Unaccusativity in Crow*

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Abstract: Like in many other Siouan languages, Crow displays an active-stative (or Split-S) system. This paper explores the semantic features that underlie the active-stative split in Crow and examines a handful of distinct morphosyntactic behaviors between active and stative intransitives. Specifically, the two questions that are addressed in this paper are as follows: What are the semantic factors, if any, that would allow us to predict which class a verb belongs to based on its meaning alone? Is there (morpho)syntactic evidence in Crow to support the unaccusative hypothesis? The overall claim is that unaccusativity in Crow is semantically determined, but syntactically encoded. The semantic base underlying the two verb classes involves an interaction between agentivity and lexical aspect, while several possible unaccusative diagnostics, involving multiple exponence, the "inchoative" morpheme *-dee*, causative alternation and noun incorporation, provide support for an analysis that active intransitives are unergatives and stative intransitives are unaccusatives.

Keywords: Crow, active-stative, split intransitivity, unaccusativity

1. Introduction

Like in many other Siouan languages, Crow displays an active-stative (or Split-S) system.[1] In Crow, this morphosyntactic alignment system is directly observable through first- and second-person agreement markers on intransitive verbs, which belong to one of two classes: ACTIVE or STATIVE. In an active intransitive verb, as in (1), the verb takes the active (A-set) morpheme *baa-* to refer to the first-person subject, which is shown in bold. On the other hand, intransitive verbs that belong in the stative class cross-reference their subjects using stative (B-set) morphemes, such as the first-person morpheme *bii-*, as in (2), which is underlined. The A- and B-set morphemes also appear on active transitive verbs to reference subjects and objects, respectively. Thus, intransitive verbs in Crow take different person morphemes depending on whether they are active or stative: active verbs take A-set markers whereas stative verbs take B-set markers. The full paradigm for A- and B-set morphemes across intransitive verbs are given in Table 1.[2]

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[1] See Mithun (1991) for a discussion of the various terms used to refer to an active-stative alignment system.

[2] Abbreviations used in the glosses are as follow: A: A-set, B: B-set, CAUS: direct causative, DECL: declarative, IMPER: imperative, INCHO: inchoative, INDEF: indefinite, INSTR: instrumental, NEG: negation, PL: plural, SS: same-subject marking, 1: first person, 2: second person, 3: third person. Unless otherwise indicated, the data in this paper

(1) Active intransitive verb:
baa*-lisshí-k*
1A-dance-DECL
'I danced' (FBD)

(2) Stative intransitive verb:
bii-wíisshi-k
1B-tell.lie-DECL
'I lied' (RS)

Table 1: A- and B-set agreement morphemes in Crow

	A-SET	B-SET
1SG	*baa-*	*bii-*
2SG	*daa-*	*dii-*
3SG	∅	∅
1PL	*baa-* +PL	*balee-*
2PL	*daa-* +PL	*dii-* +PL
3PL	∅- +PL	∅- +PL

A major challenge for learners of an active-stative language such as Crow is knowing when a verb employs either the A- or B-set morpheme.[3] One obvious approach is for learners to memorize and eventually internalize which class each verb belongs to. With over 900 documented intransitive verbs (see Gordon & Graczyk n.d.), this formidable and daunting task requires significant amounts of dedication, time, and effort. If there are semantic regularities within each of the two classes that learners can instead leverage, then this would certainly be a more effective and less arduous approach. The questions we might then ask are as follow: Are there patterns, based on the kinds of verbs in each class and their meanings, that would allow a learner to reliably predict whether a verb takes the A- or B-set morpheme? Additionally, how else might these patterns help us learn other areas of Crow grammar more effectively?

The goals of this paper are twofold. First, I investigate the semantic factors that determine whether a verb in Crow is likely to be active or stative. What I ultimately claim is that the distinction between active and stative intransitive verbs is indeed based on their lexical meaning. Specifically, I propose that the semantic base underlying the two verb classes involve an interaction between agentivity (i.e. control) and lexical aspect (i.e. states vs. nonstates). The second goal of this paper explores the (morpho)syntactic properties of active and stative verbs in Crow in relation to unergative and unaccusative verbs (i.e. the unaccusative hypothesis), that have been widely discussed in the literature on syntactic theory. Identifying which class a verb is associated with will also allow learners to form sentences in ways that parallel with the language used by fluent speakers of Crow. For example, constructions that involve the so-called modal and continuative auxiliaries, benefactive, imperative, among others, display structural differences that rely on verb class membership. The questions I am concerned with are of a more theoretical nature and consist of investigating not only *what* these differences are, but also *why* these differences exist. Based on four sources of evidence that involve constructions in which contrasting morphosyntactic patterns can be found between active and stative verbs, I analyze active intransitives as unergatives and stative intransitives as unaccusatives.

come from my own fieldwork during 2018 and 2019. Speaker names are abbreviated in the following way: FBD: Felice Big Day, COE: Cyle Old Elk, JRB: Jack Real Bird, RS: Riley Singer, and CY: Charles Yarlott Jr.

[3]This paper sets aside mixed-class verbs that straddle between active and stative classes and that take a mixture of both A and B- morphemes.

This paper is written with three types of readers in mind: general linguists (e.g. specialists in language typology), Crow language educators who have some background in linguistics, and other Siouan linguists and researchers. First of all, this paper provides a description of the semantic classification of active and stative verbs in Crow and focuses on the morphosyntactic differences between these two verb classes. Those seeking to better understand the diversity of active-stative languages may find these descriptions helpful. Second, I provide three proposals for the semantic base of the active-stative alignment in Crow. Crow language educators may find these proposals resourceful since they, in principle, will allow learners to predict the verb's class based on its meaning alone. Third, the methodology employed in this paper is described in detail so that others, especially those in the Siouanist community, may find the approach useful in their own language work. In addition, Siounists engaged in comparative research may also find interest in some of the arguments made in this paper.

