

## Action/Result in Indonesian Accomplishment Verbs and the Agent Control Hypothesis

In this paper, I document and analyze the strong link between the agentivity of the external argument of causative accomplishment verbs and their non-culminating interpretations in Indonesian. Descriptively, I present a wide range of novel examples in Indonesian from my original fieldwork to support the cross-linguistic robustness of the so-called Agent Control Hypothesis (Demirdache and Martin 2015; Martin 2015, 2019, 2020). Theoretically, adapting the recent approach developed by Martin (2015, 2020) to Indonesian, I propose that the relevant link is accounted for by the interaction of the different number of sub-events in agentive vs. non-agentive causation (namely, the agent's action + theme's result state sub-events in the former vs. only the theme's result state sub-event in the latter) with the Maximal Stage Requirement of the partitive perfective operator  $PFV_M$  (Krifka 1989; Koenig and Muansuwan 2000; Altshuler 2014).

**1. INTRODUCTION.**<sup>1</sup> Over the last five years or so, there has emerged an important cross-linguistically salient generalization regarding a particular interpretation of causative accomplishment verbs, captured under the name of the *Agent Control Hypothesis* (ACH) (Demirdache and Martin 2015; Martin 2015, 2019, 2020). The ACH essentially states that a causative accomplishment verb admits non-culminating, zero change-of-state (CoS) interpretations in the presence of an agentive/volitional argument, but not of a causer/non-volitional argument.

The purpose of this paper is to investigate the syntactic structure and semantic representation of causative accomplishment verbs in Indonesian, a language which has heretofore never been studied with particular focus on the afore-mentioned generalization. Examples (1) and (2) show that the ACH regulates the strong correlation in Indonesian between non-culminating, zero CoS interpretations of causative accomplishment verbs such as *membakar* 'to burn' and the agentivity of their external argument (i.e., *Mas Haris* 'Brother Haris' in (1) vs. *api* 'fire' in (2)).

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(1) Mas Haris membakar sampah kemarin, tapi tidak terbakar sama sekali.  
brother Haris burn trash yesterday but NEG burn at.all  
Literal. ‘Brother Haris burned the trash yesterday, but it didn’t burn at all.’ (Agent)

(2) Api membakar sampah kemarin, #tapi tidak terbakar sama sekali.  
fire burn trash yesterday but NEG burn at.all  
Literal. ‘A fire burned the trash yesterday, but it didn’t burn at all.’ (Causer)

I will provide further data from my original fieldwork to support the ACH in Indonesian in the rest of this paper. I will then build a new analysis of the correlation between agentivity and non-culmination according to which agentive causation is to be factored into two components – action and result – whereas non-agentive causation consists of only the result component, an analysis which draws insights from Martin’s (2015, 2020) recent approach to the ACH.

The paper is structured as follows. In section 2, I will first introduce the ACH and its cross-linguistic landscape, together with a concise overview of the existing analysis of the generalization by Martin (2015, 2020). In section 3, I will present core data illustrating non-culminating, zero CoS interpretations associated with various causative accomplishment verbs in Indonesian such as *bunuh* ‘to kill’, *tutup* ‘to close’, and *bakar* ‘to burn’. The data will be used to confirm the typological robustness of the ACH from the perspective of Indonesian. This is the main empirical contribution of this paper. In section 4, I address the question why the relevant interpretations are possible with agentive causation, but not with non-agentive causation, and put forth an account of this agentivity-sensitive split pattern, drawing on a recent approach to the ACH developed by Martin (2015, 2020), briefly reviewed in section 2. Section 5 is the conclusion.

## 2. BACKGROUND: THE ACH, SUB-EVENTS AND THE PARTITIVE OPERATOR.

As stated in the introduction, the ACH concerns the availability of non-culminating, zero CoS construals associated with accomplishment verbs depending on the agentivity of their external argument referent. The original definition of the ACH is given in (3) (see also note 2).

(3) Agent Control Hypothesis (ACH) (Demirdache and Martin 2015: 201)

The availability of non-culminating construals for accomplishments correlates with the control of the agent over the described event: whenever an accomplishment ... admits a non-culminating construal, this is the case only if we can ascribe agenthood to the subject. If the subject of the very same verb is a (pure) causer, culmination cannot be canceled.

Since the ACH was originally proposed by Demirdache and Martin (2015) (see also Martin (2015, 2019, 2020) and Martin and Schäfer (2015) for further developments and consequences of the ACH), the hypothesis has since been shown to receive ample confirmation from a wide range of genetically unrelated (families of) languages. Data from some representative examples of four typologically distinct languages (i.e., Halkomelem/Saanich, Japanese, Mandarin Chinese, and Abui) are given below to support the cross-linguistic robustness of the ACH.<sup>2</sup> The other languages with non-culminating accomplishment readings restricted by the agentivity of the external argument include Thai (Koenig and Muansuwan 2000), Korean (Park 1993; van Valin 2005; Lee 2015; Beavers and Lee in press), Hindi (Singh

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<sup>2</sup> Lee’s (2015) ‘Subject Intention Generalization’, as defined in (i), also captures the essential insight behind the ACH that agentivity has profound repercussions on the (non-) culmination of the VP-denoted event.

- (i) Subject Intention Generalization (Lee 2015:107)  
Non-occurrence of an event requires the subject’s intention regarding the event.

1998), Malagasy (Travis 2000, 2005), Tamil (Pederson 2008), Tagalog (Dell 1983; Alonso-Ovalle and Hsieh 2017, 2018), Karachay-Balkar, Mari, Bagwalak (Tatevosov and Ivanov 2009), and Adyghe (Arkadiev and Letuchiy 2009).

(4) Salish (Halkomelem/Saanich) (Jacobs 2011; Kiyota 2008)

- a. niʔ cən ɟa:y-t t<sup>h</sup>ə spəʔəθ ʔiʔ ʔəwə niʔ-əs ɟa:y. (Agent)  
 AUX 1.SBJ die-CTR DET bear and NEG AUX-3SG.SBJ die  
 ‘#I killed the bear, but it didn’t die.’
- b. ləʔə qʂən k<sup>w</sup>əʔ q<sup>w</sup>əy-nəx<sup>w</sup> tə spéʔəs, #ʔiʔ ʔawa s-q<sup>w</sup>əy. (Causer)  
 AUX 1.SBJ INF die-NCTR.TR DET bear ACC NEG NOM-die  
 ‘#I (accidentally) killed the bear, but it didn’t die.’

(5) Japanese (cf. Tsujimura 2003)

- a. Megumi-ga doa-o sime-ta-kedo, zenzen simara-naka-tta-nda-yo-ne. (Agent)  
 Megumi-NOM door-ACC close-PST-but at.all close-NEG-PST-COP-SFP-SFP  
 ‘#Megumi closed the door, but the door didn’t get closed at all.’
- b. Kyuuna kaze-ga doa-o sime-ta-kedo, #zenzen simara-naka-tta-nda-yo-ne. (Causer)  
 sudden wind-NOM door-ACC close-PST-but at.all close-NEG-PST-COP-SFP-SFP  
 ‘#A sudden wind closed the door, but the door didn’t get closed at all.’

(6) Mandarin Chinese (Demirdache and Sun 2014; Demirdache and Martin 2015)

- a. Yuēhàn shāo le tā-de shu, dàn méi shāo zháo.  
 Yuēhàn burn PFV 3SG-DE book but NEG burn-touch  
 ‘#Yuēhàn burned his book, but it didn’t get burnt at all.’
- b. Huǒ shāo le tā-de shu, #dàn méi shāo zháo.  
 fire burn PFV 3SG-DE book but NEG burn-touch  
 ‘#The fire burned his book, but it didn’t get burnt at all.’

(7) Abui (Papuan) (Kratochvíl and Delpada 2015:231)

- a. Na ha-kaai haba da-kai naha.  
 1SG.AGT 3.UND.PAT-make.fall.PFV but 3.AGT.PAT-make.fall.IMP NEG  
 ‘#I tripped him, but he didn’t trip.’
- b. Wii ha-foka ha-kaai, #haba da-kai naha.  
 stone be.big 3.UND.PAT-make.fall.PFV but 3.AGT.PAT-make.fall.IMP NEG  
 ‘#The large stone made it fall, but it didn’t fall.’

To the best of my knowledge, Tsujimura (2003) is the first to explicitly point out the correlation between the availability of the non-culminating interpretation of causative accomplishment verbs and the agentivity of their external argument on the basis of her observation regarding ‘event cancellation phenomenon’ in Japanese; see also Ikegami (1980/1981, 1981, 1985) and Kageyama (1996, 2002) for relevant discussions and important observations hinting at this correlation in Japanese. Tsujimura (2003:398) writes thus:

“... what seems to be common in all languages that exhibit the event cancellation phenomenon is intentionality. ... In Japanese, if the agent of the action denoted by the verb does not have the intention to carry out the event but the event instead takes place by accident, cancellation of the event is not possible. ... Thus a remaining challenge is determining whether and how such

intentionality should be represented in the lexical representation of verbs.”<sup>3</sup>

In the rest of this section, I will present a short summary of the existing approach to causation types developed by Martin (2015, 2020) on whose insights I will draw on to develop my analysis of the ACH effects observed in Indonesian causative accomplishment verbs in section 4. Martin’s (2015, 2020) essential proposal is that agentive causation is to be conceptualized as comprising an action of the agentive argument and an ensuing CoS of the theme argument whereas non-agentive causation is to be understood in terms of the CoS of the theme argument alone. Martin (2020:258) proposes that “...in the agentive use, the causative even type denoted by the VP is ‘fleshed out’ by complex events composed of an action of *x* and a change-of-state of the theme’s referent *y*, whereas in the non-agentive use, the very same causing event type is fleshed out by changes-of-state of the theme’s referent only.’ Note that under this proposal, the non-agentive causative event type has the same interpretation as its anti-causative/inchoative variant since in both cases the relevant VP events are fleshed out by the CoS on the part of the theme’s referent alone, modulo the presence vs. absence of the external causer argument.

As I will argue in sections 3 and 4, my analysis of the link between non-culminating, zero CoS interpretations and agentivity of the external argument draws on Martin’s proposal above. Thus, it is worthwhile to take some time here to address the following question: how is agentivity relevant to the semantic representations of causative accomplishment verbs such that it produces the different number of sub-events in the two causation types? In her earlier paper which sets the stage for Martin (2020), Martin (2015:258) argues that the difference in question is rooted in “a difference in the conceptualization of the *beginning* of agentive vs. non-agentive causation events”. Martin (2015:25) writes thus:

“Agentive ongoing causation events (including processes involving instruments) are ontologically independent of their effects (they come into existence with the intention or plan put into action), while nonagentive ongoing causation events ontologically depend on their effects (they come into existence once they are efficacious only).”

