

# CONSTRAINTS ON LICENSING “IF”-CLAUSES IN BLACKFOOT\*

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## 1. Introduction

The question I address is as follows: in what contexts are are Blackfoot conditionals licensed? If we take a Kratzer-style approach to conditionals, if-clauses are used to restrict a main clause modal (Kratzer 1981, 2012). Given this sort of analysis, with no further stipulations, we would predict that any modal would be able to license an if-clause. The observation made here is that not all modals in Blackfoot can license if-clauses. A caveat, however, is that I only look at causal conditionals - i.e., conditionals where the if-clause describes a situation that either causes the event described by the consequent clause to arise, or is a necessary condition for causation. I argue the licensing is semantic: only modals that allow for a prospective temporal configuration can license causal if-clauses.

### 1.1 Framework for Modality, Temporality and Conditionals

I assume modals are quantifiers over possible worlds which consist of (i) their quantification force, and (ii) their domain of quantification. The domain refers to the set of worlds that the modal makes reference to - eg., “the worlds compatible with a certain set of facts in  $w$ ,” where the “certain set of facts” is referred to as the modal base (MB) (Kratzer 1977, 2012). Force refers to whether the modal claim asserts that *all* of the worlds in the domain are worlds where the prejacent claim is true; or whether just *some* of them are. (1a) can thus be viewed as a claim made in consideration of the facts in (1b): all of the worlds compatible with these facts are worlds where Calvin beats the game.

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\* The data presented here are from the author's fieldwork with a Blackfoot speaker of the Kaináá/Blood dialect. Many thanks to B. Bullshields for sharing her language with me. Thanks also to L. Matthewson, H. Rullman, M. Wiltschko, H. Bliss, S. Thoma, and audience members at WSCLA 18, NWLC 29 and CLA 2013.

- (1) a. Calvin can/will/should beat the game.
- b. MB =  
 {Calvin just has to beat the final boss, He has three extra lives,  
 He's figured out how to beat the boss' trademark move}

The framework for modality proposed by Kratzer (1977, 2012) abstracts away from how modality interacts with temporality. Condoravdi (2002) addresses these interactions and identifies two temporal relations associated with modal claims: (i) Temporal Perspective and (ii) Temporal Orientation. Temporal Perspective is the relationship that holds between the utterance time and the modal evaluation time,  $t$ , which correlates to the time associated with the propositions in the modal base. In other words, the time during which the propositions in the modal base hold true. The facts in (1b) can thus be reformulated as holding true of a specific time - i.e.,  $t$  = the utterance time, for that particular example. Because the modal evaluation time is equivalent to the utterance time, the temporal perspective is 'present.' Temporal Orientation is the relationship that holds between the modal evaluation time and the instantiation time, which is the runtime of the event - i.e., the time associated with Calvin's beating the game in (1a). Because the meaning of (1a) is one where Calvin's beating the game occurs at some time  $t'$ , which follows the modal evaluation time,  $t$ , the temporal orientation is 'future' or 'prospective.' In what follows, I use the term 'prospective,' to refer to this sort of relation between times.

The final bit of theoretical framework required is a way to treat conditional constructions. I assume, following Kratzer, that the antecedent (if-clause) is hypothetically incorporated into a main clause modal's modal base. Thus a conditional like (2a) is treated just like (1a), except that we aren't just considering worlds where the first three (real world) facts are true, but worlds where those facts, in addition to the antecedent proposition '*the power comes back on*,' are true. Given these theoretical assumptions, I move onto the data.

- (2) a. If the power comes back on, Calvin will beat the game.
- b. MB<sup>+</sup> = at time  $t$ ,  
 {Calvin just has to beat the final boss, He has three extra lives,  
 He's figured out how to beat the boss' trademark move,  
*The power comes back on*}

## 2. Data: The Distribution of Causal Conditionals in Blackfoot

In this section I show that causal conditionals in Blackfoot require a specific sort of modal in order to be licensed. This can be illustrated with the data in (3a)<sup>1</sup>, where we see the ability modal, *ohkott-*, fail to license a causally-interpreted if-clause. The situation described by the if-clause (my sister making bread), is a situation that is necessary in order for the consequent (her making or being able to make sandwiches), to occur. The if-clause, however, is infelicitous. This is despite the fact that the main-clause/consequent contains the modal *ohkott-*, which could theoretically provide a modal base that the if-clause can be incorporated into. The way to express the desired meaning requires an additional modal on top of the ability modal, such as the future modal *áak-* (4), or the 'might' modal *aahkama'p* (5).