2. Semantic factors underlying the active-stative split in Crow

Surveying a number of active-stative languages, Mithun (1991) discusses two primary semantic correlates of the active-stative split. One semantic factor is LEXICAL ASPECT (or AKTIONSART) which concerns the inherent temporal properties of verbs. The second semantic factor involves AGENTIVITY which relates to the degree of agency that the subject has over the situation denoted by the verb. Mithun further distinguishes four subclasses of agentivity: performance, effect, instigation, and control. For example, in her classification of Lakota, she claims that performance, effect, and instigation, but not control are directly involved for verbs that belong to the active set (Mithun 1991:516). That is, in Lakota, active verbs tend to indicate situations that participants perform, effect, and instigate, but not control. Throughout this section, I employ her methodology to test which semantic feature(s) best captures the patterns underlying the active-stative split. While Mithun takes a fine-grained approach towards agentivity, I only focus on the notion of CONTROL, setting aside performance, effect, and instigation from the analysis.

In his unpublished manuscript, Rankin (2004) argues that the semantic factors discussed by Mithun cannot be applied across the Siouan languages. The crux of his argument lies in the exceptions and inconsistencies that surface when attempting to classify verbs based on Mithun's semantic typology. For example, stative verbs like 'fall down' and 'perspire' are counterexamples to a classification based on lexical aspect, while active verbs such as 'snore' and 'sneeze' are problematic for the agentivity account. Yet Rankin's push back to Mithun's classification is based on a comparative, holistic approach to the Siouan language family, rather than on a language-by-language basis. As important as it is to understand how languages within a single language family converge and diverge, a bird's-eye view approach cannot lead to claims that rule out potential semantic factors for individual languages; instead, an in-depth study into each individual language is required.

In terms of the active-stative split in Crow, Graczyk (2007) acknowledges that the division between active and stative verbs is based on their lexical meaning. Specifically, he writes that "it is possible to classify a verb as active or stative simply on the basis of its semantic properties [...] knowledge of the meaning of a verb will almost always enable one to predict its class membership" (Graczyk 2007:177-178). However, Graczyk does not provide what these semantic properties might be, and therefore the goal of this section is to investigate and determine precisely

which features motivate verb class membership in Crow.

In what follows, I focus on intransitive verbs in Crow, for which there are roughly 380 active verbs and 580 stative verbs that appear in Ray Gordon and Randolph Graczyk's unpublished and undated *A Dictionary of Crow*. Most of the data in this section originally come from Gordon & Graczyk's Crow dictionary, but all of the words that appear in this paper were checked with at least one speaker of Crow. Because this paper only deals with intransitive verbs, future investigations into the active-stative split in Crow should also consider (di)transitive verbs and whether the analysis put forth here can be extended to those verbs.

2.1. Fluid-person marking verbs

Fluid-person marking verbs are verbs that can take either A- or B-set morphemes. However, verbs differ in their meaning depending on which morpheme is used. Three examples of fluid-person marking verbs are given in (3–5). As an illustration, let us first consider the verbal stem *daxchí-* in (3). Here, when an A-set morpheme is used, we obtain the meaning 'tie, bind', but when a B-set morpheme is used, we instead get the meaning 'choke (on food), gag'.

(3) *daxchí-* (Graczyk 2007:149):
   a. Active: *daxchí-* 'tie, bind'
   b. Stative: *daxchí-* 'choke (on food), gag'

(4) *xachií-* (Wallace 1993:88; CY):
   a. Active: *xachií-* 'move (location)'
   b. Stative: *xachií-* 'feel movement, being moved'

(5) *daxxálua-* (FBD)
   a. *daxxálua-* 'drag'
   b. *daxxálua-* 'slide'

Fluid-person marking verbs make a particularly fruitful starting point because the shift in meaning has a potential to shed light on the semantic factors underlying the two verb classes. For example, a possible semantic explanation for the difference between 'tie, bind' and 'choke (on food), gag' involves control. That is, the act of tying or binding implies that the subject is in control of their own behavior in relation to the situation at hand, while choking on food or gagging implies a lack of subject control. Similar semantic explanations can be provided for (4) and (5) where A-set marking is associated with subject control while B-set marking corresponds to the lack of subject control.

Another semantic explanation for the difference in meaning between the use of A- and B-set morphemes involves lexical aspect. Lexical aspect, also sometimes referred to as aktionsart, refers to the inherent temporal properties of the verb. Specifically, when the A-set morpheme is used on the verb *xachií-* in (4), we get the meaning 'move (location)', which denotes an event or activity. In contrast, when B-set marking is used with the same verb stem, it now means 'feel movement' or 'being moved', both of which may be construed as states.

In light of the shifts in meaning between the use of A- and B-set morphemes in (3–5), there are two semantic properties that we should consider. First, as in (3–5), the shifts seem to be one of control; that is, A-set verbs denote events that are controlled by the subject, whereas B-set verbs

denote events that are not controlled by the subject. Second, as in (4), the shift could also be one of lexical aspect; A-set verbs denote events, whereas B-set verbs denote states. Based on these two semantic factors, we will now examine how well these predictors fare in accounting for verbs in the active and stative class.

2.2. Proposal #1: Lexical aspect

To what extent does lexical aspect explain which verbs fall in either the active or stative class? As their names suggest, one might expect active verbs to denote types of actions, while stative verbs denote states. Using the basic aspectual distinction STATE and EVENT (or NONSTATE), in which the latter involves a change to the situation, whereas the former does not (Dowty 1979), I group each verb based on the following criteria: Is the verb active or stative? Does the verb denote an event or a state? From this grouping, we obtain four discrete categories of possible verb types: (i) active verbs that denote events, (ii) stative verbs that denote states, (iii) active verbs that denote states, and (iv) stative verbs that denote events. The former two follow the prediction that active verbs denote events and stative verbs denote states, while the latter two are exceptions and present counterexamples to the proposal.

Overall, lexical aspect appears to be a reliable predictor of active and stative intransitive verbs – most active verbs do in fact denote events and most stative verbs do indeed denote states, with examples provided in (6) and (7). In other words, verbs denoting events, such as *díili-* 'walk' and *xalússhi-* 'run', tend to be classified as active verbs that take A-set morphemes while verbs denoting states, such as *chía-* 'be white' and *isáa-* 'be big', are likewise often classified as stative verbs that take B-set morphemes.

