP-verb do project the result phrase, hence (41a) cannot be correct. Consider light verb constructions (LVCs) based on the light verb *tur* ‘stand’. Essentially, *tur* is an eventuality type modifier sensitive to the event structure of a predicate it applies to. For clear instances of activity verbs of type $[v, V]$, e.g., for incremental

theme verbs like *write*, *read*, *eat*, etc., the LVC with *tur* ‘stand’ yields the progressive reading, exemplified in (42):

- (42) *alim baxca-sı-n sür-üp tur-a-dı.*
 Alim field-3-ACC plough-CONV stand-PRS-3SG
 1. ‘Alim is ploughing the field.’
 2. ??‘Alim is in a state of having ploughed the field.’

But if a verb possesses an accomplishment event structure [v, V_p, R_p], the resultative reading obtains:

- (43) *alim eşik-ni aç-ıp tur-a-dı.*
 Alim door-ACC open-CONV stand-PRS-3SG
 1. ‘Alim is in a state of having opened the door.’
 2. *‘Alim is opening the door.’

Alternative readings – resultative for (42) and progressive for (43) – are not available, cf. (42.2) and (43.2). Therefore, the generalization is clear: the progressive interpretation obtains iff the verb does not project RP; the resultative interpretation obtains iff the verb does project RP. LVCs with *tur* thus provide a suitable diagnostic for whether the semantic representation of a predicate contains a result state. Applying this diagnostic to AP-verbs, one finds out that these verbs pattern with true accomplishments, not with activities:¹²

- (44) *işci üj-nü oj-up tur-a-dı.*
 worker house-ACC demolish-CONV stand-PRS-3SG
 1. ‘The worker is in a state of having taken down the house.’
 2. *‘The worker is taking down the house.’

Another argument pointing towards the same conclusion can be based on Folli’s (2002: 120) observation that true [v, V] predicates, unlike [v, V, R] predicates, resist adverbial modification by ‘completely’ and similar adverbials (cf. ??*Gianni ha diminuito la temperatura completamente* ‘John decreased the temperature completely’). Unlike [v, V] degree achievements, verbs like *oj* in Balkar readily accept ‘completely’-type adverbials and must therefore be associated with the [v, V, R] event structure.

- (45) *işci üj-nü bitewlej oj-du.*
 worker house-ACC completely demolish-PST.3SG
 ‘The worker demolished the house completely.’

We conclude, therefore, that AP-verbs like *oj* ‘demolish, crumble’ and AS-verbs like *zirt* ‘tear’ possess the same event structure, precisely as (38) states, and their different behavior in non-culminating contexts as well as under anticausativization should be attributed to a grammatical characteristic other than event structure. We will try to

12. We are grateful to the anonymous reviewer for turning our attention to the similarity between Balkar LVCs and the Japanese *te iru* construction.

identify this characteristic in the next section, where non-culminating interpretations of *oj* and *zirt* are examined.

3.5 Non-culmination

(39b) and (40b) above only account for the telic interpretation of AS- and AP-verbs. What we need at this point is an analysis of their atelic, non-culminating readings. Since it is the range of non-culminating interpretations that tells AP- and AS-verbs apart, as represented in Table 1 repeated as Table 3, this analysis plays a central role in our account for the eventuality type of the anticausative.

Following much recent work on non-culmination (e.g., Koenig & Muansuwan 2001, Bar-el *et al.* 2005), we suggest that events referred to by non-culminating accomplishment predicates are parts or stages of events from the denotation of culminating ones. Non-culminating predicates, in other words, denote events not “developed” enough to yield culmination. Take ‘take down a house’ from (46) as an example.

- (46) *išci eki kün üj-nü oj-яан-дт.*
 worker two day house-ACC demolish-PFCT-3SG
 ‘The worker was involved in taking down the house for two days.’ (lit. ‘The worker took down the house for two days.’)

The complete event of taking down a house involves Agent’s activity, a corresponding change of state of the Theme and the resultant state of the house being demolished. (46), however, describes a “smaller” eventuality in which the Agent does not produce sufficient efforts to bring about change in the Theme or the house does not undergo sufficient change to count as a demolished one. Up to some point, complete and incomplete eventualities develop in exactly the same way, and the difference between them has to do with the fact that the latter stop at that point, while the former reach culmination.