- (3) **Context:** Yesterday, my sister thought she might make bread. Today we're going for a picnic, and I wonder what she's going to bring. I say:  
*#kam-ikaa-ihkitaasi napayin, ohkott-a'pistotaki-wa po'tstaksiistsi*  
 if-perf-bake-sbj:3 bread, able-make.vai-3 sandwich-pl  
 Target: 'If she's made bread, she could have made sandwiches.'
- (4) **Context:** Yesterday, my sister thought she might make bread. Today we're going for a picnic, and I wonder what she's going to bring. I say:  
*kam-ikaa-ihkitaasi napayin, áak-ohkott-a'pistotaki-wa po'tstaksiistsi*  
 if-perf-bake.vai-sbj:3 bread, fut-able-make.vai-3 sandwich-pl  
 'If she's made bread, she could have made sandwiches.'
- (5) **Context:** The hockey team is hoping to get Heather to play as a ringer. The game is tomorrow, and I think:  
*annahk Heather kam-waawahkaa-si, aahkama'p-ohkott-omo'tsaaki-yaa*  
 dem Heather if-play.vai-sbj:3, might-able-win.vai-3pl  
 'If Heather plays, they might be able to win.'

As future *áak-* and *aahkama'p-* by themselves are sufficient to license causal if-clauses, as shown in (6), the data suggests that the presence of *ohkott-* in (4) and

1 Abbreviations: perf=perfect, impf=imperfective, neg=negation, fut=future; vai=animate intransitive verb, vii=inanimate intransitive verb, vti=transitive inanimate verb; 1,2,3 = 1st, 2nd, 3rd person, sbj=subjunctive, cj.nom=conjunctive nominalization, non.aff=non-affirmative ending; pl=plural, dem = demonstrative.

(5) is incidental with respect to licensing if-clauses.

- (6) **Context:** When my brother was very young, his pet frog got sucked up the filter. We told him the frog went back to live with its family. But 12 years later, we figure it's safe to tell him.

*kam-sksinii-si anohk o-áánist-a'pii-hpi*  
 if-know.vti-sbj:3 now 3-manner-happen.vii-cj.nom  
 'If he found out what happened now,'

- a. *máát-áak-ohtsikii-waatsiksi* b. *aahkama'p-sa-ohtsikii*  
 neg-fut-care.vai-non.aff:3sg might-neg-care.vai  
 'he wouldn't care.' 'he might not care.'

What about other modal contexts? The imperfective, for instance, has been crosslinguistically analysed as requiring a modal semantics, whether for its eventive/in-progress reading, or for its generic/habitual reading (Portner 1998, Deo 2009, ao.) We might then wonder whether the Blackfoot imperfective, *á-*, can license causally-interpreted if-clauses. The answer to this is both yes and no: while the imperfective *á-* can license causally-interpreted if-clauses, it can only do so under its generic/habitual interpretation. Consider (7) and (8):

- (7) **Context:** We don't want to let my brother's birthday pass without doing anything, so I suggest:

*#kam-ohpommaa-iniki owaa-istsi, nit-á-óhkott-pisatskiitaa*  
 if-buy.vai-sbj:1/2 egg-pl, 1-impf-able-fancy.bake.vai  
 Target: 'If I buy eggs, I can bake a cake.'

- (8) **Context:** I find a recipe for egg-free cake, but it ends poorly. I feebly try to defend my cake-making skills by saying:

*kam-ohpommaa-iniki owaa-istsi, nit-á-óhkott-(sok)-pisatskiitaa*  
 if-buy.vai-sbj:1/2 egg-pl, 1-impf-able-(good)-fancy.bake.vai  
 'If I buy eggs, I can bake a cake.'