(6) Active intransitives denoting events:

a. *díili-* 'walk'
b. *xalússhi-* 'run'
c. *iluú-* 'stand up'
d. *ilíi-* 'talk, speak'
e. *baachimmí-* 'study'
f. *disshí-* 'dance'
g. *chiwakíi-* 'pray'
h. *káa-* 'laugh, smile'
i. *shée-* 'die, faint'
j. *bilihpí-* 'bathe, swim'

(7) Stative intransitives denoting states:

a. *chía-* 'be white'
b. *isáa-* 'be big'
c. *satchí-* 'be thick'
d. *shishía-* 'be dirty'
e. *tawée-* 'be hot'
f. *ítchi-* 'be good'
g. *púmmi-* 'be short'
h. *xaliá-* 'be itchy'
i. *xawíi-* 'be bad'
j. *xusshí-* 'be fast'

Even though there is a strong tendency for active and stative intransitive verbs to denote events and states, respectively, there are still some exceptions, which are shown in (8) and (9). Verbs in (8), such as *chilíi-* 'be afraid', denote states but pattern like other active verbs in taking A-set morphemes, while verbs in (9) denote events and take B-set morphemes. The exceptions, while more numerous in the stative class, are counterexamples for the proposal that lexical aspect is the

single semantic property governing class membership. In order to assess the overall effectiveness of this proposal, we must also consider the reliability of other possible semantic factors. Only then will we able to compare the effectiveness of every proposal and determine the most appropriate semantic predictor of class membership in Crow.

(8) Active intransitives denoting states:

a. *chilíi-* 'be afraid'
b. *ilutchítchi-* 'feel guilty'

(9) Stative intransitives denoting events:

a. *bíile-* 'tell on, tattle'
b. *bíisshi-* 'tell a lie'
c. *ámmichi-* 'fall down'[4]
d. *apáali-* 'grow, sprout'
e. *chipí-* 'drown'
f. *daxxálua-* 'slide, skid'

2.3. Proposal #2: Agentivity

The second proposal involves the notion of AGENTIVITY. Specifically, as we have gleaned from the shifts in meaning across the fluid-person marking verbs in §2.1, another possible semantic base behind the active-stative split is CONTROL; that is, does the subject have control over their own behavior with regards to the situation denoted by the verb? In the literature, control is sometimes referred to by the broader term agentivity, and although not without problems, I use those two terms interchangeably in this paper.[5]

As with lexical aspect, I classify verbs using the following criteria: Is the verb active or stative? Does the subject of the intransitive verb have control over the situation denoted by the verb? While control may be viewed as a gradient phenomenon, for the purpose of this study, I treat it as categorical: either the subject has some control of the situation or the subject does not. The resulting categories are as follows: (i) active verbs with subjects that have control over the situation, (ii) stative verbs with subjects that lack control of the situation, (iii) active verbs with subjects that lack control of the situation, and (iv) stative verbs with subjects that have control over the situation. The former two categories are in line with the prediction that active verbs consist of subjects that control, to some degree, the situation, while stative verbs have subjects that completely lack control. Again, the latter two groups are exceptions and therefore should be subject to further scrutiny.

What we find is that agentivity is also a relatively reliable predictor of verb class membership – most active intransitives do indeed have subjects that control the situation, as in (10), whereas stative intransitives have subjects that lack control, as in (11). For example, verbs in (10), such as *disshí-* 'dance' and *chiwakíi-* 'pray', involve participants that are in control of their own dancing and praying. In contrast, verbs in (11), such as *isáa-* 'be big' or *púmmi-* 'be short', consist of subjects that do not control the situation – in general. one does not have control over their own inherent physical attributes.

[4] *ámmichi* > *awé* 'ground' + *dichí* 'hit' (cf. *awélichi-* 'fall down').

[5] See Duranti (2004) for a detailed discussion of agency in language and the proliferation of different usages across other disciplines.

(10) Active intransitives denoting events:

a. *díili-* 'walk'
b. *xalússhi-* 'run'
c. *iluú-* 'stand up'
d. *ilíi-* 'talk, speak'
e. *baachimmí-* 'study'
f. *disshí-* 'dance'
g. *chiwakíi-* 'pray'
h. *bilihpí-* 'bathe, swim'
i. *iiwaannía-* 'play'
j. *dée-* 'go'

(11) Stative intransitives denoting states:

a. *chía-* 'be white'
b. *shipíta-* 'be black'
c. *isáa-* 'be big'
d. *ítchi-* 'be good'
e. *púmmi-* 'be short'
f. *háchka-* 'be tall, long'
g. *satchí-* 'be thick'
h. *xaliá-* 'be itchy'
i. *xawíi-* 'be bad'
j. *chilía-* 'be cold'

Although the results so far suggest that active verbs tend to involve participant control, while most stative verbs do not, classifying verbs based on agentivity reveals a number of exceptions. These exceptions include active intransitives where participants lack control and stative intransitives where participants have some control over the situation. The counterexamples, which are more numerous in the active class, are displayed in (12) and (13), respectively.

(12) Active intransitives with participants lacking control of the situation:

a. *axxí-* 'cough'
b. *apiiaxxí-* 'sneeze'[6]
c. *pía-* 'fart, break wind'
d. *kalée-* 'vomit'
e. *chilíi-* 'be afraid'[7]
f. *shée-* 'die, faint'
g. *baashíali-* 'dream'
h. *páxpi-* 'suffer, feel pain'
i. *ilutchítchi-* 'feel guilty'
j. *iháwi-* 'sleep'

(13) Stative intransitives with participants controlling the situation:

a. *bíile-* 'tattle'
b. *bíisshi-* 'tell lie'

Among the exceptional verbs in the active class shown in (12) are verbs denoting internally-caused bodily processes, such as 'cough', 'fart' and 'vomit'. Despite the fact that these kinds of events are not directly caused by the participant, cross-linguistically these verbs form a homogeneous subset of verbs that pattern in some ways like agentive (or active) intransitive verbs (Levin & Hovav 1995).[8] If verbs denoting internally-caused bodily processes are typically classified in the same way as verbs where participants have direct control over the situation, then perhaps we can

[6] *apiiaxxí-* > *apá* 'nose' + *ii* 'instrumental' + *axxí* 'cough' (Gordon & Graczyk n.d.).
[7] Cf. *chilíihche* 'forbid someone to do something' > *chilíi-* 'be afraid' *-hche* 'indirect causative'.
[8] I speculate that the reason why internally-caused bodily processes tend to be classified as active verbs is that they involve indirect causation by *animate* participants.

set aside these so-called "exceptions." In doing so, the number of true exceptions for active verbs (e.g. *chilíi-* 'be afraid', *ilutchítchi-* 'feel guilty') dwindles significantly, and we can conclude that agentivity is a more reliable predictor than lexical aspect since it introduces less exceptions across the two classes overall.