With Koenig & Muansuwan (2001) and Bar-el *et al.* (2005), we assume the analysis of non-culmination based on *inertia worlds*. Both proposals rely on the same idea: non-culmination implies that the complete eventuality exists in inertia worlds, that is, in all worlds which are “exactly like the given world up to the time in question and in which the future course of events ... develops in ways most compatible with the past course of events”, to use Dowty’s (1979: 148) original formulation. Saying that the event of taking down the house culminates in inertia worlds thus means that in

Table 3. Semantic characteristics of AP and AS verbs

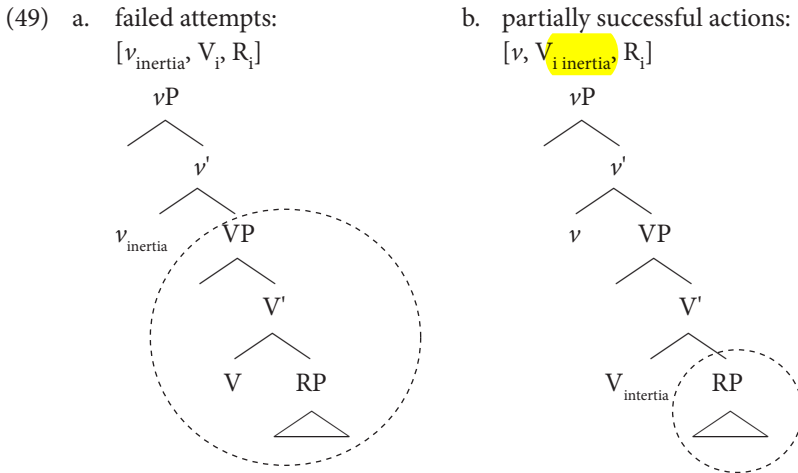
	AP-verbs	AS-verbs
Failed attempt interpretation	+	+
Partial success interpretation	+	–
Atelic anticausative	+	–

all worlds in which nothing out of the ordinary or unexpected happens the house attains the result state of being demolished.

As in Tatevosov (2008), we assume that non-culmination comes out as a part of the denotation of eventive heads: ν and V appear in two varieties, culminating in (47a-b) and non-culminating as in (48a-b) (see Tatevosov 2008) for the detailed motivation and discussion of possible alternatives):

- (47) a. $\|\nu\|^{\text{w},g} = \lambda P \lambda x \lambda e \exists e' [v'(e) \wedge \text{Initiator}(x)(e) \wedge \text{cause}(e')(e) \wedge P(e')]$
 b. $\|V\|^{\text{w},g} = \lambda P \lambda x \lambda e \exists s [V'(e) \wedge \text{Undergoer}(x)(e) \wedge \text{cause}(s)(e) \wedge P(s)]$
- (48) a. $\|\nu_{\text{inertia}}\|^{\text{w},g} = \lambda P \lambda x \lambda e [v'(e) \text{ in } w \wedge \text{Initiator}(x)(e) \text{ in } w \wedge \forall w' [w' \text{ is an i-world for } w \text{ and } e \rightarrow \exists e' \exists e'' [\text{cause}(e'')(e') \text{ in } w' \wedge e < e' \text{ in } w' \wedge P(e'') \text{ in } w']]]$
 b. $\|V_{\text{inertia}}\|^{\text{w},g} = \lambda P \lambda x \lambda e [V'(e) \text{ in } w \wedge \text{Undergoer}(x)(e) \text{ in } w \wedge \forall w' [w' \text{ is an i-world for } w \text{ and } e \rightarrow \exists e' \exists e'' [\text{cause}(e'')(e') \text{ in } w' \wedge e < e' \text{ in } w' \wedge P(e'') \text{ in } w']]]$

In (48a), the denotation of non-culminating ν involves the Agent's activity occurring in the actual world, while the rest of eventuality only exists in inertia worlds; in this way, the failed attempt interpretation obtains. V_{inertia} in (48b) introduces the process occurring in the actual world, the result state only being "moved" to the inertia. This is represented in (49a-b) where a part of the overall eventuality that goes to inertia worlds is circled:



Therefore, the failed attempt and partial success interpretations are different ways of distributing subevental components between actual and inertia worlds. This difference is ultimately reduced to different configurations of culminating and non-culminating eventive heads, as represented in Table 4.

