Factivity alternation due to semantic composition: *think* and *remember* in Barguzin Buryat*

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1 Introduction

Factivity alternation (Moulton 2009, Abrusán 2011, Özyıldız 2017) is the phenomenon of the same verb displaying both factive and non-factive uses depending on the type of the complement it combines with. This paper discusses a case of such alternation in the Barguzin dialect of Buryat (Mongolic): when the verb *hanaxa* combines with indicative CPs, (1), it is naturally translated as 'think'; when it combines with nominalized clauses (NMNs) or nouns, (2), it is naturally translated as 'remember, think of'.[1]

(1) dugar [$_{CP}$ mi:sgəi zagaha ədj-ə: gəžə] han-a:
Dugar.NOM cat.NOM fish eat-PST COMP think-PST
'Dugar **thought** /*remembered ("thought of") that a cat ate fish.'

(2) a. dugar [$_{NMN}$ mi:sgəi-n zagaha ədj-ə:ʃ-i:jə-n'] han-a:
Dugar.NOM cat-GEN fish eat-PART-ACC-3SG think-PST
'Dugar *thought **/remembered ("thought of")** a cat's eating fish.'

b. dugar mi:sgəi-jə han-a:
Dugar.NOM cat-ACC think-PST
'Dugar *thought **/remembered ("thought of")** a cat.'

In (2a), unlike in (1), there is an inference that at some time prior to the time of Dugar's attitude, a cat ate fish. This inference makes it infelicitous to follow up (2a) by saying "but the cat didn't eat the fish". The sentences in (3)-(4) show that such contradiction arises only with nominalizations, but not with CPs.

(3) #dugar mi:sgəi-n zagaha ədj-ə:ʃ-i:jə-n' han-a: xarin mi:sgəi zagaha ədj-ə:-güj
Dugar cat-GEN fish eat-PART-ACC-3SG think-PST but cat fish eat-PST-NEG
#'Dugar *thought **/remembered** a cat's eating fish, but a cat didn't eat fish.'

(4) dugar mi:sgəi zagaha əd-jə: gəžə han-a: xarin mi:sgəi zagaha ədj-ə:-güj
Dugar cat.NOM fish eat-PST COMP think-PST but cat fish eat-PST-NEG
'Dugar **thought** /*remembered that a cat ate fish, but a cat didn't eat fish.'

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[1]This verb can also describe other mental attitudes, for example, 'doubt' and 'want'. These meanings require special verbal forms of embedded verbs and / or particles. I will not discuss those uses of *hanaxa* here, see Bogal-Allbritten 2016, 2017 for discussion of a similiar verb in Navajo and the *think / want* ambiguity.

This inference is present with nominal complements and absent with CP complements independent of the tense and aspect on the matrix verb. In (1)-(2) the matrix verb is in the past tense; it can be interpreted perfectively. I show that the same contrast holds when the matrix verb is in an imperfective past form, (5)-(6), or in the present tense, (7)-(8). Thus, the inference is not dependent on a particular tense / aspect configuration.

(5) ***think* in imperfect past + CP**
mini: oro-xodo-mni dugar [$_{CP}$ mi:sgəi zagaha ədj-ə: gəžə]
1SG.GEN come-TEMP.ADJ-1SG Dugar.NOM cat.NOM fish eat-PST COMP
hana-ža bai-ga:
think-CONV be-PST
'When I came in, Dugar **was thinking** /*was remembering that a cat ate fish.'

(6) ***think* in imperfect past + NMN**
mini: oro-xodo-mni dugar [$_{NMN}$ mi:sgəi-n zagaha
1SG.GEN come-TEMP.ADJ-1SG Dugar.NOM cat-GEN fish
ədj-ə:ʃ-i:jə-n'] **hana-ža bai-ga:**
eat-PART-ACC-3SG **think-CONV be-PST**
'When I came in, Dugar *was thinking **/was remembering** a cat's eating fish.'

(7) ***think* in present tense + CP**
dugar [$_{CP}$ mi:sgəi zagaha ədj-ə: gəžə] **hana-na**
Dugar.NOM cat.NOM fish eat-PST COMP **think-PRS**
'Dugar **is thinking** /*is remembering ("is thinking of") that a cat ate fish.'