If verbs that express internally-caused bodily processes pattern like active verbs, then we should not expect to find any such verbs in the stative class. Yet there is a handful of verbs that in fact express internally- caused bodily processes belonging to the set of stative verbs, given in (14). For example, *tannáa-* 'shiver' and *ilítshia-* 'stick, be smelly' are verbs that are found among other verbs in the agentive, active class in other languages, such as Italian.

(14) Stative intransitives internally-caused bodily processes:

a. *táwasaali-* 'sweat, perspire'[9]
b. *bixúa-* 'have diarrhea'
c. *alíishxachii-* 'shake due to hunger'[10]
d. *íishpuuxachii-* 'have cramps in stomach'[11]
e. *apíiluu-* 'have nosebleed'[12]
f. *shéhchikiichi-* 'hiccough'
g. *tannáa-* 'shiver'
h. *ilítshia-* 'stink, be smelly'
i. *daxchí-* 'choke (on food), gag'

How might we try to explain why verbs expressing bodily processes appear in both verb classes? One analysis involves varying degrees of participant control. That is, the more control a subject has over their own bodily process, the more likely it will be classified as an active verb, and the less control a subject has over their bodily processes, the more likely it is classified as a stative verb. For example, participants may exert more control over their flatulence (i.e. *pía-* 'fart, break wind') than their perspiration (i.e. *táwasaali-* 'perspire, sweat') and consequently, the former falls in the active class while the latter is in the stative class. But does the subject of the active verb *kalée-* 'vomit' have more control over their vomiting than, say, their own diarrhea with the stative verb *bixúa* 'have diarrhea'? In these cases, it is not so clear and may depend on various variables. Therefore, there is an inherent difficulty in determining which processes are more or less controlled by the subject, especially when we consider the possibility of cultural variation or culture specific patterns, where the degree of subject control may vary across different cultures. I leave the delineation between the two sets of bodily processes to future investigation but caution those who wish to take up this challenge to exercise utmost care.

While lexical aspect and agentivity both admit some exceptions, I claim that agentivity is a more reliable predictor. When lexical aspect is the main semantic factor, more exceptions are found in the stative class. In diametric opposition, with agentivity as a semantic base, more exceptions appear in the active set. This difference in size between the two sets of exceptions indicates that lexical aspect accounts for more active verbs while agentivity accounts for more stative verbs. However, the number of exceptions is far greater under the proposal involving lexical aspect than agentivity and consequently, I argue agentivity wins over lexical aspect. In the next section, I explore an additional proposal that combines lexical aspect and agentivity.

[9] *táwasaali-* > *tawée* 'hot' + *asaalí* 'come out, exit'.
[10] *alíishxachii-* > *alíishi* 'be hungry' + *xachíi* 'move'.
[11] *íishpuuxachii-* > *íishpuu* 'stomach' + *xachíi* 'move'.
[12] *apíiluu-* > *apá* 'nose' + *ilúu* 'persist'.

2.4. Proposal #3: Lexical aspect and agentivity

The third proposal considers both lexical aspect and agentivity in predicting verb class membership. The hypothesis that I investigate here is stated in the following way: The split between active and stative verbs is based on an interaction between lexical aspect and agentivity—active verbs denote events that participants have control over, while stative verbs denote states that lack participant control. Because both lexical aspect and agentivity on their own are able to predict the majority of verbs, albeit with some exceptions, it follows that the combination of lexical aspect and agentivity should also provide a reliable diagnostic for determining which verbs belong in the active or stative set. Therefore, I focus on analyzing the exceptions that result from proposing a semantic factor involving an interaction between lexical aspect and agentivity as they provide greater insights into the effectiveness of the proposal. The exceptions found in the active set (i.e. uncontrolled states) and stative set (i.e. controlled nonstates) are displayed in (15) and (16), respectively.

(15) Active intransitives that denote states lacking participant control:

a. *chilíi-* 'be afraid'
b. *páxpi-* 'suffer, feel pain'
c. *ilutchítchi-* 'feel guilty'

(16) Stative intransitives denoting events with participant control:

a. *bíile-* 'tell on, tattle'
b. *bíisshi-* 'tell a lie'

The verbs in (15) and (16) are what I consider as true exceptions to the current investigation. In other words, I do not consider active intransitives that denote events but are not controlled by the participant (e.g. *shée-* 'die, faint', *axxí-* 'cough') or stative verbs that denote events but lack participant control (e.g. *ámmichi-* 'fall down', *apáali-* 'grow, sprout') as exceptions. Table 2 displays the distribution of Crow active and stative intransitive verbs based on the interaction between agentivity and lexical aspect.

Table 2: Distribution of Crow active and stative verbs based on an interaction between agentivity (i.e. control vs. non-control) and lexical aspect (i.e. event vs. state). Cells with a darker shade indicate a higher frequency of verbs for that particular interaction, and cells with lighter shade indicate lower frequency.

		EVENT	STATE
CONTROL	ACTIVE	*run, dance*	*sit, live*
	STATIVE	*tattle, tell a lie*	*be cruel, be lazy*
NON-CONTROL	ACTIVE	*die, vomit*	*be afraid, suffer*
	STATIVE	*slip, fall*	*be tall, be big*

Most verbs in Crow tend to cluster in two significant ways. First, there is a very strong tendency for verbs that denote events with participant control to be classified as active verbs. Second, verbs that indicate states with participants lacking control tend to be categorized as stative verbs. The next most frequent cells are verbs that denote events without participant control and these verbs can be found in both active and stative sets. Recall that many of the active and stative

verbs that belong to this category are exceptions found where the semantic factor was either agentivity or lexical aspect (see (9) and (12)). Less frequent are verbs that denote (semi-)states where participants have some degree of control and these verbs appear in both the active and stative class. Finally, verbs in (15) and (16), which I consider true exceptions to the present proposal, are the least frequent in their respective categories: active verbs that denote states lacking participant control and stative verbs that denote events with participant control. The distribution of verbs ranked by their frequency is given in Table 3.