(7) is an imperfective ability attribution in an ability-in-progress context, where the if-clause is infelicitous. (8) differs only in that the context given is one where we assess a general ability, where the if-clause is felicitous. As with the previous cases, the presence of the ability modal *óhkott-* is incidental with respect to the licensing of the if-clause. We can see this by looking at (otherwise) non-modal imperfective claims. If the imperfective is interpreted habitually, as in (9), the

causally-interpreted if-clause is acceptable. However, if the imperfective is interpreted as in-progress, a causal if-clause is infelicitous, as shown in (10); the only possible translation of (10) is a context-incompatible habitual/generic.

- (9) **Context:** Whenever my baby niece's diaper is being changed, or she's being undressed before a bath, or to be weighed at the doctors, she pees. We think the common factor is the cold.

*kam-i'niipitsi-si, á-saipiohsi-wa*  
 if-cold.vai-sbj:3, impf-urinate.vai-3  
 'If she gets cold, she pees.'

- (10) **Context:** My uncle loves to walk, but recently broke his leg. He's coming over for dinner, but we're not sure if he's walking over or getting driven, although we know he recently got his cast off. My mom remarks  
 Target: 'If his leg is better, he's walking'

*kam-ikaa-sok-a'pii-si o-ohkat-yi á-iksowoo-wa*  
 if-perf-good-be.vii-sbj:3 3-leg-inan impf-walk.vai-3  
 'If his leg is better, #he walks.'

MODAL Enviroment	Consequent	If-clause Licensed?
FUTURE	<i>áak-P</i>	✓
MIGHT	<i>aahkama'p-P</i>	✓
ABILTY	<i>ohkott-P</i>	✗
IMPF <sub>EVENTIVE/PROG</sub>	<i>á-P</i>	✗
IMPF <sub>HABITUAL/GEN</sub>	<i>á-P</i>	✓

*Table i: Summary of Modal Licensing Contexts for Causal If-Clauses*

### 3. Proposal: Licensing Correlates with Temporal Orientation

I propose that the licensing and non-licensing contexts for causal if-clauses in Blackfoot can be semantically characterized in terms of temporal orientation.

Recall that temporal orientation, as introduced by Condoravdi (2002), is the relationship between the modal's evaluation time,  $t$ , and the runtime of the modal's prejacent event,  $\tau(e)$ . The proposal is that the licensing modal contexts are the ones which allow for a prospective temporal orientation - i.e., cases where the modal evaluation time,  $t$ , can completely precede the run-time of the event. The non-licensing modal contexts are ones which require some degree of

overlap between these two times.

I further propose that the proposed characterization of the licensing contexts is conceptually motivated. Recall that the data generalizations only hold for causally-interpreted if-clauses, where the antecedent if-clause describes a situation that causes, or is necessary for, the main-clause/consequent to arise. If we take the premise that only forward causation is possible, we can posit a 'causal requirement' whereby the antecedent must temporally precede the consequent. Recall next that under the analysis for conditionals I assume, conditional antecedents are incorporated into the licensing modal's modal base, where the modal base is a set of temporally-indeterminate propositions (i.e.,  $\lambda t.\lambda w.$  expressions). These are then temporally interpreted with respect to the licensing modal's modal evaluation time,  $t$ . If the antecedent is incorporated into such a set, we might then propose that the antecedent is similarly a temporally-indeterminate proposition, which, after being incorporated into the modal's modal base, is also interpreted with respect to the modal evaluation time. Given this second premise, the causal requirement that the antecedent precede the consequent can be formalized as a requirement that the modal evaluation time,  $t$ , precedes the run-time of the prejacent event:

$$(11) \quad \text{THE CAUSAL REQUIREMENT:} \quad \text{ANTC} < \text{CNSQ} \approx t < \tau(e)$$

In order to license a causally-interpreted if-clause, then, we might expect that the modal must be compatible with the prospective temporal configuration laid out in (11). In what follows, I go through the various modal contexts presented in section 2, arguing that the licensing of the causal if-clauses indeed correlates with the possibility of a prospective temporal configuration.