Table 4. Event structures of non-culminating accomplishments

	Culminating	Non-culminating	
		partial success	failed attempt
Agent's activity	Actual world	Actual world	Actual world
Process in the Theme	Actual world	Actual world	Inertia worlds
Result state	Actual world	Inertia worlds	Inertia worlds
Event structure	$[v, V_i, R_i]$	$[v, V_{i \text{ inertia}}, R_i]$	$[v_{\text{inertia}}, V_i, R_i]$

This view suggests that non-culmination is rooted in where the denotation of event predicates is computed, not at the higher levels of aspectual and temporal functional structure (see Bar-el *et al.* 2005 and Tatevosov & Ivanov 2009 for suggestions about the role of this higher structure in the computation of meaning of clauses with the inertia modality built into the semantic representation of vP). In this way, the present proposal recapitulates the fundamental insight of Koenig and Muansuwan's approach to non-culmination and captures observation from Section 2: the non-culmination is built into the semantics of uninflected verbal predicates before they combine with tense (and whatever other functional) morphology.

If (49a-b) are correct, the difference between AP-verbs like *oj* and AS-verbs like *zirt* can be captured by assuming the following lexical specifications:

- (50) a. *oj* $[v_{(\pm\text{inertia})}, V_{i(\pm\text{inertia})}, R_i]$
 b. *zirt* $[v_{(\pm\text{inertia})}, V_{i(-\text{inertia})}, R_i]$

According to (50), *oj* has two possible sources of non-culmination, v_{inertia} and V_{inertia} . For *zirt*, the single source, v_{inertia} , is only available.

Semantic representations of two non-culminating readings of *oj* are given in (51b-c); the single non-culminating reading of *zirt* is represented in (52b).

- (51) a. *išci eki kün üj-nü oj-Ran-dı.*
 worker two day house-ACC demolish-PFCT-3SG
 'The worker was involved in taking down the house for two days'
- b. $[v_{\text{inertia}}, V_i, R_i]$ (failed attempt):
 $\|vP\|^{w,g} = \lambda e [\text{demolish}_A(e) \text{ in } w \wedge \text{Initiator}(\text{worker})(e) \text{ in } w \wedge \forall w' [w' \text{ is an } i\text{-world for } w \text{ and } e \rightarrow \exists e' \exists e'' \exists s [\text{cause}(e'')(e') \text{ in } w' \wedge e' < e \text{ in } w \wedge \text{demolish}_p(e'') \text{ in } w' \wedge \text{Theme}(\text{house})(e'') \text{ in } w' \wedge \text{cause}(s)(e'') \text{ in } w' \wedge \text{demolish}_c(s) \text{ in } w' \wedge \text{Resultee}(\text{house})(s) \text{ in } w']]$

- c. [v, V_{inertia_i} , R_i] (partial success):

$$\|vP\|^{w,g} = \lambda e \exists e' [\text{demolish}_A(e) \text{ in } w \wedge \text{Initiator}(\text{worker})(e) \text{ in } w \wedge \text{cause}(e')(e) \text{ in } w \wedge \text{demolish}_P(e') \text{ in } w \wedge \text{Theme}(\text{house})(e') \text{ in } w \wedge \forall w' [w' \text{ is an i-world for } w \text{ and } e \rightarrow \exists e'' \exists s [\text{cause}(s)(e'') \text{ in } w' \wedge e'' < e' \wedge \text{demolish}_S(s) \text{ in } w' \wedge \text{Resultee}(\text{house})(s) \text{ in } w']]]$$

- (52) a. *fatima eki minut xalı-nı zırt-xan-dı.*
 Fatima two minute thread-ACC tear-PFCT-3SG
 ‘Fatima tried to tear a thread for two minutes’