Table 3: Distribution of Crow active and stative in order of most frequent (left) to least frequent (right) based on an interaction between agentivity (control vs. non-control) and lexical aspect (event vs. state).

	MOST FREQUENT			**LEAST FREQUENT**
ACTIVE	[EVENT, CONTROL]	[EVENT, NON-CONTROL]	[STATE, CONTROL]	[STATE, NON-CONTROL]
STATIVE	[STATE, NON-CONTROL]			[EVENT, CONTROL]

But why should verbs that denote events and lack participant control outrank verbs that denote states with participant control? While it is not clear to me exactly why this should be, it is interesting to note that states tend to strongly imply lack of control on the part of the subject. For example, as mentioned in §2.3, states, especially inherent attributes such as being big or being short, are typically not controlled by the subject. This observation is crucial also because it points to the intimate relationship between lexical aspect and agentivity. Still, active and stative verbs that denote uncontrolled states and controlled events, respectively, remain the lowest ranked categories in terms of their overall frequency.

An investigation into the proposal that an interaction between lexical aspect and agentivity underlies the active-stative split reveals that the classification of verbs in Crow does not have to rely on a single semantic criterion. Rather, lexical aspect and agentivity overlaps in complex but regular ways and verbs may fall at different points in the spectrum of this interaction, constrained by what is conceptually possible in language. Compared to the previous two semantic factors, this proposal has the most empirical coverage since it is able to account for most intransitive verbs in Crow and introduce the least number of exceptions. Additionally, this account fits squarely into the typological space of languages that also display an interaction between agentivity and lexical aspect, such as Nepali (Li 2007) and other Indo-Aryan languages (Schwarz, p.c., 2019). Moreover, it aligns with the notion that the semantic base underlying active-stative splits can shift over time (see Mithun 1991, Pustet 2002, and Rankin 2004)–the close interaction or relationship between the dual semantic bases provides one way in which this change can occur.

2.5. Interim conclusion

We have considered three proposals that allowed us to predict which verbs fall into which class based solely on their meaning: lexical aspect (ASPECT), agentivity (AGENT), and an interaction between lexical aspect and agentivity (ASPECT+AGENT). We observed that all three proposals are able to account for the majority of intransitive verbs in Crow and that all three are prone to some number of exceptions. In particular, proposal ASPECT+AGENT introduces the least number of exceptions, and consequently, of the three proposals, it has more explanatory power and empirical coverage.

Yet proposal ASPECT+AGENT requires an additional semantic factor to be stipulated. Even more so, it does not provide an account for verbs that straddle between the leftmost and rightmost (i.e. most and least frequent) columns in Table 3. For example, this proposal does not help us determine whether verbs that denote uncontrolled events belong to the active or stative class. From the perspective of a learner of Crow, this point is critical.

What then is the best tool that we can provide learners to effectively generalize across most intransitive verbs in Crow? Proposal AGENT has an advantage over proposal ASPECT—the former accounts for more verbs and leads to less exceptions. As we have discussed, many of the exceptions of proposal AGENT also form a coherent set of bodily processes (see (12)). If learners simply memorize these and other exceptions, then using agentivity as an active-stative diagnostic will cover most, if not all, of the intransitive verbs. Thus, proposal AGENT is the best tool we have to provide students to empower their own learning of Crow. In other words, *active verbs tend to involve subjects that have control over their own behavior in relation to the situation*.

From an analytic standpoint, I ultimately claim that proposal ASPECT+AGENT best captures the patterns of the active-stative split across intransitive verbs. First, the natural relationship between agentivity and lexical aspect results in the broadest coverage of intransitive verbs in Crow. Second, as we will see in §3.2, the exceptions of proposal ASPECT+AGENT are subject to variation across speakers suggesting a possible change in progress; exceptional verbs involving bodily functions under the proposal AGENT are not subject to such variation. Finally, although proposal AGENT has better direct applications in language teaching, one still has to grapple with the exceptions that involve internally-caused bodily functions within the active set.

3. Unaccusative diagnostics

In the previous section, I have suggested three possible semantic proposals to account for intransitive verbs in their respective classes. Each proposal is able to explain the majority of intransitives to varying degrees and whatever is the optimal proposal is up for debate. Nevertheless, it is clear that verb class membership in Crow is semantically determined; that is, for a given intransitive verb, if one knows its meaning, then one can reliably predict which verb class it belongs to. In this section, I explore the differences in morphosyntactic behaviors between active and stative intransitive verbs to show that while the two verb classes are semantically predictable, they also represented syntactically in different ways. These different syntactic encodings thus explain why we observe such different structural behaviors and understanding which class a verb belongs to will allow learners to construct sentences that fit the structural profile of other verbs within the same set.

Before we proceed, it is important to briefly overview the UNACCUSATIVE HYPOTHESIS. In his seminal paper, Perlmutter (1978) proposes that intransitive verbs consist of two classes, namely UNERGATIVES and UNACCUSATIVES, and that each of these two classes of verbs corresponds to a distinct syntactic configuration. Specifically, unergative verbs introduce subjects (external arguments) that semantically and syntactically behave like subjects of transitive verbs, while unaccusative verbs introduce subjects (internal arguments) that semantically and syntactically behave like objects of transitive verbs.[13] For example, like subjects of many transitive verbs, subjects of unergatives tend to be agentive while, in contrast, much like objects of transitive verbs, subjects of unaccusatives

[13] While Crow has both active transitives and stative transitive, in this paper I use the term transitive to refer only to the set of active transitives.

tend to be non-agentive; that is, these arguments tend to undergo some action that is controlled by some external force or entity.

The unaccusative hypothesis has been thoroughly tested on languages from a diverse set of alignment systems (e.g., see Levin & Hovav 1995 and references therein). For a variety of active-stative languages, many scholars have analyzed active intransitives as unergative verbs and stative intransitives as unaccusative verbs (e.g., Rice 1991 for Slave, Williamson 1979 and Legendre & Rood 1992 for Lakota, Wallace 1993 for Crow, West 2003 for Nakota, Boyle 2007 for Hidatsa, *inter alia*). However, it is still not clear where Crow fits into this proposal. Wallace (1993:94-99) presents two main arguments for unaccusativity in Crow that rely on (a) the semantic characteristic of intransitive verbs and (b) its agreement morphology. It turns out, according to Levin & Hovav (1995), that these kinds of arguments are insufficient evidence for the unaccusative hypothesis. Ideally, one would provide arguments based primarily on syntactic evidence.