To illustrate Martin’s point above, consider the two sentences: *Mary is opening the door* (agentive causation) vs. *The wind is opening the door* (non-agentive causation). In the agentive

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<sup>3</sup> As pointed out by an anonymous reviewer, there is a slight, but nonetheless significant, difference between the ACH as defined in (3) and Tsujimura’s generalization. More specifically, Tsujimura’s generalization refers to agentivity, but not to subjecthood, whereas the ACH refers to both agentivity and subjecthood. As I will discuss in section 4.3, the possibility of the non-culminating, zero CoS interpretation of a causative accomplishment verb in the so-called Passive Type-2 construction with the agentive external argument in the presence of the derived theme subject indicates that the ACH cannot be interpreted as requiring that the relevant argument must not only be the agent but also be in subject position. Similarly, the same reviewer notes that inclusion of the reference to subjecthood in the formulation of the ACH would incorrectly block non-culminating readings in non-active Tagalog examples (see section 4.1 for discussion on Tagalog). Indeed, the definitions of the ACH presented by Demirdache and Martin (2015) in a later part of the paper, do not make any reference to subjecthood but only to the agenthood of the external argument of a predicate involved, as shown in (ia, b).

(i) a. S-ACH (Strong version)

Zero result and partial result non-culminating construals require the predicate’s external argument to be associated with ‘agenthood’ properties.

b. W-ACH (Weak version)

Zero result non-culminating construals only require the predicate’s external argument to be associated with ‘agenthood’ properties.

(Demirdache and Martin 2015:201)

causation example, the door-opening event is considered to have started at the time when Mary put her intention to open the door into practice. Furthermore, merely observing Mary’s preliminary series of actions toward her intended goal to open the door (such as reaching her right hand on the doorknob or trying to insert her room key into the keyhole) suffices for a casual observer to recognize that this ongoing event constitutes the initial part of the door-opening event instead of some other potentially conceivable events, whether or not these actions eventually bring about the intended result on the part of the door. These observations, then, support the claim that the agent’s action component is to be recognized as ontologically independent from the theme’s CoS component. Such is not the case with the non-agentive causation example above, however. We may learn that the wind is actually causing the door-opening event only after we actually observe the wind blowing changing the state of the door from the closed to the open states. Similarly, even if we do see the wind blowing, this visual experience is not enough for us to ascertain that the wind blowing constitutes the initial part of the door-opening event, instead of many other potential events, say, the door-closing or even the door-breaking event. In other words, a non-agentive causation type can only be identified as such when a causer creates some causally efficacious result on the part of the theme’s referent. This, in turn, supports the intuition expressed by the quote above that non-agentive causation must be identified in terms of their causal efficaciousness.

Martin (2020), then, argues that the proposal outlined above regarding the different number of sub-events in agentive vs. non-agentive causation types interacts with a particular viewpoint aspectual system to yield the ACH effects. The perfective operator PFV in languages such as English is standardly defined as denoting that the event  $e$  it is existentially quantified over falls under the respective predicate  $P$ : since predicates denote properties of complex events,  $e$  is complete with respect to the given predicate  $P$ . Let us call this type of perfective PFV<sub>C</sub> and assume the standard lexical entry for it given in (8) from Kratzer (1998:107).

$$(8) \lambda P_{\langle l, \langle s, t \rangle \rangle} . \lambda t_i . \lambda w_s . \exists e_1 (\text{time}(e) \subseteq t \ \& \ P(e)(w) = 1)$$

‘event time included in reference time’ (Kratzer 1998:107)

However, Koenig and Muansuwan (2000) and Altshuler (2014) point out that the perfective operator in languages such as Thai and Hindi is instead a partitive perfective operator (Altshuler 2014), PFV<sub>M</sub>: it denotes not event completion, but event maximality in that the reported event must cease, but does not necessarily culminate. A simple version of Altshuler’s (2014) modal-based definition of the partitive perfective operator is reproduced in (8) from Martin (2020); see section 4.2 for a more detailed technical discussion of this operator type and evidence in its favor.

$$(8) \text{MAX}(e, P) :=$$

- a.  $e$  is a part of a possible P-event and
- b.  $e$  is not a proper part of any actual event that is part of a possible P-event.

(Martin 2020: 265)

The definition given in (8) refers to what Altshuler (2014) originally called the *Maximal Stage Requirement*, a requirement that he developed to capture the semantics of the simple form of the perfective in Hindi (Singh 1998; Arunachalam and Kothari 2010). The requirement is satisfied either when an event culminates into a complete  $P$ -event or ceases to develop toward the  $P$ -event in the actual world. In other words, the requirement can be met as long as there is a proper subpart of a complete  $P$ -event in the actual world that the operator can existentially quantify.

Recall now that the agentive causation type is fleshed out by complex events consisting of

the agent's action component and the theme's CoS component. Thus,  $PFV_M$  may be existentially quantified over any proper part of the agent's action without yielding any contradiction with subsequent denials of the CoS on the part of the theme's referent. This quantificational option, however, is not available in the case of the non-agentive causation type, which is fleshed out, per hypothesis, by the theme's CoS sub-event alone. Therefore,  $PFV_M$  must necessarily be quantified over this sub-event component and return at minimum some part of the theme's CoS. This result, then, necessarily clashes with subsequent denials of the theme's CoS sub-event.

Having now outlined the essential background of the ACH and its existing approach, I will now turn to my detailed investigation of non-culminating, zero CoS interpretations of causative accomplishment verbs in Indonesian in the next two sections. I will provide further data from my original fieldwork to show that the ACH nicely captures the robust link between the agentivity of the external argument and the availability of non-culminating, zero CoS interpretations in this language. I will then show how the link can be accounted for by drawing on Martin's (2015, 2020) central analytic premises and diagnostics briefly reviewed in the current section.

### 3. NON-CULMINATING READINGS OF INDONESIAN ACCOMPLISHMENTS VERBS.

Indonesian belongs to the Malayo-Polynesian subgroup of the Austronesian language family together with Malay, Sundanese, Cebuano, Madurese, Minangkabau, Malagasy, Javanese, Balinese, and Tagalog. Unless otherwise indicated, all the Indonesian data in this paper were collected by the present author through a series of interviews over a period of 1.5 years (February 2019–August 2020) with an Indonesian-Javanese bilingual consultant currently residing in Tokyo who is familiar with the acceptability judgement task used in current linguistic theories. The data were collected through the interviews in one of two ways. First, the present author had created the Indonesian examples on his own and then later had the consultant check their relative acceptability in a range of situational contexts under investigation in this paper (often accompanied with picture-based images and detailed explanations of the contexts). Alternatively, the author asked the consultant to create certain Indonesian examples and then to judge whether they could be used in the same range of contexts. The judgment patterns of this speaker were stable and consistent across all the sessions. During this 18-month period of data collection, the present author also scheduled several consultation sessions in the city of Kendal, Central Java, Indonesia with three other local Indonesian-Javanese consultants in August 2019 and thereafter through Facebook Chat between Kendal and Tokyo to check their acceptability judgements on the data collected through the methods above. Their judgement patterns were a lot more variable compared to those of my primary consultant, but as far as I can determine, the patterns did indicate their robust intuitions regarding the correlation between agentivity and non-culminating interpretations.

A couple of comments are in order here about the grammar of viewpoint aspect in Indonesian because this system will bear crucially on my analysis of the ACH effects in the language, developed in section 4.2. Indonesian has no marking for case, gender or number on nouns or for tense, aspect or mood on verbs. To express various viewpoint aspectual meanings, Indonesian uses several pre-verbal aspectual markers such as *sudah/telah/habis* (perfective), *baru* (recent perfective), and *sedang/lagi/tengah/masih* (imperfective; progressive, ongoing).<sup>4</sup> For instance, the aspectual auxiliary *sudah* is most commonly used to express the perfective aspect corresponding to the English adverb *already*, as shown in (9a). The auxiliary *belum* in (9b) is the negative variant of *sudah* in that it denotes the non-completive aspect corresponding to the English expression *not yet*. The example in (9c) shows that *sedang* expresses the imperfective progressive aspect.

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<sup>4</sup> The present description of the grammar of viewpoint aspect draws its essential information from Macdonald and Soenjono (1967), Suwono (1993), Abbott (1995), and Grangé (2010, 2013).

- (9) a. Mbak Hasna sudah membaca buku itu. (perfective; *already*)  
 sister Hasna PFV read book DEM  
 ‘Hasna has read this book already.’
- b. Mbak Hasna belum membaca buku itu. (negation of *sudah*; *not yet*)  
 sister Hasna IPFV read book DEM  
 ‘Hasna has not read this book yet.’
- c. Mbak Hasna sedang membaca buku itu. (imperfective; progressive)  
 sister Hasna PROG read book DEM  
 ‘Hasna is still read this book.’

Given the perfective meaning of *sudah* to refer to a completed action, the examples in (1) and (2) in section 1, whose contrast illustrated the agentivity-sensitive distribution of the non-culminating interpretation, will both become contradictory when this auxiliary is added to them in the pre-verbal position, as shown in (10) and (11), respectively.

- (10) Mas Haris sudah membakar sampah kemarin, #tapi tidak terbakar sama sekali.  
 brother Haris PFV burn trash yesterday but NEG burn at.all  
 Literal: ‘Brother Haris burned the trash yesterday, but it didn’t burn at all.’ (Agent)
- (11) Api sudah membakar sampah kemarin, #tapi tidak terbakar sama sekali.  
 fire PFV burn trash yesterday but NEG burn at.all  
 Literal: ‘A fire burned the trash yesterday, but it didn’t burn at all.’ (Causer)

More relevantly for the purposes of this paper, the perfective aspect in Indonesian can be expressed by unmarked/bare verbs without the help of any time adverb or aspect marker quite independently of any surrounding context (linguistic or otherwise), as shown in (12). Note that, unlike the perfective aspect, the imperfective aspect must be expressed by overt morphology. Thus, the progressive reading is not available in the sentence in (12) unless the overt progressive aspectual marker *sedang* is included in the pre-verbal position, as illustrated in (13).

- (12) Saya membakar sampah pagi ini. (perfective aspect)  
 I burn trash morning this  
 ‘I have already burned the trash.’
- (13) Saya sedang membakar sampah pagi ini. (imperfective aspect)  
 I PROG burn trash morning this  
 ‘I am burning the trash this morning.’

Let us see the distribution of perfective and imperfective interpretations associated with temporally unmarked VPs in Indonesian more closely. There is evidence, based on well-known interactions of tense specifications and the (a)telicity of the VPs documented in other languages such as Mandarin Chinese, Portuguese and Inuktitut, showing that unmarked telic and atelic VPs in Indonesian are associated with default perfective and imperfective interpretations, respectively. For instance, the examples in (14a, b) and (15a, b) can be easily construed as referring to past and present situations, respectively.

- (14) a. Nenek saya mati. (past tense)  
 grandmother my die  
 ‘My grandmother died.’

- b. Anak nakal itu mencuri dompet saya. (past tense)  
 child naughty DEM steal wallet my  
 ‘This naughty child stole my wallet.’

(15) a. Aini sangat cerdas. (present tense)  
 Aini very intelligent  
 ‘Aini is very intelligent.’

- b. Aku percaya pada Tuhan. (present tense)  
 I believe in God  
 ‘I believe in God.’