(8) ***think* in present tense + NMN**
dugar [$_{NMN}$ mi:sgəi-n zagaha ədj-ə:ʃ-i:jə-n'] **hana-na**
Dugar.NOM cat-GEN fish eat-PART-ACC-3SG **think-PRS**
'Dugar *is thinking **/is remembering ("is thinking of")** a cat's eating fish.'

The goal of this paper is to provide an account of the difference between (1) and (2) and how it comes about. **The hypothesis** that I will pursue is that the meaning of *hanaxa* is uniform across its uses, and that the difference in meaning, (1)-(2), arises due to the combination of two things: argument structure of the attitude verb and the two distinct ways in which NPs and CPs combine with attitude predicates.

I follow the decompositional approach to semantics of attitude verbs (Kratzer 2006, 2013, Moulton 2009, 2015, Bogal-Allbritten 2016, 2017) according to which the quantification over possible worlds comes from the embedded clause, and not from the matrix verb (Hintikka 1962, Percus 2006). More specifically, I will follow the implementation found in (Kratzer 2013) and (Bogal-Allbritten 2017), according to which CPs denote properties of events such that they have propositional content associated with them.

I argue that attitude verbs like Buryat's *hanaxa* take two arguments: the event argument e (the state or action of thinking) and the internal argument x (the object of thought = what is being thought about). There is a presupposition associated with the individual argument x that states that x has to start existing before the eventuality described by the matrix verb (things that are thought

about exist prior to thinking[2]). This presupposition is always a part of the verb's meaning: both when it combines with NPs and when it combines with CPs. I argue that the way the attitude verb combines with CPs is different from the way it combines with nominals: CPs modify the eventuality argument e (and later the existential closure "closes off" both arguments of the verb), while NPs saturate the internal argument x (and later the existential closure "closes off" the event argument). This difference, together with the presupposition about the time interval corresponding to x, gives the difference in meaning observed in (1)-(2).

The proposal presented in this paper is different from both proposals that build the inference into the denotation of the verb (Hintikka 1962; Percus 2006) and proposals that build the inference into the complement clause (Kiparsky & Kiparsky 1970; Kratzer 2006). While I propose that the attitude verb comes with a presupposition, it is not a presupposition that some proposition p is true. The presupposition only states that the object of thinking started existing before thinking. In other words, the attitude verb is very similiar to a simple transitive verb of use (Diesing 1992) like *read* whose object has to exist prior to the event denoted by the verb. Crucially, I also do not assume that the inference comes from the complement clause. Nothing in the denotations of NPs and CPs is responsible for the factive inference. I show that reducing the inference to an effect of definiteness of the complement (Kastner 2015, Hanink & Bochnak 2017) cannot be done for Buryat: even sentences with indefinite nominalizations display the inference shown in (2). I also show that CPs and nominalizations under consideration do not have the same denotations: while CPs have propositional meaning, nominalizations like the one in (2a) do not. This makes it impossible to adopt for the Buryat alternation an analysis along the lines of (Özyıldız 2017), which derives the factive inference in Turkish in composition through movement of the proposition denoted by the nominalization (see section 6 for some further discussion). I argue that the factivity alternation arises as an interaction of the argument structure of the attitude verb with different ways of combining CPs and NPs: NPs combine by saturating an individual argument of the verb that has a presupposition associated with it; CPs combine by restricting the eventuality argument. This provides a new view of the factive inference as a restriction on the individual argument of the attitude verb.

This paper is structured as follows. Section 2 argues that the observed inference, (3)-(4), is a presupposition. Section 3 explores the logical possibilities of where this presupposition could be coming from, and concludes that the most plausible source is the semantic composition. In section 4 I make the proposal that accounts for the different meanings of *hanaxa* with CPs and with NPs in Buryat. I provide some morphosyntactic evidence that supports my proposal. Section 5 examines some of the predictions that my proposal makes, and shows that they are born out. Specifically, I look at cases where both CP modifies the event argument and an NP saturates the object argument of the attitude verb. I also show how my proposal deals with nominalized CPs as arguments of *hanaxa*. Section 6 discusses some alternatives and open questions, including potential implications of the current proposal for the typology of attitude verbs. Section 7 concludes the paper.