Is there syntactic evidence for a one-to-one correspondence in Crow between active intransitives and unergatives, and stative intransitives and unaccusatives? To address this question, I examine a number of differences in the morphosyntactic behaviors between the two sets of intransitives and determine to what extent they are able to support the unaccusative hypothesis. Ultimately, I identify four possible diagnostics: multiple exponence, the so-called "inchoative" morpheme *-dee*, causative alternation, and noun incorporation, as support for the existence of an unaccusativity split in Crow. Based on these four sources of evidence, I analyze active intransitives as unergatives and stative intransitives as unaccusatives.

3.1. Unaccusative diagnostic #1: Multiple exponence

Multiple exponence is the multiple realization of a single morphological feature within a word (Harris 2017). In Crow, there is a handful of constructions where multiple exponence obligatorily occurs. These constructions involve so-called modal auxiliaries (i.e. *-bia* 'want/going to', *-iimmaachi* 'will', etc.), continuative auxiliaries (i.e. *-daachi* 'keep on (continuous)', *-dahku* 'keep on (iterative)', etc.), and the benefactive marker *-ku*. Across these constructions, there is a divide between active and stative intransitive verbs in the realization of multiple exponence. For example, with modal auxiliary *-bia* 'going to', multiple exponence occurs only for active intransitives but not for stative intransitives. These two morphosyntactic behaviors, with multiple exponence given in bold, are displayed in (17) for active intransitive *disshí-* 'dance' and (18) for stative intransitive *ámmichi-* 'fall'. Moreover, multiple exponence occurs with active transitive verbs, such as *dichí-* 'hit' in (19).

(17) a. *baa-lisshí-k*
1A-dance-DECL
'I danced' (CY)

b. ***baa**-lisshí-wia-**waa**-k*
1A-dance-going.to-1A-DECL
'I'm going to dance' (RS)

(18) a. *bii-ámmichi-k*
1A-fall-DECL
'I fell' (CY)

b. *bii-ámmit-bia-k*
1A-dance-going.to-1A-DECL
'I'm going to fall' (JRB)

(19) a. *dii-waa-lichí-k*
2B-1A-hit-DECL
'I hit you' (CY)

b. *dii-**waa**-(l)ít-bia-**waa**-k*
2B-1A-hit-going.to-1A-DECL
'I'm going to hit you' (JRB)

Notably, the morpheme that is being multiply exponed is the first-person A-set marker that cross-references the agentive subject in the verbs *disshí-* 'dance' and *dichí-* 'hit'; the B-set marker that refers to non-agentive subjects and objects fails to exhibit multiple exponence, as with the verb *ámmichi-* 'fall'. Under the assumption that multiple exponence in Crow is syntactically motivated, the fact that the A-set agreement morpheme targets subjects of active intransitives and of transitive verbs and is subject to multiple exponence demonstrates that these arguments undergo similar syntactic processes and share similar syntactic configurations.[14] This point is crucial because the parallel behavior between subjects of active intransitive verbs *and* transitive verbs provides direct support for the unaccusative hypothesis. In contrast, B-set proclitics only refer to subjects of stative intransitives and objects of transitive verbs, but they may not be exponed more than once. Therefore, the claim is that an intransitive verb that realizes multiple exponence is unergative while a verb that displays no multiple exponence is unaccusative.

3.2. Unaccusative diagnostic #2: Inchoative *-dee*

The second unaccusative diagnostic involves the so-called "inchoative" suffix *-dee* which is roughly translated as 'become'. This suffix, which combines only with stative and not active intransitives, appears in imperative and desiderative constructions, and conjugates irregularly for the person of the subject. Below, I first describe the distribution of the inchoative in imperatives and then in desiderative constructions.

The imperative suffix *-ah* is used to express commands or requests. The imperative suffix attaches directly to active intransitive verbs (20) as well as transitive verbs (21). However, this suffix may not attach directly to stative verb stems. To form imperatives with stative intransitive verbs, the inchoative suffix *-dee* (underlined) must also be used, as in (22).[15]

(20) a. *Baláxi-h!*
sing-IMPER
'Sing!' (Graczyk 2007:151)

b. *Disshí-h!*
dance-IMPER
'Dance!' (COE)

(21) a. *Duushí-h!*
eat-IMPER
'Eat it!' (COE)

b. *Dichí-h!*
hit-IMPER
'Hit it!' (Graczyk 2007:151)

[14] While the nature of the agreement system of Crow is beyond the scope of this paper, interested readers are referred to Ko (2019) for an analysis of Crow as a split-agreement system consisting of φ-agreement and clitic doubling (or pronominal cliticization).

[15] The imperative suffix in Crow triggers ablaut that is a key feature of Siouan languages. For example, morpheme-final *-ee* is realized as *-aa* when directly preceding the imperative, as can be seen in (22) with the inchoative *-dee*.

(22) a. *Ítchi-laa-h!*
be.good-INCHO-IMPER
'Be good!' (FBD)

b. *Ámmit-daa-h!*
fall-INCHO-IMPER
'Fall!' (FBD)

The use of the inchoative highlights the dichotomous relationship between active and stative intransitives in the formation of imperatives. Moreover, it shows the analogous behavior between active intransitives and transitive verbs. With active intransitives and transitives, the imperative suffix directly attaches to the verbal stem, but with stative intransitives, the imperative suffix attaches to the derived stem with the inchoative.

But why should such a split exist between active and stative intransitive verbs? One line of analysis is to suggest that imperatives cannot combine with verbs denoting states. In fact, Lakoff (1966) proposes that imperatives are a test for stativity. Under this approach, stative intransitives can only be used in the imperative when combined with the inchoative—in theory, the inchoative converts stative intransitives into verbs denoting a change of state or achievement (i.e. *to be S* → *to become S*, where S is a state). More recently, however, there have been scholars who argue that imperatives are actually a test for agentivity, and not stativity (Dowty 1979:112, Levin & Hovav 1995:170-171, Jackson 2005). I follow these scholars in assuming that the imperative is not a test of stativity but of agentivity.