The contrast between (14a, b) and (15a, b) with respect to tense interpretations shows that it is the telicity of the VP events that governs the recovery of the tense information from temporally unmarked sentences. Specifically, the VPs in (14a, b) describe telic events whereas those in (15a, b) denote atelic events. The sensitivity of tenses on the telicity of the VP is further indicated by the different tense interpretations available to the otherwise identical verb in (16a, b).

(16) a. John membangun model plastik ini hanya dalam waktu satu menit. (past tense)  
 John build model plastic DEM only in time one minute  
 ‘John built this plastic model only in one minute.’

- b. John membangun rumah untuk mencari nafkah. (present tense)  
 John build house for find living  
 ‘John builds houses for a living.’

The VP in (16a) denotes a telic event of building a particular plastic model, as indicated by the occurrence of the time-frame PP *hanya dalam waktu satu menit* ‘only in one minute’ and is interpreted as taking place in the past. The VP in (16b), by contrast, denotes an atelic event of building houses, as indicated by the phrase *untuk mencari nafkah* ‘for a living’, and refers to the present situation.

In his discussion of recovery of tense information from temporally unmarked sentences in Mandarin Chinese, Lin (2002, 2003) extends ideas of de Swart (1998) and Schmitt (2001) on selectional restrictions of certain tenses in French, Portuguese and English and argues that covert tenses in Mandarin Chinese are subject to the following selectional restrictions.

- (17) a. Covert present tense must select imperfective AspP as its complement.  
 b. Covert past tense must select perfective AspP as its complement.

(Lin 2003:264)

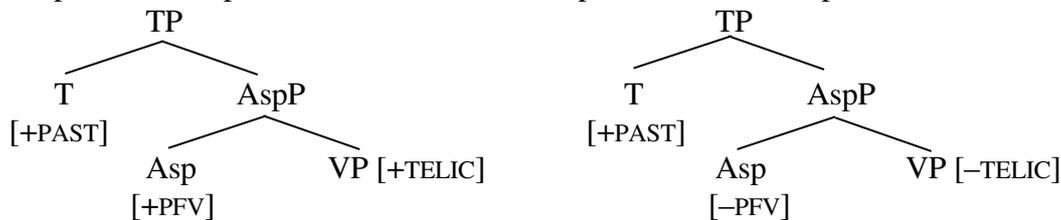
Bohnmeyer and Swift (2004) establish the cross-linguistically robust generalization that the default viewpoint aspect of telic VPs is perfective whereas that of atelic VPs is imperfective. For example, in Inuktitut, a language spoken by the Inuit of arctic Quebec, temporally zero-marked constructions encoding telic VPs have a perfect interpretation whereas those encoding atelic VPs have an imperfect interpretation. Furthermore, telic VPs and atelic VPs must be marked with some overt aspectual markers to yield imperfective and perfective interpretations, respectively. Given this “default aspect” hypothesis, the restrictions in (17a, b) mean that covert present and past tenses are ultimately driven by atelic and telic VP-events in Mandarin Chinese, respectively. This is indeed what happens in Mandarin Chinese, as shown in (18a, b), which exhibits the past tense and present tense interpretations due to their telic and atelic VP-events, respectively.

- (18) a. Ta dapuo yi-ge hua ping. (telic VP → past tense)  
 he break one-CLF flower vase  
 ‘He broke a flower vase.’  
 b. Ni da lanqiu ma? (atelic VP → present tense)  
 you play basketball Q  
 ‘Do you play basketball?’

(Lin 2003:262, 263)

Now, we can see from the examples in (14a, b), (15a, b) and (16a, b) that Indonesian behaves on a par with Mandarin Chinese in that the telic VPs in (14a, b) and (16a) trigger past tense interpretations whereas the atelic VPs in (15a, b) and (16b) trigger present tense interpretations, conforming the validity of the same restrictions on Indonesian covert tenses. Given the cross-linguistically documented validity of Bohnemeyer and Swift’s (2004) generalization stated above, it seems reasonable to conclude that unmarked telic VPs (as in (14a, b) and (16a)) and unmarked atelic VPs (as in (15a, b) and (16b)) are associated with the perfective and imperfective viewpoint aspects, respectively, as schematically illustrated in (19a, b).

- (19) a. past tense → perfective → telic VP    b. present tense → imperfective → atelic VP



Let us now return to the main concern of this section – the non-culminating, zero CoS interpretation of causative accomplishment verbs in Indonesian. It is well-known since Tai (1984) that in Mandarin Chinese, causative accomplishment verbs such as *sha* ‘to kill’ do not necessarily entail the resulting CoS of the theme argument lexically named by the verbs, as shown by the acceptability of (20). To insist on the attainment of the intended result state, the V-V compound *sha-si* ‘to kill-die’ must be used instead.<sup>5</sup>

- (20) Zhangsan {sha-le/# sha-si-le} Lisi liangci, Lisi dou mei si.  
 Zhangsan kill-PFV kill-die-PFV Lisi twice Lisi QUANT NEG die  
 ‘#Zhangsan killed Lisi twice, but Lisi didn’t die.’

(Tai 1984:291)

Verbs in Indonesian such as *bunuh* ‘to kill’ and *tutup* ‘to close’ exhibit the same behavior as in Mandarin Chinese in that they permit this non-culminating construal, as shown by the felicity of the examples in (21a, b).

- (21) a. Budi membunuh Ali, tapi dia tidak mati. (Agent)  
 Budi kill Ali but he NEG die  
 ‘#Budi killed Ali, but he didn’t die.’

<sup>5</sup> The glosses in this paper follow *The Leipzig Glossing Rules* (<https://www.eva.mpg.de/lingua/pdf/Glossing-Rules.pdf>). Below is the list of additional abbreviations used in the data section of this paper: AGT, agentive pronoun; AIA, ability/involuntary action; AV, active voice; CONT, continuative; CTR, control; CV, conveyance voice; DE, de; N, neutral; NCTR, non-control; PAT, patient; PV, passive voice; QUANT, quantification; SFP, sentence-final particle; UND, undergoer.

- b. Esti menutup pintu se-kuat-kuat-nya, tapi tidak tertutup. (Agent)  
 Esti close door with.all.one's.strength but NEG close  
 '#Esti closed the door with all her strength, but it didn't close.'

Importantly, however, the very same verbs strictly prohibit the relevant construal when the volitional agent argument in subject position is replaced with a non-volitional causer subject, as witnessed by the semantic anomaly of the examples in (22a, b), which minimally differ from the examples in (21a, b) in terms of the subject's theta role (agent vs. causer).

- (22) a. Gempa bumi membunuh Ali, #tapi dia tidak mati. (Causer)  
 quake earth kill Ali but he NEG die  
 '#The earthquake killed Ali, but he didn't die.'
- b. Angin menutup pintu, #tapi tidak tertutup. (Causer)  
 wind close door but NEG close  
 '#The wind closed the door, but it didn't close.'

Let me note here that the non-culminating reading is hard to obtain for my Indonesian consultants. Any causative accomplishment verb implies culmination by default in Indonesian as well as in the other languages mentioned in section 2. Hence, it costs a fair amount of abductive reasoning and interpretive costs for native speakers to find a suitable situational context where an act fragment on the part of the agent's referent is obtained in the actual world but still has a causally inefficacious consequence for the theme's CoS. Nonetheless, one can find some naturally occurring examples of non-culminating uses of accomplishment verbs with a simple Google search. The following examples, for instance, both involve reference to suicide and feature the non-culminating reading of the bare causative verb *bunuh* 'to kill'.<sup>6</sup>

- (23) Maka apabil seseorang tersebut tidak melakukan bunuh diri karena takut  
 therefore if person certain NEG do kill self because afraid  
 atau karena sadar atau **benar benar bunuh diri tetapi tidak mati** (percobaan)  
 or because aware or really kill self but NEG die attempt  
 maka pembujuk disini tidak di-hukum karena salah melakukan pembujukan.  
 then persuader here NEG PV-punish because wrong do persuade  
 'If a certain person didn't commit suicide because he was afraid or because he was aware  
 or if the person in question really tried to kill himself but didn't die (attempted suicide),  
 then the persuader here will not be punished for persuading him into the wrong doing.'  
 (from <http://digilib.uinsby.ac.id/4425/>)

- (24) Nonton Film *Spring Again* ... adalah menceritakan Lee Cheon Ah, **seorang**  
 watch film Spring Again is tell Lee Cheon Ah person  
**wanita yang bunuh diri setelah kematian putri-nya, tetapi tidak mati.**  
 woman that kill self after death daughter-her but NEG die  
 'Watch the film *Spring Again*. It is recounting Lee Cheon Ah, a woman who tried to kill  
 herself after the death of her daughter, but didn't die.'  
 (from <https://melongfilm.travel.blog/2019/07/15/spring-again-2019-subtitle-indonesia/>)

Before proceeding further, it is important to make sure that the verbs I am using here for the current study such as *bunuh* 'to kill' and *tutup* 'to close' are really accomplishment verbs in the first place, i.e., verbs denoting two sub-events, an activity/process performed by the

<sup>6</sup> I am thankful to an anonymous reviewer for drawing my attention to these examples.

agent/causer and a caused resulting CoS on the part of the theme (Vendler 1957; Jackendoff 1972; Dowty 1979; von Stechow 1995; Klein et al. 2001). This step is crucial for the current study to bring Indonesian data to bear on the ACH and to confirm that they must be treated as a semantic phenomenon instead of just a pragmatic inference or implicature. Indeed, there is compelling evidence based on time-frame adverbial modifications showing that both the agent's action and the result state are explicitly encoded in the lexical meaning of the verbs under investigation. Consider the examples in (25–26).

- (25) Pak Iwan membunuh ayam dalam waktu sepuluh menit, tapi sebenarnya  
 Mr. Iwan kill chicken in time ten minute but actually  
 ayam-nya mati hanya dalam waktu satu menit.  
 chicken-the die only in time one minute  
 'Mr. Iwan killed the chicken in ten minutes, but actually the chicken died only in one minute.'
- (26) Mbak Yuli menutup pintu berat itu se-kuat-kuat-nya dalam waktu sepuluh  
 Ms. Yuli close door heavy DEM with.all.one's.strength in time ten  
 menit, tapi sebenarnya pintu-nya tertutup hanya dalam waktu satu menit.  
 minute but actually door-the close only in time one minute  
 'Ms. Yuli closed the heavy door with all her strengths in ten minutes, but actually the door closed only in one minute.'

The example in (25) can be truthfully uttered in the following scenario. At 8:00am, on August 20, 2020, Iwan's sequences of preparatory actions targeting the chicken started; for instance, Iwan put his decision to kill the chicken into action for his family's breakfast, brought some necessary instruments such as knives and what-not, stood up, and approached the chicken he was attempting to cook on this particular morning. He finally put it to death at 8:10am. In other words, Iwan took a total of 10 minutes to achieve the goal of killing the chicken. On the other hand, the chicken itself took only one minute to die; for example, it was alive and intact at 8:09am, but died a minute after at 8:10am as the result of Iwan's action(s) to kill it. The possibility of two temporally conflicting time-frame adverbs – *dalam waktu sepuluh menit* 'in ten minutes' and *hanya dalam waktu satu menit* 'only in one minute' – occurring with the single causative verb *bunuh* 'to kill' in (25) clearly shows that the verb contains both the agent's action sub-event and the caused result sub-event in its lexical/syntactic representation. A similar characterization holds true for the example in (26) involving the verb *tutup* 'to close'.