- b. [v_{inertia} , V_i , R_i] (failed attempt):

$$\|vP\|^{w,g} = \lambda e [\text{tear}_A(e) \text{ in } w \wedge \text{Initiator}(\text{fatima})(e) \text{ in } w \wedge \forall w' [w' \text{ is an i-world for } w \text{ and } e \rightarrow \exists e' \exists e'' \exists s [\text{cause}(e'')(e') \text{ in } w' \wedge \text{tear}_P(e'') \text{ in } w' \wedge e' < e \text{ in } w \wedge \text{Theme}(\text{thread})(e'') \text{ in } w' \wedge \text{cause}(s)(e'') \text{ in } w' \wedge \text{tear}_S(s) \text{ in } w' \wedge \text{Resultee}(\text{thread})(s) \text{ in } w']]]$$

Thus, (51b) and (52b) denote demolishing/tearing activities occurring in the actual world in which the worker/Fatima is the Initiator. In all inertia worlds, these activities culminate bringing about the process in the house/thread that leads the house/thread to the result state of being demolished/torn. (52c) is an event predicate that denote the demolishing activities *and* a process in the theme brought about by these activities. In inertia worlds this process culminates, and the theme enters the result state of being demolished. Therefore, (51)-(52) account for the range of interpretations of AP- and AS-verbs like *oj* ‘demolish, crumble’ and *zırt* ‘tear’ in transitive clauses.

Therefore, what accomplishments like ‘demolish, crumble’ or ‘tear’ in Balkar have in common in our system is that VP can be merged with either v or v_{inertia} . They differ as to whether RP can be merged with V_{inertia} : this option is available for AP-verbs like ‘demolish, crumble’, but not for AS-verbs like ‘tear’. A separate question is of course why this should be the case. In Tatevosov (2008) it has been suggested that what makes AS-verbs (‘tear’, ‘wake up’, ‘break’ and other items listed in (13)) incompatible with V_{inertia} is a near-punctual character of processes that lead the Theme to a result state. Informally, V_{inertia} wants the process to split between the actual and inertia worlds, but the process can only occur all at once and does not favor such a split. For the sake of space, we do not go into details here, see Tatevosov (2008) for further discussion.

Now that we developed a semantic analysis of non-culminating readings of AP- and AS-accomplishments, we have everything we need to introduce the last ingredient of our proposal – the analysis of anticausativization that explains why the AP-anticausatives retain and AS-anticausatives lose the non-culminating interpretation.

3.6 Anticausativization

With Levin & Rappaport Hovav (1995), Rappaport Hovav & Levin (1998), Lidz (1999), Davis & Demirdache (2000), Reinhart (2000, 2002), Chierchia (2004), Alexiadou *et al.*

(2006), Koontz-Garboden (2007, 2008), among others, we assume that anticausatives are inherently causative. Within the current system, this amounts to the suggestion that they possess the same tripartite structure as transitive accomplishments discussed so far. Syntactically, the anticausative is associated with the same $[v, V_p, R_i]$ event structure as a corresponding transitive verb, and semantically there still is an initiating sub-event located in v .

More specifically, we suggest that the anticausative morpheme $-(Y)l$ in Balkar merges as the v head. The main piece of morphosyntactic evidence supporting this suggestion is that the anticausative is complementarily distributed with the causative. Consider a non-derived intransitive achievement verb *sm* ‘break, intr.’. When causativized, it creates a derived accomplishment *sındır* ‘break, tr.’ exemplified in (53):

- (53) *marat illew-nü sm-dır-Ran-dı.*
 Marat toy-ACC break-CAUS-PFCT-3SG
 ‘Marat broke the toy.’