### 3.1 Future and Prospective Temporal Configuration

I begin with the least controversial case. I assume, rather standardly, that Blackfoot's future modal *áak-* can license a prospective temporal orientation<sup>2</sup> - i.e., that it can make a claim based on facts at time  $t$ , and assert that there is some P-event that occurs after  $t$ . This is represented by the denotation and schema below:

$$(12) \quad \text{a.} \quad [[\acute{a}ak-]] = \lambda P.\lambda t.\lambda w.\forall w' \in \text{MAX}_G(\cap(f(w,t))) [\exists t'[P(t')(w') \ \& \ t < t']]$$

2 Although *áak-* is usually associated with a prospective temporal configuration, like English *will*, if the prejacent proposition is stative (or stative-like), a present/coincident temporal orientation arises (cf. Condoravdi 2002).



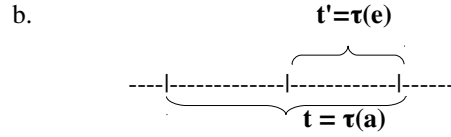
The relevant part of the denotation is the temporal orientation, encoded as  $t < t'$ . This is exactly the configuration I have suggested is required for the felicitous licensing of causal if-clauses, and correspondingly, as seen in section 2, the future modal *áak-* can license causal if-clauses. The same seems to be true of the modal *aahkama'p-*. It similarly licenses a prospective temporal orientation,<sup>3</sup> claiming that given the facts at  $t$ , there is a possibility of a P-event that occurs after  $t$ . And correspondingly, as we saw in the previous section, *aahkama'p-* can license causally-interpreted if-clauses.

### 3.2 The Ability Modal's Temporal Configuration

Consider next the semantics of an ability attribution. I propose that ability attributions are strong, action-dependent modal claims (cf. Brown 1988, Horty 2001, Xie 2012). This means that an ability attribution does not depend merely on the circumstances that hold during the modal evaluation time, but also on the possible actions available to the agent. An ability claim can thus be paraphrased as “there is an action available to the agent such that all of the worlds compatible with (i) the agent taking that action and (ii) the facts in  $w$ , are worlds where the agent completes a P-event.” The action,  $a$ , upon which the ability claim is dependent, I claim, can reasonably be thought of as one that culminates with the agent's attempt to complete the P-event. I suggest that the circumstances that we consider, when making an ability attribution, are the circumstances that hold throughout the runtime of this action. This follows from the intuition that the circumstances that arise throughout the progression of the action (including the attempt to P) could affect whether or not the agent in question is able to complete the event. This would result in the modal perspective time,  $t$ , which contains, as its final subpart, the agent's attempt to P. This is represented in the denotation and schema below.

- (13) a.  $[[ohkott-]]=$   
 $\lambda P.\lambda t.\lambda w.\exists a[\forall w'\in \text{MAX}_G(\cap(f(a,w,t))) [\exists t'[P(t')(w') \ \& \ t' \subseteq_{\text{final}} t]]]$

<sup>3</sup> Again, like *áak-*, with non-stative predicates.



The important observation is that the proposed temporal configuration is one that requires overlap between the modal evaluation time,  $t$ , and the runtime of the prejacent event. It is thus not compatible with the proposed causal requirement that the evaluation time,  $t$ , precede  $\tau(e)$ . Correspondingly, as we saw in the previous section, Blackfoot's ability modal fails to license causally-interpreted if-clauses.

### 3.3 The Imperfective's Temporal Configurations

I now move onto the Blackfoot imperfective,  $\acute{a}$ -, as a licensing context. Recall that the Blackfoot imperfective can be interpreted with either an in-progress/eventive reading, or with a habitual/generic reading. I assume a Deo 2009-inspired denotation for the Blackfoot imperfective, as represented below.<sup>4</sup>

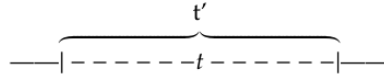
$$(14) \quad [[\acute{a}\text{-}]] = \lambda P.\lambda t.\lambda w. \\ \exists t' [t \subset t' \ \& \ \forall k \in \mathcal{R}_t^c, \forall w' \in \text{MAX}_G(f(a_\emptyset, w, t))] [\exists t'' [P(t'')(w') \ \& \ t'' \circ k]]$$