[2]Note that I do not claim that the use of *hanaxa* precludes expression of new thoughts: I only argue that when it is used, there pre-exists some (explicit or implicit) topic that the thoughts are about. I also do not claim that all verbs that can be naturally translated as 'think' have an internal argument that corresponds to the topic of thoughts and this pre-existence presupposition associated with it. For example, Buryat has another verb meaning 'think' — *ʃəbʃəxɔ*— that lacks such an internal argument and thus cannot take any NPs as its arguments.

2 The observed inference is a presupposition

In this section I discuss the inference that arises in sentences with nominalizations in more detail. In (3)-(4), repeated below as (9)-(10), I have shown that while it's not contradictory to say *Dugar thinks p-CP, but it's not the case that p*, (10), it is contradictory to say *Dugar thinks p-NMN, but it's not the case that p*, (9).

(9) #dugar mi:sgəi-n zagaha ədj-ə:ʃ-i:jə-n' han-a: xarin mi:sgəi zagaha ədj-ə:-güj
Dugar cat-GEN fish eat-PART-ACC-3SG think-PST but cat fish eat-PST-NEG
#'Dugar *thought **/remembered** a cat's eating fish, but a cat didn't eat fish.'

(10) dugar mi:sgəi zagaha əd-jə: gəžə han-a: xarin mi:sgəi zagaha ədj-ə:-güj
Dugar cat.NOM fish eat-PST COMP think-PST but cat fish eat-PST-NEG
'Dugar **thought** /*remembered that a cat ate fish, but a cat didn't eat fish.'

This looks like a factive inference. I show that two other diagnostics for a factive inference also give positive results. First, if the speaker doesn't know whether p is true or not, it is infelicitous to use the sentence where the attitude verb takes a nominalization, (11) (cf. a felicitous sentence with a CP in (12)).

(11) #bi badma tərgə əmdəl-ə: gü gəžə mədə-nə-güj-b, (xarin)
1SG.NOM Badma.NOM cart break-PST Q COMP know-PRS-NEG-1SG (but)
sajana badm-i:n tərgə əmdl-ə:ʃ-i:jə han-a:
Sajana.NOM Badma-GEN cart break-PART-ACC think-PST
'I don't know whether Badma broke the cart, (but) Sajana **remembered** that Badma broke the cart.'

(12) bi badma tərgə əmdəl-ə: gü gəžə mədə-nə-güj-b, (xarin)
1SG.NOM Badma.NOM cart break-PST Q COMP know-PRS-NEG-1SG (but)
sajana badma tərgə əmdl-ə: gəžə han-a:
Sajana.NOM Badma.NOM cart break-PST COMP think-PST
'I don't know whether Badma broke the cart, Sajana **thought** that Badma broke the cart.'

Second, sentences with nominalization pattern together with sentences with factive verbs, and sentences with CPs pattern together with sentences with non-factive verbs with respect to the following dialogue (see (Percus 2006)):[3]

(13) A: Darima went to Moscow last year.
B: I know/remember (that Darima went to Moscow last year).
B': # I think that Darima went to Moscow last year.

As we see from (13), in this English dialogue factive verbs like *know* and *remember* are felicitous as a reply of B to A, while a non-factive verb like *think* is infelicitous. A possible reason for this contrast is that if B accepted the update of the common ground initiated by A's utterance, then the

[3]Thanks to Deniz Özyıldız for telling me about this observation in English.

proposition p = *Darima went to Moscow last year* is already shared, and the response of B' has no contribution: they speak as if they do not acknowledge what A said. This is not so for the response B, which adds the information that p was in the addressee's belief worlds even before the utterance of A.[4] In Buryat, a dialogue parallel to (13) is felicitous with *hanaxa* if it takes a nominalization as its complement, (14) and infelicitous if it takes a CP as its complement, (15).

(14) a. A: darima türü:n ʒəl-də moskva gar-a:
Darima.NOM previous year-DAT Moscow go-PST
'A: Last year Darima went to Moscow.'

b. B: bi darim-i:n türü:n ʒəl-də moskva gar-a:ʃ-i:jə
1SG.NOM Darima-GEN previous year-DAT Moscow go-PART-ACC
hana-na-b
think-PRS-1SG
'B: I remember that Darima went to Moscow.'