In all respects (case marking, eventuality type, adverbial modification, anaphor binding, etc., see Lyutikova et al. 2006) derived accomplishments like *break* in (53) are identical to non-derived AS-verbs like *tear* discussed above, except for one thing: such verbs do not allow for anticausativization:

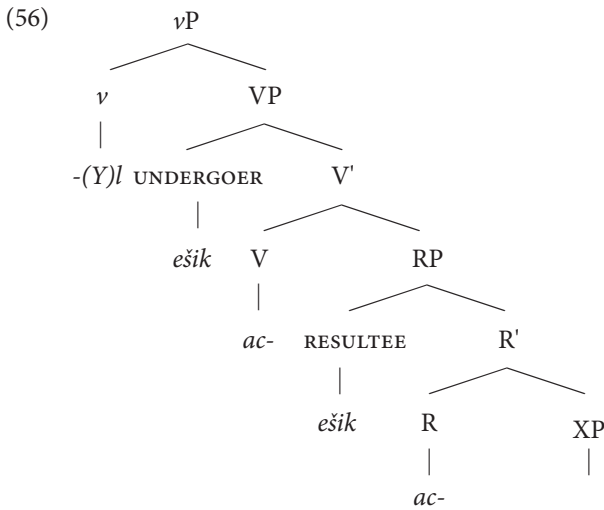
- (54) **illew sm-dır-ıl-Ran-dı.*
 toy break-CAUS-ANTICAUS-PFCT-3SG
 ‘The toy broke.’¹³

If, as most current literature on causativization suggests (see, e.g., Fisičenko 2006) and references therein), the causative morpheme *-dır* merges as the v head, the most straightforward explanation for (54) is that the anticausative morpheme $-(Y)l$ is v , too, hence cannot co-occur with *-dır* within the same vP .

If these observations are correct, the anticausative in (55) would be analyzed as in (56):

- (55) *eşik ac-ıl-dı.*
 door open-ANTICAUS-PST.3SG
 ‘The door opened.’


13. Note that ungrammaticality of (54) can hardly be an instance of blocking. One could suggest that (54) is not available because there exists a non-derived verb *sm* ‘break, intr.’, meaning roughly the same thing. Cross-linguistically, however, triples of verbs are readily available that consist of non-derived change-of-state unaccusatives, corresponding causatives, and anticausatives derived from those causatives. One of the languages in which such a pattern is attested is Russian, cf. *soxnut* ‘dry, intr.’ – *sušit* ‘dry, tr.’ – *sušit’sja* ‘dry, anticaus.’



Semantically, we suggest that the anticausative (of the modifier logical type $\langle\langle s,t\rangle,\langle s,t\rangle\rangle$) introduces a causing subevent, existentially bound to begin with, with no initiator. The event argument of its VP complement gets externalized:

$$(57) \quad \|\nu_{\text{anticaus}}\|^{\text{w.g}} = \lambda P \lambda e \exists e' [\text{cause}(e)(e') \wedge P(e)]$$

This semantics is an instance of what Koontz-Garboden (2008) calls ‘existential binding’ theory of the anticausative. We believe, however, that nothing in the current line of reasoning makes our proposal incompatible with alternative semantic theories, e.g. **with the reflexivization theory advocated by Chierchia (2004)** and Koontz-Garboden (2007, 2008). Comparing advantages of these theories goes far beyond the scope of the present study, however.

Among other things, the semantics in (57) makes sure that there cannot be a non-culminating variant of ν_{anticaus} . The non-culminating ν guarantees that caused subevents only occur in inertia worlds. But according to (57), it is exactly caused subevents that are externalized by ν_{anticaus} . As a consequence, *in the actual world* the extension of an event predicate derived by the non-culminating ν_{anticaus} would be empty. This observation plays a crucial role in our account for why ν_{anticaus} minates the activity-related non-culmination.

Let us look at what happens when VP is projected in the course of syntactic derivation. At this stage, for both AS- and AP-accomplishments there are three possibilities: merge plain ν whose semantics is represented in (47a), merge non-culminating ν_{inertia} in (48a), or merge the anticausative ν_{anticaus} in (57). The first two options yield transitive culminating and non-culminating clauses discussed in Sections 3.4 and 3.5 respectively. The third option produces an anticausative clause like that in (55)-(56).

Crucially, since the anticausative morpheme merges as the ν head, it is complementarily distributed with the “plain” ν and ν_{inertia} . Besides, $\nu_{\text{anticaus inertia}}$, as we have

just seen, is not available to begin with. As a result, the ν P-related non-culmination, that is, the failed attempt interpretation, disappears under anticausativization.

Now we can provide semantic representations for both AP- and AS-anticausatives repeated as (58a-b) on their telic, culminating interpretation.