So what light does imperative formation shed on the syntactic encoding of active and stative intransitives? Speculating on the function of the inchoative, Wallace (1993:139) writes, "I often think of [*-dee*] as 'volitional be/become', since (in my analysis) it creates an unergative predicate from an unaccusative predicate." Besides appearing with the imperative, the inchoative also appears in desiderative constructions involving stative intransitives, as in (23). Note that the inchoative conjugates for first person in these examples. What is particularly striking is across these desiderative constructions, multiple exponence (bolded), which is generally restricted to the class of active intransitives and transitives, appears adjacent to the desiderative marker *-bia*.

(23) a. *háchka-wee-wia-waa-k*
tall-1A.INCHO-DESID-1A-DECL
'I want to be tall' (JRB)

b. *ámmit-**bee**-wia-**waa**-k*
fall-1A-INCHO-DESID-1A-DECL
'I want to fall' (JRB)

I suggest that the most appropriate analysis is that the inchoative does indeed derive an unergative verb from a stative, unaccusative verb, as first suggested by Wallace. This analysis has the following outcomes. First of all, the imperative suffix *-ah* requires the verb to have an agentive subject. Since subjects of unergatives are generally agentive, this fits neatly within the claims that imperatives are a test for agentivity. Therefore, the only way to make imperatives of stative verbs is to combine them with the inchoative marker *-dee* which transforms them from unaccusatives into unergatives and imbues the argument with agentive properties. Evidence for this transformation comes from desiderative constructions with stative intransitives which realizes multiple exponence, as in (23). These constructions also necessarily involve the inchoative suffix which is unsurprising since the desiderative generally implies a volitional subject. Since multiple exponence typically only occurs with unergative verbs, this provides further support for analyzing stative verb with inchoatives as derived unergatives.

While the intransitive verbs given in (20), (22), and (23) above represent clear cases of active and stative verbs that may or may not take the inchoative, there is a handful of verbs that

optionally allow the inchoative in the imperative and desiderative constructions. For example, the verbs in (24) optionally take the inchoative *-dee*. These verbs belong to the set of exceptional verbs found in §2 for proposals involving agentivity and an interaction between lexical aspect and agentivity. However, active verbs expressing internally-caused bodily processes are not subject to the same kind of optionality—these verbs do not permit the use of the inchoative.

(24) a. *Chilíi(-lee)-ssaa-h!*
be.afraid(-INCHO)-NEG-IMPER
'Don't be afraid!' (FBD)

b. *Bíile(-lee)-ssaa-h!*
tattle(-INCHO)-NEG-IMPER
'Don't tattle!' (FBD)

c. *Páxpi(-lee)-ssaa-h!*
suffer(-INCHO)-NEG-IMPER
'Don't suffer!' (FBD)

d. *Bíisshi(-lee)-ssaa-h!*
tell.lie(-INCHO)-NEG-IMPER
'Don't lie!' (FBD)

According to my consultants, whether an inchoative is used for the exceptional verbs in its imperative form is subject to intra- and inter-speaker variation.[16] The optional use of the inchoative also occurs in desiderative constructions, for example, with the verb *bíisshi-* 'tell a lie', as in (25) and (26). In (25), which consists of a third person subject, the inchoative may be optionally expressed. Since third person marking in Crow is null, examples consisting of a first-person subject is given in (26). In (26a), without the inchoative, the constructions patterns like other desiderative constructions with canonical stative intransitives in lacking multiple exponence. In contrast, multiple exponence occurs when the inchoative is used, as in (26b).

(25) *Logan bíishi(-lee)-wia-k*
Logan tell.lie(-INCHO)-DESID-DECL
'Logan wants to lie' (FBD)

(26) a. *bii-wíisshi-wia-k*
1B-tell.lie-DESID-DECL
'I want to lie' (FBD)

b. *bii-wíisshi-**wee**-wia-**waa**-k*[17]
1B-tell.lie-1A.INCHO-DESID-1A-DECL
'I want to lie' (FBD)

What this optionality suggests is that these exceptional verbs may in fact straddle both active and stative classes in their syntactic representations. With the inchoative, these verbs behave like any other unaccusative verb since unaccusative intransitives require the inchoative to co-occur in imperative and desiderative constructions. On the other hand, these same exceptional verbs may also leave out the inchoative entirely, which is a property of active verbs. Yet these verbs are not quite fully unergatives. In (26a), in which the inchoative is absent, multiple exponence still does not manifest as we would expect from a true active, unergative verb. I suggest that these verbs are undergoing a shift from one class to another. That is, a verb such as *bíishi-* may be in the process of being reanalyzed as an active verb rather than a stative verb, which is unsurprising given their exceptional status. If verbs are semantically determined and syntactically represented in a certain

[16] This pattern can also be found for the set of so-called mixed-class verbs, which draw from both A- and B-set morphemes, in imperative and desiderative constructions (see also Wallace (1993:142-143).

[17] This sentence is an outlier in being the only example in my corpus where A- and B-set cross-references the same argument; in all other cases, A- and B-set only refers to distinct arguments.

way, then a verb like *bíishi-* which patterns semantically like an active verb would be prone to being reanalyzed syntactically as an active intransitive verb over time by some speakers.

To sum up, the inchoative morpheme *dee-*, which occurs in imperative and desiderative constructions, attaches only to unaccusative verbs, not unergative or transitive verbs. Furthermore, the inchoative has an additional function of transforming unaccusatives into unergative verbs thereby allowing multiple exponence to occur.