(15) a. A: darima türü:n ʒəl-də moskva gar-a:
Darima.NOM previous year-DAT Moscow go-PST
'A: Last year Darima went to Moscow.'

b. B: #bi darima türü:n ʒəl-də moskva gar-a: gəžə
1SG.NOM Darima.NOM previous year-DAT Moscow go-PST COMP
hana-na-b
think-PRS-1SG
'B: #I think that Darima went to Moscow.'
Informant's comment: 'it's like if B didn't hear what A said, sounds like a strange reply'.

So far I have shown that when the attitude verb *hanaxa* takes a nominalization as its complement, the sentence displays behavior that is similiar to sentences with factive presuppositions. The contradiction test, (9)-(10), the speaker's ignorance test, (11)-(12), and the vacuous-dialogue test, (14)-(15), all show that sentences with nominalizations behave as if they have a factive inference.

This factive inference behaves like a presupposition. As examples in (16) and (17) show, it projects over negation and question. The sentence in (16) is infelicitous due to incompatibility of the factive inference with the speaker's ignorance about p. The sentence in (17) is odd because of the follow up that negates what the factive inference presupposes to be true.

(16) #bi badma tərgə əmdəl-ə: gü gəžə mədə-nə-güj-b, sajana
1SG.NOM Badma.NOM cart break-PST Q COMP know-PRS-NEG-1SG Sajana.NOM
badm-i:n tərgə əmdəl-ə:ʃ-i:jə hana-na gü?
Badma-GEN cart break-PART-ACC think-PRS Q
Intended: 'I don't know whether Badma broke the cart or not. Does Sajana think that Badma broke the cart?'

[4]Note that the utterance of A can be easily accomodated as 'A thinks that p' (thanks to Kai von Fintel for pointing this out to me). Then one could felicitously respond to that using a non-factive verb: 'I think so too', 'I thought so' (I already had this thought), 'I also think that Darima went to Moscow', 'I think you're mistaken'. The use of a factive verb in the response requires no such accomodation.

Actual: #‘I don’t know whether Badma broke the cart or not. Does Sajana remember Badma’s breaking the cart?’

(17) #badm-i:n tərgə əmdəl-ə:ʃ-i:jə sajana han-a:-güj, badma tərgə
Badma-GEN cart break-PART-ACC Sajana.NOM think-PST-NEG Badma.NOM cart
əmdəl-ə:-güj
break-PST-NEG
Intended: ‘Sajana didn’t think that Badma broke the cart, (and) B. didn’t break the cart’
Actual: #‘Sajana didn’t remember B.’s breaking the cart, (and) B. didn’t break the cart.’

To sum up, this section has established that the inference that we observe with the attitude verb *hanaxa* taking nominalizations behaves like a factive presupposition.

3 The source of the presupposition

There could be several hypotheses about the origin of the factive presupposition (see discussion in (Özyıldız 2016)). In this section, I will discuss three of them: the hypothesis that there are two distinct homophonous attitude verbs, a factive and a non-factive one, the hypothesis that the presupposition is due to the lexical meaning of the attitude verb, and the hypothesis that the presupposition is due to the meaning of the complement clause. In the end, I will briefly describe the hypothesis that I will argue for: that the presupposition is a result of the combination of the lexical meaning of the verb and the semantic composition.

3.1 The ambiguity hypothesis

According to the ambiguity hypothesis, a factivity alternation can arise because a language can have two disctinct but homophonous lexical entries for an attitude verb, one factive and one non-factive. The factive *hanaxa* would always select for a nominalized complement, while the non-factive *hanaxa* would always select for a CP.There is at least one reason that makes this hypothesis unappealing: the verb *hanaxa* is not the only non-factive verb that displays a factive presupposition with a nominalized complement. There is at least one more verb that has the same behavior: *xələxə* ‘say’.[56] The sentence in (18) shows that when this verb combines with a CP, it is non-factive: it

[5]Not all of the informants I worked with liked the combination of this verb with a nominalization. But if a person allowed for *xələxə* to take nominal complements, it had the factive inference in sentences with them.

[6]Another non-factive verb that might be said to have the same behavior is *ajxa* ‘be afraid of’: in (i), when this verb combines with a CP, and there is no inference that Seseg went up the mountain, hence no contradiction arises; in (ii), when this verb combines with a nominalization, there is an inference that Seseg went up the mountain (it is the cause of Sajana’s being afraid), so the follow-up results in the contradiction.