Returning now to the main theme of this section – the link between agentivity and the non-culminating, zero CoS interpretation of causative accomplishment verbs in Indonesian – it is worth stressing here that it is the agentivity of the external argument which controls the availability of the non-culminating interpretation of causative accomplishment verbs in Indonesian; see also Lee (2015) and Beavers and Lee (in press) for the same observation in Korean caused CoS predicates. To illustrate this point, consider the examples in (27–28).

- (27) Esti menutup pintu secara tidak sengaja, #tapi tidak tertutup. (Accidental Agent)  
 Esti close door way NEG intentional but NEG close  
 '#Esti closed the door accidentally, but it didn't close.'
- (28) Pintu itu di-tutup demi keamanan, #tapi tidak tertutup. (*Di*-Passive)  
 door DEM PV-close for security but NEG close  
 '#The door was closed for security reasons, but it didn't close.'

The example in (27) is different from the example in (21b) in that the external argument in the

former functions as a non-volitional causer, unlike in the latter, where the same DP argument functions as a volitional agent, a contrast highlighted by the choice of the VP-level adverbials in the two examples: *secara tidak sengaja* ‘accidentally’ in (27) vs. *se-kuat-kuat-nya* in (21b). The example in (28) is a passive construction with the verb marked with the passive prefix *di-*. Given our world knowledge, the presence of the VP-modifier *demi keamanan* ‘for security reasons’ implies that there has to be a covert implied agent who participated in the door-closing event in this passive construction. The semantic anomaly of the example, therefore, shows that the mere semantic presence of such an implied agent is not sufficient to license the non-culminating construal of the causative accomplishment verb *tutup* ‘to close’.

Examples in (29–32) further illustrate the strong correlation between the non-culminating, zero CoS interpretation of causative accomplishment verbs and the agentive external argument. The examples in (29) and (30) are reproduced from the examples in (1) and (2) from section 1.

(29) Mas Haris membakar sampah kemarin, tapi tidak terbakar sama sekali.  
 brother Haris burn trash yesterday but NEG burn at.all  
 ‘#Brother Haris burned the trash yesterday, but it didn’t burn at all.’

(30) Api membakar sampah kemarin, #tapi tidak terbakar sama sekali.  
 fire burn trash yesterday but NEG burn at.all  
 ‘#A fire burned the trash yesterday, but it didn’t burn at all.’

(31) Mas Haris membakar sampah secara tidak sengaja kemarin, #tapi tidak  
 brother Haris burn trash way NEG intentional yesterday but NEG  
 terbakar sama sekali. (Accidental Agent)  
 burn at.all  
 ‘#Brother Haris burned the trash accidentally yesterday, but it didn’t burn at all.’

(32) Sampah itu di-bakar supaya tidak bau, #tapi tidak terbakar  
 trash DEM PV-burn so.that NEG smell.bad but NEG burn  
 sama sekali. (*Di-Passive*)  
 at.all  
 ‘#The trash was burned so that it wouldn’t smell bad, but it didn’t burn at all.’

The example in (29) with the intentional agent sitting in subject position allows for the non-culminating, zero CoS reading with the causative verb *bakar* ‘to burn’. The example in (30), by contrast, blocks this construal due to the non-volitional inanimate causer *api* ‘fire’. Finally, the examples in (31) and (32) show that neither the accidental agent nor the implied agent in the *di-*passive construction suffices to yield the construal under investigation.

The link between non-culminating interpretations and the agenthood of the external argument holds true quite generally in Indonesian. In addition to the causative verbs examined so far, it is detected not only with many other (often morphologically complex) causative verbs, including *mencairkan* ‘to melt’, *membuka* ‘to open’, *memecahkan* ‘to break’, *membkukan* ‘to freeze’, but also with ditransitive verbs such as *mengajari* ‘to teach’ and *memberikan* ‘to give’ as well as with verbs selecting a theme and a goal such as *menaruh* ‘to put’. In (33–39) below, the (a) examples are agentive causative statements whereas the (b) examples are non-agentive causative variants.

(33) a. Saya mencairkan makanan beku, tapi tidak meleleh sama sekali.  
 I melt food frozen but NEG melt at.all  
 ‘#I melted the frozen food, but it didn’t melt at all.’

- b. Panas di luar mencairkan makanan beku, #tapi tidak meleleh  
 heat in outside melt food frozen but NEG melt  
 sama sekali.  
 at.all  
 ‘#The heat outside melted the frozen food, but it didn’t melt at all.’
- (34) a. Dia membuka jendela, tapi tidak terbuka sama sekali.  
 he open window but NEG open at.all  
 ‘#He opened the window, but it didn’t open at all.’  
 b. Angin membuka jendela, #tapi tidak terbuka sama sekali.  
 wind open window but NEG open at.all  
 ‘#The wind opened the window, but it didn’t open at all.’
- (35) a. Anak saya memecahkan vas ini kemarin, tapi tidak pecah sama sekali.  
 child my break vase DEM yesterday but NEG break at.all  
 ‘#My child broke this vase yesterday, but it didn’t break at all.’  
 b. Angin kencang memecahkan vas ini kemarin, #tapi tidak pecah sama sekali.  
 wind strong break vase DEM yesterday but NEG break at.all  
 ‘#A strong wind broke this vase yesterday, but it didn’t break at all.’
- (36) a. Mbak Yuli membekukan ayam itu, tapi tidak membeku sama sekali.  
 Ms. Yuli freeze chicken DEM but NEG freeze at.all  
 ‘#Ms. Yuli froze the chicken, but it didn’t freeze at all.’  
 b. Lemari pembeku membekukan ayam itu, #tapi tidak membeku sama sekali.  
 board freezer freeze chicken DEM but NEG freeze at.all  
 ‘#The freezer froze the chicken, but it didn’t freeze at all.’
- (37) a. Mas Haris mengajari putra-nya bahasa Inggris dengan sangat keras  
 Mr. Haris teach son-his language English with very hard  
 tapi dia tidak mempelajari-nya samasekali.  
 but he NEG learn-it at.all  
 ‘#Mr. Haris taught his son English very hard, but he didn’t learn it at all.’  
 b. Buku pelajaran ini mengajari putra-nya bahasa Inggris, #tapi dia  
 book lesson DEM teach son-his language English but he  
 tidak mempelajari-nya samasekali.  
 NEG learn-it at.all  
 ‘#This textbook taught his son English, but he didn’t learn it at all.’
- (38) a. Saya memberikan Samantha bola, tapi dia tidak menerima-nya.  
 I gave Samantha ball but she NEG receive-it  
 ‘#I gave Samantha the ball, but she didn’t receive it.’  
 b. Semburan angin tiba-tiba memberikan Samantha bola, #tapi dia tidak  
 burst wind sudden gave Samantha ball but she NEG  
 menerima-nya.  
 receive-it.  
 ‘#A sudden burst of wind gave Samantha a ball, but she didn’t receive it.’

- (39) a. Saya menaruh buku dalam laci ini baru saja, tapi tidak ada di sana.  
 I put book in drawer DEM just.now but NEG exist in there  
 ‘#I put the book in this drawer just now, but it is not there.’
- b. Angin kencang menaruh buku dalam laci ini baru saja, #tapi tidak  
 wind strong put book in drawer DEM just.now but NEG  
 ada di sana.  
 exist in there  
 ‘#A strong wind put the book in the drawer just now, but it is not there.’

It should be clear from the above that the possibility of non-culminating, zero CoS interpretations of bi-eventive causative accomplishment verbs, such as *bunuh* ‘to kill’, *tutup* ‘to close’, and *bakar* ‘to burn’, is controlled by the presence of an intentional agentive external argument. This finding, thus, provides convincing support from Indonesian in favor of the ACH defined in (3) in section 2.

#### 4. ACTION AND RESULT: AN ANALYSIS OF THE ACH EFFECTS IN INDONESIAN.

In this section, I build my analysis of the ACH effects observed with causative accomplishment verbs in Indonesian on Martin’s (2015, 2020) approach briefly reviewed in section 2. Recall that her approach is based on two assumptions. One assumption was that the structured meanings of this verbal class may contain two sub-events – the agent’s action and the theme’s result state – for agentive causation, but involve only the latter sub-event for non-agentive causation. The other assumption was that those languages with non-culminating readings such as Thai and Hindi were endowed with the partitive perfective operator  $PFV_M$ , which essentially requires that at least some proper sub-part of a complete *P*-event must obtain in the actual world. We have seen how these two assumptions interact to yield the agentivity-sensitive distribution of the non-culminating, zero CoS reading of accomplishment verbs within her approach. In the rest of this section, I first present independent evidence for these two assumptions above (sections 4.1 and 4.2) to lay the groundwork for my analysis of the ACH effects in Indonesian (section 4.3).

##### 4.1 EVIDENCE FOR ACTION AND RESULT IN INDONESIAN ACCOMPLISHMENTS.

In this sub-section, I will provide one independent argument from Tagalog for the proposed identification of two sub-events – agent’s action and theme’s CoS – in fleshing out the two different causation types. The argument is based on Dell’s (1983) observation regarding the neutral vs. ability/non-voluntary verb forms. I will then introduce the Indonesian data directly supporting the crucial assumption that agentive causation has both of these two sub-events whereas non-agentive causation type is associated with only the latter sub-event.

Tagalog has a well-known morphological distinction between the neutral (N) form and the ability/non-voluntary action (AIA) form (Schachter and Otnes 1972; Dell 1983; Alonso-Ovalle and Hsieh 2017, 2018). Dell (1983) points out that the choice between the two forms plays an integral role in indicating the occurrence of the agent’s action and the theme’s (intended) CoS lexically implicated by the verbal root. Dell (1983:181) writes thus:

“The lexical meaning of the root *tulak* involves two distinct ideas. One has to do with the agent’s engaging in a certain action or ‘Maneuver’ (pushing the rock), and the other has to do with a certain ‘Result’ that may (but need not) be brought about by that Maneuver (the displacement of the rock). It is my contention that the ultimate semantic difference between neutral forms and their AIA counterparts is this: one uses a neutral form when one intends to assert that a certain Maneuver took place, but one wants to remain noncommittal as to whether it did actually bring out the intended Result; on the other hand, one uses

an AIA form when the main business at hand is to assert that a Result, intended or not, was actually achieved.’

Examples in (40, 41) illustrate Dell’s observation above.

(40) ITINULAK ni Ben ang bato.  
 N-PFV-push GEN Ben NOM rock  
 ‘Ben pushed the rock.’ (+Maneuver, ØResult) (Dell 1983:179)

(41) NAITULAK ni Ben ang bato.  
 AIA-PFV-push GEN Ben NOM rock  
 ‘Ben pushed the rock.’ (+Maneuver, +Result)  
 a. ‘Ben managed to move the rock by pushing it.’ (ability)  
 b. ‘Ben accidentally moved the rock by pushing it.’ (non-voluntary action)  
 (Dell 1983:180)

In (40), the sentence-initial verb is marked with the N form. Dell observes that here, Ben must have participated in the action of pushing the rock, but it does not have to be the case for the sentence to be true that the rock underwent any displacement as the result of Ben’s action: the rock may well be in exactly the same position as it was before the action took place. In (41), on the other hand, the verb is now marked with the AIA form. In this case, the rock that Ben pushed must have been displaced from its original position to some other position as the result of Ben’s pushing action, whether it was deliberately conducted or not.