3.3. Unaccusative diagnostic #3: Causative alternation

The direct causative in Crow *-ee* is a valence-increasing operation that introduces an additional argument, typically a causer or an agent, into the clause, and conjugates for the person of the subject. In other words, it transforms intransitive verbs into transitive ones. Although the direct causative is not particularly productive in Crow, the application of this morpheme is almost always restricted to stative verbs regardless of whether they denote states or nonstates, as in (27) and (28), where (i) represents stative verb stems and (ii) represents stative verb stems with the direct causative.[18]

(27) a. i. *óoshi-* 'be ripe, cooked'
ii. *óosshee-* 'cook'
b. i. *koowí-* 'be complete'
ii. *koowée-* 'complete, quit'
c. i. *úuchi-* 'be dry'
ii. *úutchee-* 'dry (something)'

(28) a. i. *apáali-* 'grow, sprout'
ii. *apáalee-* 'raise'
b. i. *passhí-* 'fall off'
ii. *passhée-* 'make fall down'
c. i. *xapí-* 'fall'
ii. *xapée-* 'drop'

The restriction on the direct causative suggests that the direct causative is sensitive to the syntactic configuration of the verb. In particular, if the verb already has an agentive argument in its syntactic representation (or argument structure), such as active intransitive verbs—which generally have agentive subjects—then the direct causative is blocked from attaching to the verb. In fact, there is evidence that the argument the direct causative introduces behaves like subjects of active intransitive and transitive verbs. First, in the imperative of the stative verb *úuchi-* 'be dry', the inchoative (underlined) must be used, as shown in (29a). With the direct causative on the same verb stem, however, the inchoative is no longer needed, as in (29b), when giving a request or command for something to be dried. Second, among constructions that trigger multiple exponence, such as the modal auxiliary *-bia* 'going to', multiple exponence is absent when the stative verb appears with just the modal auxiliary, as in (30a). In the same construction with a direct causative given in (30b), however, multiple exponence (bolded) occurs on the desiderative morpheme; the direct causative here conjugates for first person.

(29) a. *Úut-<u>daa</u>-h!*
be.dry-INCHO-IMPER
'Be dry!' (FBD)

b. *Úutt-ah!*[19]
dry-IMPER
'Dry it!' (FBD)

[18] One notable exception involves the set of motion verbs that are derived from the form *xii*. These motion verbs behave like active verbs but may take direct causatives.

[19] In Crow, *ch* occurs as *t* before low vowels and obstruents.

(30) a. *bii-úut-bia-k*
1B-be.dry-DESID-DECL
'I'm going to be dry' (FBD)

b. *baaaxúassee úutt-**baa**-wia-**waa**-k*
clothes dry-1A.CAUS-DESID-1A-DECL
'I'm going to dry the clothes' (FBD)

The overall claim here is that the newly introduced subjective argument of a stative verb that has been combined with the direct causative behaves syntactically and semantically like other subjects of active intransitive and transitive verbs. In light of this, direct causatives can only attach to unaccusative verbs because these verbs lack an agentive (external) argument; the direct causative introduces an external argument so if the verb already subcategorizes for one, the direct causative is prevented from applying altogether.

3.4. Unaccusative diagnostic #4: Noun incorporation

In Crow, noun incorporation is a syntactic process whereby a noun combines with and becomes incorporated into the verb Graczyk (2007:7, 293-297).[20] Noun incorporation, which is given in brackets, is attested only for nouns that are objects of transitive verbs, as in (31), and nouns that are subjects of stative intransitive verbs, as in (32). Active verbs, on the other hand, do not allow incorporation of their subjects and attempts to elicit compounding of nouns that are subjects of active intransitive and transitive verbs have so far been unsuccessful. These two sets of behaviors indicate that subjects of stative intransitive verbs and objects of transitive verbs once again pattern in syntactically similar ways thereby providing further support for the claim that stative verbs behave like unaccusative verbs.

(31) a. *Hinné baapé* [*Apsáalook-ilaa*]*-u ii baa-waachimmí-k*
this day Crow-talk-PL INSTR 1A-study-DECL
'Today I learned to speak Crow' (FBD)

b. *Logan* [*bishka-lúupia*]*-k*
Logan dog-dislike-DECL
'Logan dislikes dogs' (FBD)

(32) a. [*ilúk-hilahp*]*-ak*
meat-scarce-SS
'meat is scarce' (Graczyk 2007:282, Ex.21)

b. [*balás-itchi*]*-k*[21]
my.heart-be.good-DECL
'I feel good (lit. my heart is good)' (JRB)

[20] See Golston, Boyle & Gebhardt (2018) for a view that incorporation in Crow is purely phonological rather than syntactic. However, if noun incorporation is strictly phonological, as they claim, there is a question as to how phonology can successfully capture the unaccusativity patterns discussed here.

[21] Although *balásitchi-* 'be happy' is a lexicalized stative verb, its inclusion is to show that at one point in its diachrony, the subject *balás* 'my heart' of the stative verb *ítchi-* 'be good' has been incorporated into the verb.

4. Conclusions

In this paper, I have presented three proposals for the semantic base underlying the active-stative split in Crow. Although all three proposals are able to account for most intransitive verbs in Crow, there are still some exceptions. The first proposal, which considers lexical aspect, invites exceptions mainly in the stative class—stative intransitive verbs that denote events. The second proposal deals with agentivity and most exceptions fall in the active class, particularly internally-caused bodily functions. However, the number of exceptions is still fewer than when lexical aspect was considered as the primary semantic factor. The third proposal, which combined lexical aspect and agentivity, admits the fewest exceptions. While I argued that the third proposal has the most empirical coverage since it is able to correctly classify most intransitive verbs in Crow, the second proposal is perhaps more suitable for use in language education. Regardless, the high reliability of the proposals in predicting verb class membership provides strong evidence that verbs in Crow are semantically determined.

Beyond just looking at the semantics of the two verb classes, I have also examined the distinct morphosyntactic behaviors that active and stative intransitive verbs exhibit. I have presented (morpho)syntactic evidence from Crow in support of the unaccusative hypothesis based on four sources of evidence. The diagnostics involving multiple exponence and noun incorporation show that subjects of active intransitives behave syntactically like subjects of transitive verbs, and that subjects of stative intransitives behave like objects of transitives. The diagnostics involving the inchoative and direct causative demonstrate that these morphemes can only attach to stative intransitive verbs. The analysis put forth to explain these restrictions argues that these two morphemes require that an agentive (external) argument be lacking from the verb's argument structure. Their sensitivity to the verb's argument structure thus reveals insights on the syntactic configuration of active and stative intransitives. The distinct syntactic patterns between active and stative intransitive verbs therefore provide support for the unaccusative hypothesis—in Crow, active intransitives are unergatives and stative intransitives are unaccusatives.

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