(i) sajana səsəg xada dəːrə gar-a: gəžə aj-na xarin səsəg xada dəːrə gar-a:-güj
Sajana Seseg mountain up go.to-PST COMP be.afraid-PRS but Seseg mountain up go.to-PST-NEG
‘Sajana is afraid that Seseg went up the mountain, but Seseg didn’t go up the mountain.’

(ii) #sajana səsəg-əj xada dəːrə gar-a:ʃa-ha: aj-na xarin səsəg xada dəːrə
Sajana Seseg-GEN mountain up go.to-PART-ABL be.afraid-PRS but Seseg mountain up
gar-a:-güj
go.to-PST-NEG

does not presuppose that Seseg went up the mountain. In (19) the same verb combines with a nominalized clause and displays a factive presupposition: the speaker has to believe that Seseg went up the mountain in order to make the first conjunct of (19) felicitious.

(18) sajana səsəg xada dəːrə gar-a: gəžə xəl-əː xarin səsəg
Sajana.NOM Seseg.NOM mountain up go.to-PST COMP say-PST but Seseg.NOM
xada dəːrə gar-aː-güj
mountain up go.to-PST-NEG
'Sajana said that Seseg went up the mountain, but Seseg didn't go up the mountain.'

(19) #sajana səsəg-əj xada dəːrə gar-aːʃ-iːjə xəl-əː xarin səsəg
Sajana.NOM Seseg-GEN mountain up go.to-PART-ACC say-PST but Seseg.NOM
xada dəːrə gar-aː-güj
mountain up go.to-PST-NEG
Intended: Sajana said that Seseg went up the mountain, but S. didn't go up the mountain.
Comment from informant: in the first sentence it seems like Sajana described the event that actually happened, that's why the continuation sounds weird.

In other words, the sentence with the nominalization, (19), means that Sajana said (about) something that the speaker considers to be true: (about) Seseg's going up the mountain. The fact that we see more than one non-factive verb participating in the factivity alternation in Buryat makes the homophony hypothesis implausible, since at least two pairs of verbs in the language would have to be accidentally homophonous in the same way. Later (sections 5.1., 6) we will see some other evidence that argues against the ambiguity hypothesis.

3.2 The presupposition comes from the attitude verb

Another hypothesis is that the factive presupposition is always part of the lexical meaning of the attitude verb. Under this hypothesis, the case when the verb combines with a nominalized clause and has the factive inference is the default case, and what has to be explained is how does this presupposition disappear in cases when the verb combines with finite CP clauses. One possibility is to employ the notion of 'plugs' (Kartunnen 1973) which can block presuppositions from projecting (Özyıldız 2016). If one follows Hintikkan semantics for attitude preducates, this would require writing into the meaning of the complement clause the requirement that the proposition that it denotes somehow cancels the presupposition introduced by the verb. I will not adapt 'plugs'

Intended: Sajana is afraid that Seseg went up the mountain, but Seseg didn't go up the mountain.
Comment from informant: the first part means something like 'Sajana got frightened because of Seseg's going up the mountain' (she found out that Seseg went there, and got frightened as a result), so the continutation makes no sense.

There is a reason to suspect that the phenomenon observed in (i)-(ii) might be not exactly the same as with verbs *hanaxa* 'think' and *xələxə* 'say': it is not clear that the nominalization in (ii) is an argument of the verb and not an adjunct. First, note that it occurs in ablative case, while nominalizations that occur with *hanaxa* 'think' and *xələxə* 'say' are marked with accusative. Second, it is generally true of *ajxa* 'be afraid of' that CPs and NPs with it can be omitted. This makes it unclear whether the inference in (ii) is the same factive inference as we see in examples like (3) or (19).

as a special tool for cancelling presuppositions. However, I will propose that the observed presupposition is partially due to the lexical meaning of the verb.

3.3 The presupposition comes from the complement

Another hypothesis is that the factive presupposition arises due to the complement of the verb (Kiparsky & Kiparsky 1970; Kratzer 2006). This hypothesis seems initially attractive due to the cross-linguistic data that suggests that there are correlations found between the syntactic category of the complement of attitude verbs and their factivity ((Moulton 2009, Abrusán 2011, Özyıldız 2017). Factive clauses with CPs could be factive due to the factive complementizer in the embedded clause (Kratzer 2006); factive clauses with nominalizations could be factive due to a definiteness effect (Kastner 2015, Hanink & Bochnak 2017, Özyıldız 2017).