This contrast between the neutral and the AIA form with respect to the entailment of the event culmination is further confirmed in (42). Alonso-Ovalle and Hsieh (2018) point out that the version of the discourse in (42) with the AIA form is contradictory, unlike its N counterpart.

(42) {I-t<in>ulak /# Na-i-tulak} ni Ben ang bato, pero hindi ito  
 CV-<N.PFV>push AIA.PFV-CV-push GEN Ben NOM rock but NEG this  
 g<um>alaw dahil napaka-bigat nito.  
 <AV.N.PFV>move because very-heavy this.GEN  
 ‘Ben managed to push the rock, but it didn’t move because it was so heavy.’  
 (Alonso-Ovalle and Hsieh 2018:62)

Equally telling is Dell’s observation that negation in Tagalog specifically targets the meaning component, either the agent’s action or the theme’s CoS, that is highlighted by the choice of the N vs. AIA forms along the lines mentioned above. To illustrate this point, let us see what happens when the sentences with the verbs in (40, 41) are negated. Examples in (43, 44) result:

(43) hindi ITINULAK ni Ben ang bato.  
 NEG N-PFV-push GEN Ben NOM rock  
 ‘Ben did not push the rock.’ (–Maneuver, ØResult) (Dell 1983:181)

(44) hindi NAITULAK ni Ben ang bato.  
 NEG AIA-PFV-push GEN Ben NOM rock  
 ‘Ben did not push the rock.’ (ØManeuver, –Result)  
 a. ‘Ben did not manage to move the rock by pushing it.’ (ability)  
 b. ‘Ben did not accidentally move the rock by pushing it.’ (non-voluntary action)  
 (Dell 1983:180)

In (43), the negative marker *hindi* ‘not’ removes the erstwhile positive specification of the Maneuver or the agent’s action which was manifest in (40). In (44), by contrast, the same marker now removes the positive specification of the Result or the theme’s CoS component from its affirmative variant in (41). Of crucial import for my present purposes is that Dell’s observation indicates that Tagalog has a fine-tuned morphological means to segregate the event-structural meaning of causative accomplishment verbs into the agent’s action and the theme’s CoS component, exactly as proposed by Martin (2015, 2020). I take the existence of this type of language to furnish independent support for the bi-eventive analysis of agentive causation in other languages as well, including Indonesian.

The question now, of course, is whether there is any independent argument, internal to Indonesian, in support for the central assumption that agentive causation involves two sub-events – action and result – whereas non-agentive causation involves only the latter sub-event. There are indeed three independent arguments for this assumption, all modeled on Martin’s (2015, 2020) diagnostic tests developed as a probe into the bi-eventive structure of causative accomplishment verbs in languages like French and English.

My first argument is concerned with different interactions of the two causation types with time-frame adverbials (recall (25)). Such adverbials are known to measure the time span between the onset and the result state of a complete event denoted by a verb. Keeping this point in mind, let us now consider examples in (45) (repeated from (25)) and (46), which instantiate the agentive and non-agentive causation types of the accomplishment verb *bunuh* ‘to kill’, respectively.

(45) Pak Iwan membunuh ayam dalam waktu sepuluh menit, tapi sebenarnya  
 Mr. Iwan kill chicken in time ten minute but actually  
 ayam-nya mati hanya dalam waktu satu menit. (agentive causation)  
 chicken-the die only in time one minute  
 ‘# Mr. Iwan killed the chicken in ten minutes, but actually the chicken died only in one minute.’

(46) Gempa bumi membunuh ayam dalam waktu sepuluh menit, # tapi sebenarnya  
 quake earth kill chicken in time ten minute but actually  
 ayam-nya mati hanya dalam waktu satu menit. (non-agentive causation)  
 chicken-the die only in time one minute  
 ‘# Mr. Iwan killed the chicken in ten minutes, but actually the chicken died only in one minute.’

Recall from section 3 that the example in (45) can be uttered in a context where Iwan took ten minutes in total to achieve the goal of killing the chicken, including his preparation stages, but the chicken itself changed its state from being alive to dead within one minute. The acceptability of this example with two apparently temporally conflicting adverbs – *dalam waktu sepuluh menit* ‘in 10 minutes’ and *hanya dalam waktu satu menit* ‘only in one minute’ – is straightforwardly accounted for if the agentive causation statement with the agentive external argument *Pak Iwan* ‘Mr. Iwan’ introduces the agent’s action and the theme’s CoS components. Consequently, the time span of the latter sub-event may well be shorter than the time span of the entire causing event that properly contains the former sub-event.

The semantic anomaly of (46), on the other hand, shows that this hybrid meaning is inaccessible with the same VP now with the causer subject *gempa bumi* ‘earthquake’. Once again, this anomaly falls into place if we assume that the non-agentive causation type exemplified by this example is fleshed out only in terms of the theme’s CoS component. As such, the example is necessarily interpreted such that the entire caused event (i.e., the theme’s CoS from being alive to dead) was completed in both ten minutes and only in one minute, thereby giving rise to logical contradiction. Also recall that the semantic interpretation of the non-agentive causation type is identical for all intents and purposes to that of its anti-causative/inchoative variant because both

events may introduce only one sub-event token (the theme's CoS). Example (47) indeed shows that the latter construction also yields semantic anomaly, just as (46) does.

- (47) Ayam mati dalam waktu sepuluh menit, # tapi sebenarnya ayam-nya  
 chicken die in time ten minute but actually chicken-the  
 mati hanya dalam waktu satu menit. (anti-causative/inchoative VP)  
 die only in time one minute  
 '# The chicken died in ten minutes, but actually the chicken died only in one minute.'

My second argument in favor of the view that agentive causation has the bipartite action + result structure, unlike non-agentive causation, which is endowed with only the result component, comes from different interpretational requirements on the two causative VPs when the VPs are embedded under aspectual predicates such as *mulai* 'to start'. More specifically, this complementation structure requires the CoS of the theme's referent to start with a causer argument at the utterance time, but not necessarily with an agent argument. Examples (48, 49) illustrate this observation.

- (48) Pak Iwan mulai membakar sampah. (agentive causation)  
 Mr. Iwan start burn trash  
 'Mr. Iwan started burning the trash.'

- (49) Api mulai membakar sampah. (non-agentive causation)  
 fire start burn trash  
 'The fire started burning the trash.'

For (48) to be truthfully uttered, some preparatory actions on the part of Iwan must have started at the utterance time. Crucially, though, no change on the part of the trash toward the intended result (i.e., the trash got burned out) has to happen yet at the utterance time; thus, the trash in question may remain exactly in the same shape/color as before. This construal is possible in (48), I suggest, because this agentive causative statement involves the agent's action and the theme's CoS as its sub-events: the aspectual verb *mulai* 'to start' thus can modify the onset of the agent's action alone (i.e., a series of actions that the subject may take to get engaged himself/herself in the trash-burning activity). (49), by contrast, entails that the trash has already started undergoing some change at the utterance time ultimately leading to the intended result in a normal course of events; the trash started releasing smoke into the air or caught on fire to change its outer shape and color, for example. This entailment is necessarily manifested in (50) because this example, instantiating non-agentive causation, is fleshed out only through the theme's CoS component. It follows then that the aspectual verb can only modify the onset of the theme's result state which would lead to the expected outcome (i.e., the burned state of the trash).

My third and final argument for the analytic assumption regarding the event structure of agentive vs. non-agentive causation types is based on the 'imminent' vs. 'remote' culmination readings brought about by these two types under progressive contexts (Bonomi 1997; Truswell 2011a, b; Martin 2015, 2020). Truswell (2011a, b), for one, points out that the example in (50B) is false even in a situation where it is quite certain that the sea will destroy the sandcastle. On the other hand, the example in (51B) is true even if the speaker is still preparing for a certain course of action, such as gathering necessary information and approaching the sandcastle, before he or she actually impacts on the sandcastle to break it.

- (50) A: (Observing the sea advancing towards a fragile-looking sandcastle, but not yet touching it): What is the sea doing?

B: # It is destroying that sandcastle. (Non-agentive causation)

(Truswell 2011a:12)

(51) A: (Observing B advancing towards a fragile-looking sandcastle and trying to stumble onto the sandcastle): What are you doing?

B: I am destroying that sandcastle. (Agentive causation)

The contrast between (50B) and (51B) indicates that under progressive contexts, the non-agentive causation statement forces the imminent culmination reading on the VP-denoted event whereas the agentive causation statement allows for the remote culminating reading. This contrast, in turn, directly falls out from, and hence supports, our current assumption, as follows. The agentive causation case in (51B) is fleshed out by the agent's action as well as the theme's CoS sub-events. (51B) is felt to be true because the progressive aspect may pick up the agent's action sub-event alone of the VP-denoted event. This partial modification option is not available in the non-agentive causation case in (50B), however, because the only possible target of modification by the progressive aspect is the theme's CoS sub-event. Accordingly, the utterance is felt to be false unless the sandcastle has undergone some CoS as a result of the causer's direct physical impact on it. Indeed, the example in (50B) becomes acceptable in the context shown in (52), which ensures that the sea has already crashed over the sandcastle.

(52) A: (Observing the sea crashing over a sandcastle): What is the sea doing?

B: It's destroying that sandcastle! (Non-agentive causation)

(Truswell 2011a:12)

Keeping Truswell's (2011a, b) observation in mind, we can now see from (53) and (54) that the same interpretive contrast between imminent and remote culminating readings can be replicated in Indonesian with the causative accomplishment verb *buka* 'to open'.

(53) (Observing a string wind approaching a fragile-looking front door of an old house)

Lihat! # Angin sedang membuka pintu-itu!  
wind PROG open door-DEM  
'Look! The wind is opening that door!'

(54) (Observing B with the key in his hand reaching the keyhole)

A: Kamu sedang apa?

you PROG open

'What are you doing?'

B: Saya sedang membuka pintu-ini!

I PROG open door-DEM

'I am opening this door!'

(53), an instance of the non-agentive causation type, is felt to be awkward by my native speaker consultants because the causer argument *angin* 'wind' has not affected the theme's referent in any way at the utterance time. However, (54), instantiating the agentive causation type, is fine in the context where the speaker has not even touched the door in question yet, but has just started his preparatory actions to put his intention to open the door into action, for example, by locating his house key in his pant's front pocket or by extending his hands to the doorknob to turn it.<sup>7</sup>

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<sup>7</sup> Thanks to an anonymous reviewer for suggesting the natural discourse in (54) and its possible context of use. The same reviewer points out that the same contrast obtains between (53) and (54) when the pre-verbal future tense/aspect marker *akan* 'will' is added to these examples, as shown in (i) and (ii), respectively.