For our purposes, it is sufficient to only pay attention to the temporal orientation encoded in the denotation. The temporal orientation can be broken down as follows: First you take a superinterval,  $t'$ , of the evaluation time,  $t$ . Then you regularly partition  $t'$  into equal intervals of length  $k$ . The imperfective then asserts that each of these  $k$ -intervals overlaps with a  $P$ -eventuality. This is represented with the schematic diagram below:

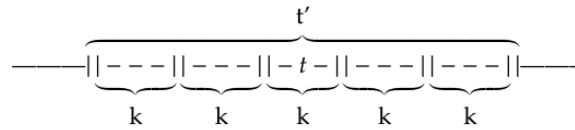
4 I make several adaptations to Deo's account: One, I assume that the imperfective is similarly action-dependent, but that the imperfective modal claim relies on the agent taking the null action  $a_\emptyset$ . Two, I change the relative scope of the modal and temporal operators, to account for the fact that the if-clause is interpreted within the scope of the quantifier over partitions.



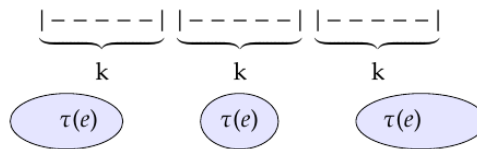
1. Take a superinterval,  $t'$ , of the evaluation time,  $t$



2. Regularly partition  $t'$  into equal intervals,  $k$ .



3. Each of these  $k$ -intervals overlaps with a P-eventuality



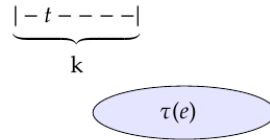
**Figure i:** *The Imperfective's Temporal Orientation*

An important thing to be aware of is the fact that the the overlap relation is not very strict. Each  $k$ -interval can overlap with the beginning of a P-eventuality, the end of a P-eventuality, or an entire P-eventuality, and the overlap relation  $\circ$  will still be satisfied, as represented in the above diagram.

Deo 2009 derives the various readings of the imperfective by allowing the size of the  $k$ -intervals to be contextually specified. If the size of the  $k$ -intervals are infinitesimal, then each  $k$ -interval is shorter than a P-eventuality. They can thus all overlap with a single P-eventuality in order to satisfy the truth-conditions. This yields an in-progress reading, where the (superinterval of the) evaluation time is contained within the run-time of the single P-eventuality (cf. Klein 1994). If, on the other hand, the size of the  $k$ -intervals are contextually specified so that they are not infinitesimal, but rather long compared to a normal P-eventuality, then in order for every  $k$ -interval of  $t$  to overlap with a P-eventuality, many P-eventualities are required. This derives a reading where we have a regular occurrence of P-eventualities (to overlap with each  $k$ -interval of the superinterval  $t'$ ). In other words, a habitual/generic reading.

If we take these temporal configurations in hand with the proposed causal requirement that  $t$  precede  $\tau(e)$ , what do we predict about whether the imperfective licenses conditional antecedents? If we have a progressive reading,

where the  $k$ -intervals are infinitesimally small, then the evaluation time is either (i) itself a  $k$ -interval, or (ii) contains many  $k$ -intervals. In the first case, this means that  $t$  itself must overlap with a  $P$ -eventuality; in the second case,  $t$  itself must overlap with many  $P$ -eventualities. In either case, the temporal configuration is incompatible with the causal requirement that  $t$  precede  $\tau(e)$ . We thus expect, as we saw in the previous section, that the in-progress reading of the imperfective is incompatible with causally-interpreted if-clauses. If, on the other hand, we have a generic reading, then the  $k$ -intervals are not infinitesimally small. This means that the evaluation time,  $t$ , can be contained within a  $k$ -partition, and yet not be within the part of the  $k$ -interval that overlaps with a  $P$ -eventuality. This is represented by figure ii.