While attractive, this approach cannot be adapted for the factivity alternation observed in Buryat. First, it cannot be the case that it is the nominal status that is responsible for the factive presupposition, because the factive presupposition is not observed in all cases when a non-factive verb takes a nominalized complement. For example, when verbs *ətigəxə* 'believe' and *najdaxa* 'hope' combine with nominalizations, no factive inference arises, hence the felicity of (20)-(21).[7][8]

(20) sajana badm-i:n tərgə əmdəl-ə:ʃ-tə-n' ətig-ə:, xarin badma tərgə
Sajana Badma-GEN cart break-PART-DAT-3 believe-PST but Badma cart
əmdəl-ə:-güj
break-PST-NEG
'Sajana believes that Badma broke the cart (lit. 'in Badma's breaking the cart'), but Badma didn't break the cart'.

(21) sajana səsəg-əj xada də:rə gar-a:ʃa-da najda-na, xarin səsəg xada
Sajana Seseg-GEN mountain up go.to-PART-DAT hope-PRS but Seseg mountain
də:rə gar-a:-güj
up go.to-PST-NEG
'Sajana hopes that Seseg went up the mountain (lit. 'in Seseg's going up the mountain'), but Seseg didn't go up the mountain'.

Second, it is simply not true of Buryat nominalizations that they have to be definite in order to trigger the factive inference. Buryat noun phrases that have attached accusative suffix but no other nominal morphology can be interpreted both definitely and indefinitely. This is shown by the examples (22)-(23), where (22) represents the indefinite interpretation, and (23) – the definite one. Note that if the noun phrase with accusative marking was obligatorily definite, then (22) should be infelicitous due to the violation of the uniqueness presupposition (cf. English *#I saw the cat, Narana saw the cat, Man'ka saw the cat. They were Vas'ka, Fed'ka, Man'ka*.)

[7]Buryat is not unique in allowing non-factive verbs take nominalized clauses without giving rise to the inference. For example, the same happens in Turkish (Özyıldız 2017). This suggests that treating nominalizations as factive across the board cannot be the correct solution to factivity alternations.

[8]Note that while in both (20) and (21), unlike with the verb *hanaxa* 'think', the nominalizations are marked with lexical (dative) case, they cannot be treated as adjuncts in these sentences, since they cannot be ommited. This makes (20) and (21) different from from the example (ii) of footnote (6) where the verb *ajxa* 'to be afraid of' was combining with a nominalization in ablative case.

(22) bi mi:sgəj-**ə** xara:b, səsəg mi:sgəj-**ə** xara:, narana mi:sgəj-**ə** xara:, tərə gurban
1SG cat-**ACC** saw.1SG Seseg cat-**ACC** saw Narana cat-**ACC** saw this three
vas'ka, fed'ka, man'ka bai-ga:
Vas'ka Fed'ka Man'ka be-PST
'I saw a cat, Seseg saw a cat, Narana saw a cat. They were Vas'ka, Fed'ka, Man'ka'.

(23) bi mi:sgəj-**ə** xara:b, səsəg mi:sgəj-**ə** xara:, narana mi:sgəj-**ə** xara:, tərə vas'ka
1SG cat-**ACC** saw.1SG Seseg cat-**ACC** saw Narana cat-**ACC** saw this Vas'ka
bai-ga:
be-PST
'I saw the cat, Seseg saw the cat, Narana saw the cat. This was Vas'ka.

Nominalizations with accusative marking are not different from regular nouns in their ability to be interpreted indefinitely.[9]

(24) bi sajani:n du: du:la-ʒa baj-ga:ʃ-**i:jə** xar-a:-b, səsəg sajani:n du:
1SG Sajana song sing-CONV be-PART-**ACC** see-PST-1SG Seseg Sajana song
du:la-ʒa baj-ga:ʃ-**i:jə** xar-a:, narana sajani:n du: du:la-ʒa baj-ga:ʃ-**i:jə**
sing-CONV be-PART-**ACC** see-PST Narana Sajana song sing-CONV be-PART-**ACC**

[9]There are however differences between simple noun phrases and clausal nominalizations when it comes to possessive marking. Noun phrases with the 3Sg possessive marker are obligatorily interpreted definitely, (i)-(ii), while nominalizations that attach the same marker can still receive an indefinite interpretation, (iii):