To recapitulate, I have presented three arguments, based on adverbial modification, complementation under *mulai* ‘to start’ and imminent vs. remote culminating interpretations, for the view that agentive causation is to be factored into the agent’s action + the theme’s CoS sub-events whereas non-agentive causation consists solely of the theme’s CoS event.<sup>8</sup>

#### 4.2 EVIDENCE FOR THE PARTITIVE PERFECTIVE OPERATOR IN INDONESIAN.

Altshuler (2014) develops a new typology of partitive aspectual operators based on his detailed examination of the Russian imperfective and the Hindi simplex perfective forms. He proposes that the Russian imperfective operator is defined as shown in (55a, b).

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

(adopted from Altshuler 2014:754)

The notion of *stage* used here is drawn from Landman (1992), who claims that the ‘stage-of’ relation is a special case of the ‘part-of’ relation in that for a part to be a stage, that part has to be big enough and share enough with some bigger event so that it may be conceptualized as a less developed version of the event. The requirement in (55b-iv) is crucial for our current purposes. The operator in question combines with a set of events  $P$  and requires an event  $e'$  in  $w^*$  to be a stage of a P-event  $e$  in a ‘near enough’ world  $w$  (Dowty 1979). Altshuler argues that this analysis correctly accounts for why an accomplishment verb allows for a non-culminating interpretation, as in (56a), in contrast to an achievement verb which blocks it, as in (56b).

- 
- (i) (Observing a strong wind approaching a fragile-looking front door of an old house)

Lihat! # Angin sedang akan membuka pintu-itu!  
 wind PROG will open door-DEM  
 ‘Look! The wind is going to open that door!’

- (ii) (Observing B with the key in his hand reaching the keyhole)

A: Kamu sedang apa?  
 you PROG what  
 ‘What are you doing?’  
 B: Saya sedang akan membuka pintu-ini!  
 I PROG will open door-DEM  
 ‘I am going to open this door!’

More specifically, the reviewer notes that, even though neither the causer in (i) or the agent in (ii) is understood as affecting the theme’s referent, (i) is not acceptable but (ii) is. This is also the intuition shared by my native Indonesian speaker consultants.

<sup>8</sup> One fundamental question that remains here is why non-agentive causative statements, which could, in principle, be associated with a bi-event structure, do not now allow separate access to the causer’s initiating sub-event and the theme’s CoS sub-event, unlike in the case of agentive causative statements. One may certainly entertain the view, expressed by Martin’s (2015, 2020) (see section 2), that the former sub-event can only be recognized as such in terms of some causally efficacious relationship with the latter sub-event. However, this view itself does not seem to really explain why the two sub-events cannot be separately modified. Although I have no definite answer to the question here, I wish to point out one analytical direction here. It is possible that the non-agentive causation type does consist of the two sub-events – the causer’s causing component and the theme’s CoS component – but the two sub-events run in parallel; consequently, the two physio-temporally parallel events cannot be targeted separately.

- (56) a. Ja dočit-yva-l poslednie stročki pis'ma xotja ne do-čita-l  
 I read.up-yva-PST last lines letter even.though NEG read.up-PST  
 ix do konca.  
 them until end  
 'I (have) read the last lines of the letter, even though I did not finish it.'
- b. K nam priezža-l otec domoj, # no on ne smog najti naš dom.  
 to us arrive.IPFV-PST father home but he NEG able find our house  
 'Father came to see us at home, but was unable to find our house.'
- (Russian: Altshuler 2014: 737, 742)

Assuming that an event denoted by an accomplishment verb contains (at least two) stages – the action and the result state, the partitive requirement shown in (55b-iv) is satisfied even though a whole VP-event did not culminate as long as a VP-event stage is realized in  $w^*$  which is a stage of the VP-event  $e$  in  $w$  (a near enough world). That is why (56a) is grammatical under the non-culminating reading. Such is not the case with the achievement verb in (56b). Such a verb denotes an atomic stage. If we assume that an atomic stage is one that trivially develops into itself in  $w^*$  as well as every other possible world, the example in (56b) necessarily leads to the culminating entailment that the father came to the speaker's house.

The same analysis holds true for the contrast between (57a) and (57b), both instantiating the so-called simple perfective construction in Hindi.

- (57) a. maayaa-ne biskuT-ko khaa-yaa par use puuraa nahiin khaa-yaa.  
 Maya-ERG cookie-ACC eat-PFV but it finish NEG eat-PFV  
 'Maya ate the cookie, but did not finish it.'
- b. pitaa-jii hamaare ghar aa-ye, # lekin hamaaraa ghar nahiiN DhuunD sake.  
 father our house come-PFV but our house NEG find could  
 'Father came to our house, but was unable to find our house.'
- (Hindi: (57a) Arunachalam and Kothari 2010, as cited in Altshuler 2014:760;  
 (57b) from Altshuler 2014:748)

Though the partitive operator defined as shown in (55a, b) does capture the (non-) culminating properties of the Russian imperfective and the Hindi perfective forms, Altshuler (2014) proposes further that an additional parameter must be imposed on the STAGE operator in view of a certain difference between the two forms, illustrated by the contrast between (58a) and (58b), with respect to the availability of the on-going progressive reading.

- (58) a. Ja e-l tort, i sejčas prodolžaju ego est'. (Russian)  
 I eat.IMPV-PST.1SG cake and now continue it eat.INF  
 'I was eating cake and now I am still eating it.'
- b.# maayaa-ne biskuT-ko khaa-yaa aur use ab tak khaa rahii hai. (Hindi)  
 Maya-ERG cookie-ACC eat-PFV and it still eat PROG be.PRS  
 Intended: 'Maya was eating the cookie, and is still eating it.'
- (Altshuler 2014: 759)

To account for this difference, Altshuler draws on Koenig and Muansuwan's (2000) theory of semi-perfectivity in Thai accomplishment verbs, which, in turn, adopts the notion of the terminal point of an event relative to an event-description in Krifka (1989), and proposes that the Hindi simple perfective additionally includes what he calls the *Maximal Stage Requirement* defined in (59b.v) below; see also Filip (2000, 2008) for a similar proposal developed in Slavic languages. I will hereafter call this sub-type of partitive perfective operator  $PFV_M$ .

- (59) a.  $\llbracket \text{PFV} \rrbracket^{M, g} = \lambda P \lambda e' \exists e \exists w [\text{MAXSTAGE}(e', e, w^*, w, P)]$   
 b.  $\llbracket \text{MAXSTAGE}(e', e, w^*, w, P) \rrbracket^{M, g} = 1$  iff (i)-(v) holds:  
 (i) the history of  $g(w)$  is the same as the history of  $g(w^*)$  up to and including  $\tau(g(e'))$   
 (ii)  $g(w)$  is a reasonable option for  $g(e')$  in  $g(w^*)$   
 (iii)  $\llbracket P \rrbracket^{M, g}(e, w) = 1$   
 (iv)  $g(e') \subset g(e)$   
 (v)  $\forall e'' [g(e') \subseteq e'' \wedge e'' \subset g(e) \rightarrow \llbracket P \rrbracket^{M, g}(e'', w^*) = 0]$   
 (adopted from Altshuler 2014:761)

This requirement states that “for all events  $e''$ , if  $e''$  properly contains the VP-event part denoted by  $e'$  and is at least a sub-part of the VP-event denoted by  $e$ , then  $e''$  does not satisfy the description denoted by the VP in  $w^*$  (Altshuler 2014:761). To put it differently, the relevant requirement is met by the lack of any event that is more developed than  $e'$  in  $w^*$ , that is, either when the event part denoted by  $e'$  culminates or ceases to develop further in  $w^*$ . This is the formal implementation of the Maximal Stage Requirement informally stated in (8) in section 2, repeated here as (60).

- (60)  $\text{MAX}(e, P) :=$   
 a.  $e$  is a part of a possible P-event and  
 b.  $e$  is not a proper part of any actual event that is part of a possible P-event.  
 (Martin 2020: 265)

Consider Thai examples in (61a, b) to see how the relevant requirement works. This requirement is not overtly violated in (61a) because the example just asserts that there occurred an event  $e'$  that is a sub-part of an event  $e$  that satisfies the description of the VP without implying the occurrence of  $e''$  containing  $e'$  as its proper part. (61b) clearly violates this requirement, however, because the example asserts that there is an event  $e''$  that is ongoing at the speech time that properly includes the event  $e'$  and still meets the description of the VP.

- (61) a. Suri téeŋ klǒŋ sǒŋ bòt k<sup>h</sup>ûm téε jaŋ mâj sèd.  
 Suri write poem two CLF ascend but still NEG finish  
 ‘Suri composed two poems, but has not finished it yet.’  
 b. #Suri téeŋ klǒŋ sǎam bòt k<sup>h</sup>ûm lɛʔ kamləŋ téεŋ jùu.  
 Suri write poem three CLF ascend and PROG compose CONT  
 ‘Suri composed three poems and is still composing them.’  
 (Thai: Koenig and Muansuwan 2000:157,158)

The same analysis can be extended to accounting for the unacceptability of the Hindi example in (58b). Martin (2020) (see also Martin et al. 2018 and Martin and Gyarmathy 2019) further shows that in Mandarin Chinese, the proposed definition of the PFV<sub>M</sub>, morphologically realized as  $-le$ , correctly accounts for the semantic incongruity of (62a) as well as the acceptability of (62b).

- (62) a. Lùlù kāi-le nèi-shàn mén, dànshì mén gēnběn méi kāi.  
 Lulu open-PFV that-CLF door but door at.all NEG.PFV open  
 Literally. ‘#Lulu opened that door, and it didn’t open at all.’  
 b. #Lùlù kāi-le nèi-shàn mén, érqǐě hái zài kai.  
 Lulu open-PFV that-CLF door and still PROG open  
 Intended. ‘Lulu opened that door, and she is still opening it.’  
 (Martin 2020: 265)

As stated above, the partitive operator  $PFV_M$  requires that the door-opening event described in the first clause be maximal; the relevant event must be a complete  $P$ -event or cease to develop towards a  $P$ -event in the real world. (62b) is anomalous because the second clause indicates that the event in question is still ongoing, in violation of the Maximal Stage Requirement. This example is to be contrasted with (62a), where the relevant requirement is not overtly violated.

Having now reviewed Altshuler's (2014) theory of partitive aspectual operators and distinguishing criteria for the(im-)perfectivity of a form, I will now demonstrate how the aspectual system in Indonesian fits within this typological theory. For a start, let us consider the examples in (21a, b), repeated here as (63a, b).

- (63) a. Budi membunuh Ali, tapi dia tidak mati.  
 Budi kill Ali but he NEG die  
 '#Budi killed Ali, but he didn't die.'
- b. Esti menutup pintu se-kuat-kuat-nya, tapi tidak tertutup.  
 Esti close door with.all.one's.strength but NEG close  
 '#Esti closed the door with all her strength, but it didn't close.'