**Figure ii:** Habitual/Generic Configuration where  $t < \tau(e)$ .

Crucially, this sort of temporal configuration is compatible with the causal requirement whereby  $t$  must precede  $\tau(e)$ . This corresponds with the data that we saw in section 2, whereby the habitual/generic reading of the imperfective is compatible with causally-interpreted conditional antecedents.

#### 4 Independent Evidence from Temporal Perspective

In this section I argue that the temporal orientations proposed in section 3 are reflected by restrictions on the temporal perspective of the different kinds of modal claims. The basic observation is that whereas the temporal orientations proposed for the future modal *áak-*, the 'might' modal *aahkama'p* and the imperfective *á-* are all compatible with an instantaneous modal evaluation time, the temporal orientation proposed for the ability modal *ohkott-* is not. Rather, the temporal orientation proposed for *ohkott-* requires that the modal evaluation time be a non-trivial interval. This makes certain predictions with respect to a previously observed correlation between temporal interpretation and the stative/eventive distinction in Blackfoot. As the argumentation in this section relies on the correlation observed by Reis Silva & Matthewson 2008 (henceforth RS&M 2008), I first discuss this work, and then discuss my implementation of their proposal.

#### 4.1 Tense Interpretations in Blackfoot for Non-Modal Claims

Ritter & Wiltschko 2005 observed that (certain) Blackfoot utterances are ambiguous between past and present readings, and suggested the temporal interpretation encoded in English by obligatory tense morphology in T, is rather left unspecified and determined by context in Blackfoot. RS&M 2008 observed, however, that temporal ambiguity is a property only of a specific subset of predicates: imperfective-marked eventives and statives. Unmarked eventive predicates can only be interpreted as past. Following Dunham 2008, RS&M 2008 assume that grammatical aspect is obligatory, and that the absence of the imperfective morpheme *á-* indicates a null perfective. Given this assumption, they propose that the restrictions on temporal interpretation can be accounted for if Blackfoot is indeed a tensed language, with a (morphologically unexpressed) distinction between past and present, and a formal characterization of Blackfoot's present tense as instantaneous. Given these assumptions, RS&M reason that a present tense interpretation for a bare (perfective) eventive would require a non-instantaneous event to be contained within an instantaneous present time. Because a non-instantaneous event cannot fit inside an instant (cf. Bennet & Partee 1978), such a temporal configuration is blocked; bare eventives in Blackfoot must therefore be interpreted as past. Blackfoot statives, on the other hand, can satisfy the sub-interval property, and so can be interpreted as true when evaluated with respect to either an instantaneous present time, or to a non-instantaneous past time.

#### 4.2 What about Modal Claims?

RS&M 2008 make their observed correlation between tense interpretations and the stative/eventive distinction for non-modal claims. If we assume that the temporal perspective of an unembedded modal claim is given by tense, however (as per Condoravdi 2002), then we would expect that temporal perspective of modal claims in Blackfoot should likewise show sensitivity to the stative/eventive distinction. Recall now that the proposed temporal orientation for the ability modal *ohkott-* is a stricter version of the perfective aspect discussed in the previous section. The modal time (like the reference time in the previous section) needs to contain, as a (final) subinterval, the run-time of the modal's prejacent event. As per the argumentation in the previous section, the modal time associated with an ability claim must then be interpreted as an interval, since an instant is too small to contain a dynamic event. We thus

predict that the temporal perspective of ability attributions should behave like the temporal interpretation of non-modal eventive predicates. I.e., ability attributions should be unambiguously interpreted as past (unless they are first stativized by means of an imperfective). This prediction is supported by the data in (15), where we can observe that an unmarked ability attribution as in (15a) can only be interpreted with a past temporal perspective. In order to get a present temporal perspective, the ability attribution must first be stativized by means of the imperfective, as shown in (15b).

- (15) a. *ohkott-ihpiyi-wa*                      b. *á-ohkott-ihpiyi-wa*  
 able-dance.vai-3                              impf-dance.vai-3  
 'He was able to dance.'  
 ≠ 'He is able to dance.'                      **OR** 'He was able to dance.'