- (58) a. *üj (eki zil-Ra) oj-ul-Ran-dt.*
 house two year-DAT demolish-ANTICAUS-PFCT-3SG
 ‘The house went into ruin (in two years).’
- b. *xalı (eki minut-xa) zırt-ıl-Ran-dt.*
 thread two minute-DAT tear-ANTICAUS-PFCT-PST.3SG
 ‘The thread tore (in two minutes).’

Using the standard semantics for V and R heads in (36b-c) and applying all functions to all arguments, we get the following (strictly parallel) semantic representations of VPs that are parts of anticausative clauses in (58a-b):

- (59) a. $\llbracket [_{\nu P} \text{house demolish}] \rrbracket^{w,g} = \lambda e \exists s [\text{demolish}_p(e) \wedge \text{Theme}(\text{house})(e) \wedge \text{cause}(s)(e) \wedge \text{demolish}_s(s) \wedge \text{Resultee}(\text{house})(s)]$
- b. $\llbracket [_{\nu P} \text{thread tear}] \rrbracket^{w,g} = \lambda e \exists s [\text{tear}_p(e) \wedge \text{Theme}(\text{thread})(e) \wedge \text{cause}(s)(e) \wedge \text{tear}_s(s) \wedge \text{Resultee}(\text{thread})(s)]$

(59a-b) denote demolishing/tearing processes to which the house/thread stands in the Theme relation, and there is a (result) state of being demolished/torn caused by those processes that hold of the house/thread. When VPs in (59) merge with ν_{anticaus} , the operator in (57) applies to event predicates in (59a-b) yielding ν P denotations in (60):

- (60) a. $\llbracket [_{\nu P} -I [_{\nu P} \text{house demolish}]] \rrbracket^{w,g} = \lambda e \exists e' \exists s [\text{cause}(e)(e') \wedge \text{demolish}_p(e) \wedge \text{Theme}(\text{house})(e) \wedge \text{cause}(s)(e) \wedge \text{demolish}_s(s) \wedge \text{Resultee}(\text{house})(s)]$
- b. $\llbracket [_{\nu P} -I [_{\nu P} \text{thread tear}]] \rrbracket^{w,g} = \lambda e \exists e' \exists s [\text{cause}(e)(e') \wedge \text{tear}_p(e) \wedge \text{Theme}(\text{thread})(e) \wedge \text{cause}(s)(e) \wedge \text{tear}_s(s) \wedge \text{Resultee}(\text{thread})(s)]$

Event predicates in (60a-b), similarly to those in (59a-b), denote demolishing/tearing processes that cause the Theme to enter the result state. The contribution of the anticausative is a condition that there exist an eventuality that brings these processes about. In this sense, anticausatives refer to externally caused changes of state, cf. related notions of external and internal causation discussed extensively in Levin & Rappaport Hovav (1995), Rappaport Hovav & Levin (1998) and much subsequent work. However, the external causing subevent is not associated with any characterizing event predicate and thus lacks any descriptive properties. All we know about this subevent is its mere existence.

Projecting a transitive clause, we have a choice between ν and ν_{inertia} . Projecting a corresponding anticausative clause we have no choice: ν_{anticaus} is obligatorily merged. No ambiguity is thus introduced at the ν P level: we can only make ν Ps in (60a-b) out of VPs in (59a-b). Anticausativization cannot affect ambiguity that comes about at the

VP level, however. If the VP denotation is built upon V_{inertia} , the resulting non-culminating interpretation passes on through the anticausative v_{anticaus} . In this way, the VP-related non-culmination, that is, the partial success interpretation, survives under anticausativization. Consider again (12b) repeated as (61):

- (61) *üj eki zıl oj-ul-Ran-di.*
 house two year demolish-ANTICAUS-PFCT-3SG
 ‘The house was decaying for two years.’ (lit. ‘The house went into ruin for two years.’)