One might think that in the absence of any overt aspectual marker, these examples are ambiguous between the imperfective and perfective interpretations so that the non-culminating interpretation can be obtained under the imperfective reading; recall our brief discussion of the grammar of aspect in Indonesian in section 3. This analytical possibility is unlikely, however, given our discussion in section 3 on the grammar of default aspect in bare accomplishment VPs. A perfective interpretation for a particular event is obtained when a speaker perceives the event as an unanalyzed whole including its initial and final boundaries whereas an imperfective interpretation is obtained when the speaker zooms in on the event in progress without reference to the starting or ending points of the event (Comrie 1976; Smith 1991). Given this distinction, the examples in (63a, b) are perfective because the inference my native speaker consultants draw from the first clauses of these sentences is that the described event was completed; they can never be assigned the imperfective/ongoing interpretation, unless they are accompanied with the progressive auxiliary *sedang* in the pre-verbal position, as shown in (64a, b).

- |         |                           |    |                           |
|---------|---------------------------|----|---------------------------|
| (64) a. | Budi membunuh Ali.        | b. | Budi sedang membunuh Ali. |
|         | Budi kill Ali             |    | Budi PROG kill Ali        |
|         | = 'Budi killed Ali.'      |    | ≠ 'Budi killed Ali.'      |
|         | ≠ 'Budi was killing Ali.' |    | = 'Budi was killing Ali.' |
|         | (perfective)              |    | (perfective)              |
|         | (imperfective)            |    | (imperfective)            |

The same position is further supported by data concerning the interaction of accomplishment VPs with time-frame adverbials (see also section 4.1). Such adverbials are known to tell apart telic verbs which denote events with a clear endpoint and atelic verbs which denote events without it. Consequently, perfective forms can, but imperfective forms cannot, co-occur with this type of adverbial, as shown by the contrast between (65a) and (65b).

- (65) a. Sarah walked to the park in one hour.  
 b.\* Sara was walking to the park in one hour.

Given this observation, the contrast in grammaticality between (66a) and (66b) clearly shows that the aspectually unmarked accomplishment verbs as in (63a, b) are in the perfective form, for they may co-occur with the time-frame adverb *dalam waktu satu jam* 'in one hour'.<sup>9</sup>

<sup>9</sup> As pointed out by an anonymous reviewer, the ambiguity approach addressed here would have another problem in explaining why it is that agentivity brings about the imperfective interpretation, not the perfective interpretation,

- (66) a. Budi membunuh Ali dalam waktu satu jam.  
 Budi kill Ali in time one hour  
 ‘Budi killed Ali in one hour.’  
 b.\* Budi sedang membunuh Ali dalam waktu satu jam.  
 Budi PROG kill Ali in time one hour  
 ‘\*Budi was killing Ali in one hour.’

Secondly, the impossibility of the examples in (67a, b), modeled on the examples in (58b), (61b) and (62b), indicates that Indonesian is endowed with the partitive perfective operator as in Thai, Hindi and Mandarin Chinese, even though the operator is phonetically silent.

- (67) a. Budi membunuh Ali, # dan masih sedang membunuh-nya.  
 Budi kill Ali and still PROG kill-him  
 ‘# Budi killed Ali, and he is still killing him.’  
 b. Esti menutup pintu, # tapi masih sedang menutup-nya.  
 Esti open door but still PROG open-him  
 ‘# Esti opened the door, but she is still opening it.’

PFV<sub>M</sub> in the first clause in these examples imposes the Maximal Stage Requirement to the effect that the killing-event and the door-opening event must culminate or cease to progress any further toward a *P*-event at the utterance time. However, this requirement is violated by the second appended clause, which asserts that a larger event *e*'' properly contains the event *e*' at the utterance time and still meets the description of the VP-denoted event.<sup>10</sup>

Thirdly and finally, remember that the definition of PFV<sub>M</sub> in (59) served to properly distinguish between accomplishment and achievement VPs with respect to the availability of the non-culminating interpretation, as shown in Russian ((56a, b)) and Hindi ((57a, b)), given that the former Akitionsart class contains at least two stages – the action and result state stages, unlike the latter class, which denotes a single atomic stage. Indonesian also exhibit the same Akitionsart-sensitive distribution of the non-culminating reading, as shown by the contrast between (68a) (repeated from (1)) and (68b).

- (68) a. Mas Haris membakar sampah kemarin, tapi tidak terbakar sama sekali.  
 brother Haris burn trash yesterday but NEG burn at.all  
 Literal. ‘Brother Haris burned the trash yesterday, but it didn’t burn at all.’ (Agent)  
 b. Mas Haris tiba in rumah saya hari ini, # tapi dia tidak bisa menemukan-nya.  
 brother Haris arrive to house my day DEM but he NEG can find-it  
 Literal. ‘Brother Haris arrived at our house today, but he could not find out house.’

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to yield the non-culminating construal associated with an accomplishment verb. This problem won’t arise under the view developed so far in section 4.2 in so far as my proposed analysis in section 4.3 of the link between agentivity and non-culmination is tenable.

<sup>10</sup> An anonymous reviewer asks the following question. If the impossibility of the ongoing reading in (68a, b) is taken to demonstrate that Indonesian has PFV<sub>M</sub>, then the fact that the English equivalents to these examples are unacceptable may indicate that English is also equipped with this operator. This is, of course, clearly an undesirable situation, given that English accomplishment verbs generally disallow non-culminating interpretations, aside from double object verbs (Oehrle 1976; Gropen et al. 1989; Beavers 2011) and other verbs like *force* (Koenig and Davis 2001). I therefore maintain that the unacceptability of the English versions is attributed instead to the language’s PFV<sub>C</sub> (see section 2), which requires that the event *e* it is quantified over be complete with respect to a predicate *P*. In other words, when combined with the accomplishment verbs, the operator entails that their lexically encoded resulting state must hold at the reference time, blocking the ongoing progressive interpretation. See also Smith (1991) and Koenig and Muansuwan (2000) for further relevant discussions on this.

This result, then, lends further credence to the claim here that Indonesian is endowed with  $PFV_M$ .

### 4.3 AN ANALYSIS OF THE ACH EFFECTS IN INDONESIAN ACCOMPLISHMENTS.

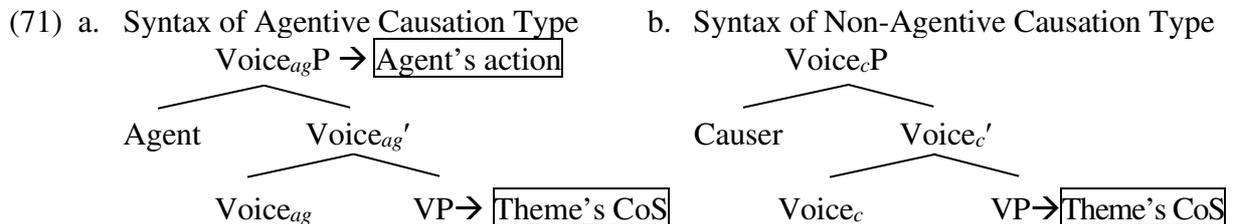
Having presented independent evidence for three analytical assumptions summarized in (70a–c), we are now ready to complete our explanation of the ACH effects observed with Indonesian causative accomplishment verbs modeled after Martin’s (2015, 2020) general approach.

- (69) a. Agentive causation consists of two sub-events: agent’s action and the theme’s CoS.  
 b. Non-agentive causation consists solely of one sub-event: the theme’s CoS.  
 c. Unmarked causative accomplishment verbs are endowed with  $PFV_M$  in Indonesian.

Following one of the reviewers’ suggestions, I take it that the agentive causation and non-agentive causation interpretations can be represented as shown in (70a) and (70b) to capture the assumptions summarized in (69a) and (69b), respectively, when  $PFV_M$  applies to them.

- (70) a. Agentive causation:  
 $PFV_M(\lambda e. \text{AGENT}(e) \text{ (external argument) } \& \exists e' [\text{BECOME}(e')(\lambda s. \text{result state}(s) \text{ (subject)})])$   
 $\rightarrow$  Maximizing the causation event  
 b. Non-agentive causation:  
 $PFV_M(\lambda e'. \text{CAUSER}(e) \text{ (external argument) } \& \text{BECOME}(e')(\lambda s. \text{result state}(s) \text{ (subject)})$   
 $\rightarrow$  Maximizing the becoming event

As for the syntax of the two types of causation, I assume that agentive and non-agentive causation types are associated with the (partial) syntactic structures shown in (71a) and (71b), respectively.



Here, I am adopting the proposal, due to Folli and Harley (2004), Schäfer (2008) and Harley (2013), that the agent vs. causer arguments are introduced in the syntactic derivation through different flavors of a functional head, more specifically,  $\text{Voice}_{ag}$  and  $\text{Voice}_c$ . In (71a), both the  $\text{Voice}_{ag}$  layer and the VP are mapped onto the agent’s action and the theme CoS’s sub-events. In (71b), only the VP is mapped onto the theme’s CoS sub-event.<sup>11</sup>

The ACH effects, illustrated in Indonesian by the contrast between (21a, b) and (22a, b) are now explained from the interaction of (69a)/(69b) with (69c) as follows. The causative VPs in (21a, b), instantiating the agentive causation type, are associated with the agent’s action sub-event and the theme’s CoS sub-event ((69a)). Recall from section 4.2 that the Maximal Stage Requirement of the  $PFV_M$  ((69c)) can be satisfied as long as there is a sub-part  $e'$  realized in  $w^*$  which does not form a proper part of any actual event  $e''$  that is also part of a possible P-event.

<sup>11</sup> One question remains with (70a). How are the causing event and the becoming event related in the semantic representation? Given my syntactic analysis of the agentive causation reading in (71a), I am inclined to conjecture that the causation component of the causative CoS verbs under investigation should be incorporated into the semantics of the  $\text{Voice}_{ag}$  head, instead of some empty verbal head (see also Pylkkänen 2008 and Martin 2020 for relevant discussions), but I must leave more in-depth explorations of this and related issues for another occasion. Thanks to an anonymous reviewer for bringing my attention to this question.

PFV<sub>M</sub> then may apply to any sub-part of the agent's action component that is realized in the actual word which has not yet caused any CoS on the part of the theme's referent. This then yields the non-culminating, zero CoS construal in (21a, b).

The causative VPs in (22a, b), on the other hand, instantiate the non-agentive causation type, which means that they consist solely of the theme's CoS sub-event ((69b)). Hence, PFV<sub>M</sub> requires that at least some part of the relevant change must be realized in the actual world to satisfy its Maximal Stage Requirement. Consequently, this requirement is contradicted by the subsequent denial of any CoS in the second clause, giving rise to contradiction in (22a, b). Note that under the current analysis, the non-agentive causation examples in (22a, b) are interpreted in the same way as their anti-causative/inchoative variants in that their interpretation in both cases depends on their sole event: the theme's CoS component. As such, we correctly predict that the latter variants indeed cause contradiction, as shown in (72a, b).

- (72) a. Ali mati, #tapi dia tidak mati.  
 Ali die but he NEG die  
 '#Ali died, but he didn't die.'
- b. Pintu tertutup, #tapi tidak tertutup sama sekali.  
 door close but NEG close at.all  
 '#The door closed, but it didn't close.'