The precedence requirement ( $t < \tau(e)$ ) associated with *áak-* and *aahkama'p-*, however, doesn't place any restrictions on the temporal argument that the modal claim takes. We thus predict that future *áak-* and *aahkama'p-* claims should behave like statives, and be systematically ambiguous between a past and present reading. This prediction is supported by the data in (16)-(19) where we see that *áak-* and *aahkama'p-* claims require no additional morphology in order to be interpreted with either a past, or present temporal perspective.

- (16) **Context:** We're planning to take the train to Whistler, and I'm checking train schedules because it doesn't leave everyday. I see it leaves tomorrow, and tell you:
- áak-omatap-oo*                      *apinákosi*  
 fut-begin.to-go.vai                      tomorrow  
 'It will leave tomorrow.'                      **PRESENT TP**
- (17) **Context:** My dad surprised my mom with a getaway weekend at a cottage. We're impressed because my mom is incurably nosey, and there are so many ways she could have found out.
- saami-ohtopi*    *omi iihotápyoo'p*    *áak-oohkoiskssini-m-wa*  
 look-unr                      dem    phone    fut-find.out.vti-loc:3-3  
 'If she had looked at the phone, she would have found out.'    **PAST TP**
- (18) **Context:** My neighbour was born with heart problems, and her mother worries about her over-exerting herself. Tomorrow is her prom, and her

mom is really worried.

*aahkama'p-iik-sska-ihpiyi*

might-ints-ints-dance.vai

'She might dance a lot.'

**PRESENT TP**

- (19) **Context:** Martina's hockey team was down a player, and they tried to get Heather as a ringer, but Heather couldn't play, and they lost.

*anna H waawahkaa-ohtopi*

dem H play.vai-unr

*aahkama'p-omo'tsaaki-yaawa*

might-win.via-3pl

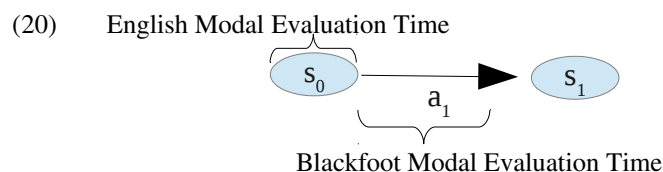
'If Heather had played, they might have won.'

**PAST TP**

## 5 Conclusion

In this paper, I have shown that causal conditionals in Blackfoot require a specific type of modal in order to be licensed. I proposed that these modals can be semantically characterized in terms of the temporal orientation they encode. More specifically, I proposed that the licensing modals are all modals that are compatible with a prospective temporal configuration, where the modal time, *t*, precedes the run-time of the modal's prejacent event. I further suggested that this characterization of the licensing contexts is conceptually motivated given (i) the framework for conditionals and temporal interactions presented here and (ii) the non-controversial assumption that only forward causation is possible. The proposed generalization required a non-standard proposal for the ability modal *ohkott*'s temporal orientation. I argued, however, that the non-standard temporal orientation I proposed is reflected in how ability attributions in Blackfoot are interpreted with respect to their temporal perspective.

An obvious question remains unasked at this point: if the causal requirement is conceptually motivated, why can the English progressive, and the English ability modal *can/could* license causal conditionals? I tentatively suggest that this may reflect a parametric difference in terms of how Blackfoot and English encode their modal evaluation times for action-dependent modal claims. More specifically, I propose that while Blackfoot's modal evaluation times correlate with the runtime of the action,  $a_1$ , upon which the modal claims are dependent, English' modal evaluation times correlate with the holding time of the initial state preceding the action,  $s_0$ , as schematized in (20).



As this means that the modal evaluation time associated with a modal claim in English temporally precedes the approximate modal evaluation time in Blackfoot, this parametric difference allows for temporal schematics whereby the temporal configurations that overlap in Blackfoot do not overlap in English. This would allow the English modals to satisfy the causal requirement, and thereby license causal-if clauses, where their Blackfoot equivalents do not. It would also account for the observation English modal claims, unlike their Blackfoot equivalents, are always stative-like with respect to their temporal perspective.

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