In (61), VP contains V_{inertia} that yields a non-culminating VP denotation in (62):

- (62) $\| [_{\text{VP}} \text{ house demolish}] \|^{w,g} = \lambda e [\text{demolish}_p(e) \text{ in } w \wedge \text{Theme}(\text{house})(e) \text{ in } w \wedge \forall w' [w' \text{ is an } i\text{-world for } w \text{ and } e \rightarrow \exists e' \exists s [\text{cause}(s)(e') \text{ in } w' \wedge e < e' \text{ in } w \wedge \text{demolish}_c(s) \text{ in } w' \wedge \text{Resultee}(\text{house})(s) \text{ in } w']]]$

Combining this VP with v_{anticaus} yields the vP denotation in (63):

- (63) $\| [_{vP} -l [_{\text{VP}} \text{ house demolish}]] \|^{w,g} = \lambda e \exists e' [\text{cause}(e)(e') \text{ in } w \wedge \text{demolish}_p(e) \text{ in } w \wedge \text{Theme}(\text{house})(e) \text{ in } w \wedge \forall w' [w' \text{ is an } i\text{-world for } w \text{ and } e \rightarrow \exists e' \exists s [\text{cause}(s)(e') \text{ in } w' \wedge e < e' \wedge \text{demolish}_c(s) \text{ in } w' \wedge \text{Resultee}(\text{house})(s) \text{ in } w']]]$

(63) denotes demolishing events brought about by some external cause in the actual world with the house as their undergoer. In all inertia worlds, these events cause the undergoer to attain a state of being demolished.

If (62)-(63) is a plausible story of how the atelic anticausative is derived from the AP-verb *oj* ‘demolish, crumble’, we can predict, correctly, the ungrammaticality of (64) containing the atelic anticausative from AS-verb:

- (64) **xalı eki minut zırt-ıl-Ran-di.*
 thread two minute tear-ANTICAUS-PFCT-PST.3SG
 ‘The thread tore for two minutes.’

(64) is ungrammatical since V_{inertia} is not available for AS-verbs to begin with, and v_{inertia} , the only source of non-culmination for such verbs, is out of play in anticausative clauses.

Going back to the question we asked in Introduction if transitive predicates only differ from their anticausative counterparts as to the presence of the external argument, we can now conclude that the answer the Balkar material invites us to offer is negative. In fact, it is a crucial aspect of the analysis of anticausative predicates in (60) and (63) that events in their denotations are different from those in the denotation of corresponding transitive accomplishments in (51)-(52). Essentially, the former denote sets of processes that happen to the undergoer, the former refer to sets of initiating/causing activities. And since these two types of denotation are different, we do not expect that their eventuality types are necessarily identical. In transitive clauses atelicity may show

up at either ν P or VP levels, but the anticausative effectively eliminates the former possibility, and can only be atelic if atelicity is introduced as soon as VP is projected.

This completes our story about interaction between anticausativization and eventuality type of a predicate. However, the analysis developed here seems to carry a few wider theoretical implications that will be briefly discussed in the concluding section.

4. Conclusion


Various interactions between argument structure and eventuality type are currently attracting much attention (see a recent survey Levin & Rappaport Hovav 2005 and references therein). Many linguistic theories approaching the issue develop an articulated architecture of the verbal domain to account for both syntactic structure and semantic interpretation of natural language predicates. A promising research program is to derive the argument structure and eventuality type of a verb from the same source, e.g., from the (lexical-)syntactic structure associated with that verb. One of the intriguing questions about the architecture of this “lower” part of syntax is how the valence-changing derivations exactly work. If these derivations do not merely introduce/suppress arguments, but manipulate subevental heads, interactions between argument structure and eventuality type can be accounted for in a principled way.

In this paper, we contribute to this field by examining one specific type of such an interaction not much addressed in the literature so far — that between anticausativization and (a)telicity of a verbal predicate. More specifically, we have focused on how anticausativization affects the range of interpretations of non-culminating accomplishments. Evidence from Karachay-Balkar strongly suggests that proper understanding of this phenomenon has far-reaching consequences for the analysis of (the denotation of) ν P (since it calls for the rich predicate decomposition) and for the lexical characteristics of verbs (since verbs projecting the same eventive heads can differ with respect to non-culmination). We presented arguments that inertia modality can be introduced at different levels within ν P, and this explains why different kinds of non-culmination are affected by the anticausative morpheme in different ways.

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