Recall further that I have presented several examples in section 3 to show that it is the presence of the agentive external argument which controls the non-culminating, zero CoS interpretation with causative accomplishment verbs. I propose that this sensitivity to the external argument's agentivity is captured if we assume that only the particular flavor of *v*, Voice<sub>ag</sub>, introduces the agent's action sub-event. According to this proposal, the examples in (21b) and (29) are grammatical under the relevant interpretation because their syntactic derivation contains the volitional external argument in the specifier of Voice<sub>ag</sub>. By contrast, the current proposal correctly excludes this interpretation in (22b)/(31) (with an inanimate, non-volitional causer external argument), (27)/(31) (with an accidental, hence non-volitional causer external argument) and (28)/(32) (with the covert oblique agent expression not base-generated in [Spec, Voice<sub>ag</sub>] in *di*-passives).

An independent argument for this syntactic assumption comes from the availability of the non-culminating interpretation of an agentive causative verb in so-called zero passives or Passive Type-2 constructions in Indonesian (Chung 1976; Hopper 1983; Verhaar 1988; Sneddon 1996; Arka and Manning 1998; Musgrave 2001; Cole et al. 2008). (73) illustrates this type of passive.

- (73) Buku ini harus kau=baca. (Zero Passive)  
 book DEM must 2SG=read  
 'You must read this book.' (Sneddon 1996:249)

It is well-established in the literature that this passive construction has certain prominent syntactic properties. Firstly, the agentive DP is obligatory and must appear immediately before the bare verb in zero passives, unlike in *di*-passives where such an expression can be omitted (see (28) and (32)). Secondly, the agentive DP must be realized as a first- or second-person pronominal clitic at least in standard varieties of Indonesian. Thirdly and most importantly for our current purposes, the agent of the *di*-passive is an oblique argument whereas that of the zero passive is a core argument: see Arka and Manning (1998), in particular, for convincing evidence for this conclusion based on pronominal binding (see also Chung 1976, Hopper 1983, Verhaar 1988, Musgrave 2001, and Cole et al. 2008 for other arguments). Translated in the modern generative framework, this latter finding means that the pronominal agent attached to the bare verb is base-

generated as the external argument in the specifier of  $\text{Voice}_{ag}$ .

Given the last observation concerning the status of the agent argument in zero passives, my current analysis predicts that this construction should be able to permit the non-culminating, zero CoS construal of a causative accomplishment verb. This is because the  $\text{Voice}_{ag}$  layer containing the core agentive external argument in [Spec,  $\text{Voice}_{ag}$ ] is mapped onto the agent's action sub-event, just as in regular active agentive causative cases. Examples (74) and (76) show that this prediction is indeed borne out. The corresponding *di*-passive examples in (29) and (33) are repeated here as (75) and (77), respectively, for comparison's sake.

(74) Pintu itu ku-tutup demi keamanan, tapi tidak tertutup. (*Di*-Passive)  
 door DEM 1SG-close for security but NEG close  
 ‘#I closed the door for security reasons, but it didn’t close.’

(75) Pintu itu di-tutup demi keamanan, #tapi tidak tertutup. (*Di*-Passive)  
 door DEM PV-close for security but NEG close  
 ‘#The door was closed for security reasons, but it didn’t close.’

(76) Sampah itu ku-bakar supaya tidak bau, tapi tidak terbakar  
 trash DEM 1SG-burn so.that NEG smell.bad but NEG burn  
 sama sekali. (*Zero passive*)  
 at.all  
 ‘#I burned the trash so that it wouldn’t smell bad, but it didn’t burn at all.’

(77) Sampah itu di-bakar supaya tidak bau, #tapi tidak terbakar  
 trash DEM PV-burn so.that NEG smell.bad but NEG burn  
 sama sekali. (*Di*-Passive)  
 at.all  
 ‘#The trash was burned so that it wouldn’t smell bad, but it didn’t burn at all.’

The contrast between (74)/(76) and (75)/(77), therefore, provides independent support for my analysis whereby only  $\text{Voice}_{ag}$  may introduce the agent's action sub-event which, in turn, interacts with the Maximal Stage Requirement of  $\text{PFV}_M$  to yield the non-culminating reading.

Note, furthermore, that the same contrast lends support to the view that the notion of agentivity/intentionality is encoded grammatically in the syntactic structure and its interface with lexical semantics of a causative accomplishment verb. If the relevant notion were merely conceptual, then it would be completely mysterious how the *di*-passive and zero passive variants, which arguably denote the same core VP-event modulo the afore-mentioned morphosyntactic differences, end up yielding the different pattern with respect to the non-culminating interpretation. This question receives a straightforward account if the source of the discrepancy lies in the syntactic representation of the agentivity of the external argument: zero passives, but not *di*-passives, have the core agent argument in [Spec,  $\text{Voice}_{ag}$ ].

Let us end this section by noting that there is another equally plausible approach to the ACH effects in Indonesian different from the one adopted in this paper.<sup>12</sup> Martin and Schäfer (2012, 2015) observe that the relevant effects are observed with what they call ‘defeasible causative verbs’ (Oehrle 1976) in English, French and German. The French example in (78a, b) illustrate this phenomenon.

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<sup>12</sup> Thanks to an anonymous reviewer for drawing my attention to the modality-based approach to the ACH effects and relevant references including Martin and Schäfer (2012, 2015).

- (78) a. L'organisateur de la course lui a offert la première place. Mais elle a refusé ce marché.  
 'The organizer of the race offered her the first position, but she refused the deal.'  
 b. Son excellent résultat lui a offert la première place. # Mais elle ne l'a pas prise.  
 'Her excellent result offered her the first position, but she didn't take it.'  
 (Martin and Schäfer 2012:248)

Adopting the view that the bi-eventive representation of defeasible causatives contains a necessity modal operator at the sub-lexical level (Koenig and Davis 2001), Martin and Schäfer (2012, 2015) propose that the modal operator is associated with the two different modal bases depending on the theta-role of the external argument; the agentive external argument introduces the energetic modal base whereas the causer external argument introduces the circumstantial modal base, as shown in the lexical representation shown in (79) for the French double objective verb *offrir y à z* 'to offer a to z', where  $\rho$  is a free variable for the modal base.

- (79)  $\llbracket$  [VP *offrir y à z*]  $\rrbracket$   
 $\lambda y \lambda x \lambda e$  [offer ( $e$ )  $\wedge$  theme ( $e, y$ )  $\wedge$  recipient ( $e, z$ )  $\wedge$   
 $\square \rho \exists e' (\text{cause } (e, e') \wedge \text{have } (e') \wedge \text{possessee } (e', y) \wedge \text{possessor } (e', z))$   
 $=\text{def } \lambda y \lambda x \lambda e$  [OFFER ( $\rho, e, z, y$ )]  
 Conditions:  
 (i)  $\forall e \forall z \forall y (\text{OFFER } (\rho, e, z, y) \wedge \exists x (\text{agent } (e, x)) \rightarrow \rho = \text{energetic}$   
 (ii)  $\forall e \forall z \forall y (\text{OFFER } (\rho, e, z, y) \wedge \exists x (\text{causer } (e, x)) \rightarrow \rho = \text{circumstantial}$   
 (adopted from Martin and Schäfer 2012:251)

When the modal base is energetic, the caused event  $e'$  is claimed to hold in all those worlds where the action denoted by the VP achieves its goal. Since the world of evaluation is not necessarily included in this set of worlds, the statement in (78a) does not entail that  $e'$  took place in the real world. By contrast, when the modal base is circumstantial, the same event must be entailed because the world of evaluation is always accessible. Hence, the statement in (78b) is anomalous.

As far as I can see, both my proposed analysis and the sub-lexical modal-based analysis can correctly capture the link between the agentivity of the external argument and the availability of non-culminating interpretations in Indonesian. One fundamental question with the latter analysis, though, is that it remains silent on why agentive causation is associated with the energetic modal base whereas non-agentive causation is associated with the circumstantial modal base. Under my proposed analysis, by contrast, the correlation between the two types of causation and the theta-role of the external argument follows from the close interaction of the functions of the  $\text{PFV}_M$  with the factually motivated assumption that only agentive causation is factored out into action and result. This being said, however, I must leave the important task of choosing between these two analyses on other independent (empirical) grounds to future research.

To summarize this sub-section, I have demonstrated how the independently motivated assumption that agentive causation is to be factored out into the agent's action and the theme's CoS sub-events, unlike non-agentive causation, closely interacts with the Maximal Stage Requirement of the  $\text{PFV}_M$  to give rise to the agentivity-sensitive distribution of the non-culminating, zero CoS reading of causative accomplishment verbs in Indonesian, as predicted by the ACH generalization.

**5. CONCLUSION.** In this paper, I have proposed to extend Martin's (2015, 2020) recent approach to two causation types to Indonesian causative accomplishment verbs. My primary empirical focus has been the non-culminating, zero CoS construal of this verbal class and its origin. Martin's central hypothesis is that causation comes in two types depending on the

agentivity of the external argument: the agentive causation type is understood in terms of the agent's action and the theme's CoS whereas the non-agentive causation type is understood only in terms of the theme's CoS just as in anti-causative/inchoative constructions. I have demonstrated how this difference interacts with the partitive perfective operator  $PFV_M$  to yield the ACH effects in Indonesian, namely, the availability of the non-culminating, zero CoS construal with agent subjects, but not with causer subjects. I have also presented three independent pieces of evidence, internal to Indonesian, directly supporting the view that the agentive causation type is associated with the afore-mentioned two sub-events whereas the non-agentive causation type is associated only with the theme's CoS sub-event.

The proposed analysis has two important implications, each worthy of further in-depth future investigations and verifications. Firstly, cross-linguistically speaking, the data reported here suggest that Indonesian behaves on a par with many other (families of) languages, including Malagasy (Travis 2000, 2005), Tagalog (Dell 1983; Alonso-Ovalle and Hsieh 2017, 2018), Salish (Bar-el et al. 2005; Jacobs 2011, Kiyota 2008), Mandarin Chinese (Tai 1984; Martin 2015, 2019, 2020; Martin et al. 2018), Japanese (Ikegami 1980/1981, 1981, 1985; Kageyama 1996, 2002; Tsujimura 2003), Korean (Park 1993; van Valin 2005; Lee 2015; Beavers and Lee in press), and other languages documented in Demirdache and Martin (2015) and Martin (2015, 2019, 2020), which are all reported to exhibit the non-culminating, zero CoS readings of causative verbs only when their subject is agentive. In other words, the results attained present new evidence from Indonesian for the ACH (Demirdache and Martin 2015), which establishes that the relevant construal is possible with causative accomplishment verbs when the subject is an agent, but not a causer.

Secondly, as noted by other works including Tsujimura (2003) (see section 2 for some discussion on this point), it has been a perennial issue in the literature whether the notion of agentivity is linguistically represented. The results of this study show that the answer is resounding yes; agentivity has to be represented at some level of linguistic representation, either in the Lexical Conceptual Structure (Levin and Rappaport-Hovav 1995; Pustejovsky 1991) or in syntactic structures (Pylkkänen 2002; Harley 2009, 2013), because it has clear repercussions on the result entailment/culmination of causative accomplishment verbs in Indonesian.

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