(i) *bi mi:sgəj-**ə-n'** xar-a:-b, səsəg mi:sgəj-**ə-n'** xar-a:, narana mi:sgəj-**ə-n'** xar-a:, tərə gurban
1SG cat-**ACC-3** see-PST-1SG Seseg cat-**ACC-3** see-PST Narana cat-**ACC-3** see-PST this three
vas'ka, fed'ka, man'ka bai-ga:
Vas'ka Fed'ka Man'ka be-PST
Intended: 'I saw a cat, Seseg saw a cat, Narana saw a cat. They were Vas'ka, Fed'ka, Man'ka'.

(ii) bi mi:sgəj-**ə-n'** xar-a:-b, səsəg mi:sgəj-**ə-n'** xar-a:, narana mi:sgəj-**ə-n'** xar-a:. tərə vas'ka
1SG cat-**ACC-3** see-PST-1SG Seseg cat-**ACC-3** see-PST Narana cat-**ACC-3** see-PST this Vas'ka
bai-ga:
be-PST
'I saw the cat, Seseg saw the cat, Narana saw the cat. This was Vas'ka.

(iii) bi sajan-i:n du: du:la-ʒa baj-ga:ʃ-**i:jə-n'** xar-a:-b, səsəg sajan-i:n du: du:la-ʒa
1SG Sajana-GEN song sing-CONV be-PART-**ACC-3** see-PST-1SG Seseg Sajana-GEN song sing-CONV
baj-ga:ʃ-**i:jə-n'** xar-a:, narana sajan-i:n du: du:la-ʒa baj-ga:ʃ-**i:jə-n'** xar-a:
be-PART-**ACC-3** see-PST Narana Sajana-GEN song sing-CONV be-PART-**ACC-3** see-PST
'I saw Sajana's singing a song, Seseg saw Sajana's singing a song, Narana saw Sajana's singing a song.
OK: The three girls saw each a different singing by Sajana.
OK: The three girls all saw the same singing by Sajana.

A potential reason for this difference could be that the possessive marker on the nominalization has to be agreement of the nominalization with its subject, while on simple noun phrases the same suffix is not just agreement, but also contributes to the definiteness of the nominal. Further research is needed to understand the differences between nouns and nominalizations in this domain. As shown in (24), such nominalizations can be interpreted both definitely and indefinitely. The nominalizations in (24) are exactly the same with respect to their morphosyntax as the ones in (2) and (19) in examples with the factive inference (the same participle, accusative marking, genitive subjects). This suggests that definiteness cannot be responsible for the emergence of the factive inference.

xar-a:
see-PST

'I saw Sajana singing a song, Seseg saw S. singing a song, Narana saw S. singing a song.'
OK: The three girls saw each a different singing by Sajana.
OK: The three girls all saw the same singing by Sajana.

If it is not the nominal status itself, and not definiteness, then it is not obvious how the nominalized clause could introduce the factive inference into the sentence. I therefore reject the hypothesis that the factive inference with verbs like *hanaxa* 'think' taking nominal complements in Buryat emerges due to the nominalized complement. In other words, while data like (1)-(2) does suggest that the type of the complement (CP -vs- NP) correlates with the existence of a factive presupposition, I take this correlation to be an epiphenomenon of the fact that CPs and NPs combine with attitude verbs by different semantic principles, and not as a fact suggesting that the meaning of the nominalization contains a factive presupposition.

3.4 The presupposition is due to the meaning of the verb + the composition

In this paper I explore a hypothesis that is different from the ones outlined above. My proposal is similiar to the one argued for in (Özyıldız 2017) for a Turkish factivity alternation in that the semantic composition plays an important role in generating the factive inference: NPs and CPs combine with the verb differently. However, for me it is not purely the semantic derivation, but it is its interaction with the argument structure of the attitude verb that results in the factive inference in sentences with nominalizations. As will become obvious in the upcoming sections, Özyıldız's proposal for Turkish cannot be extended as it is to the Buryat data due to the different nature of the factive alternation in the two languages.[10]

My hypothesis about the source of the factive inference in Buryat can be summarized as follows: nominalizations and other NPs saturate the object argument of the attitude verb that has a presupposition associated with it (it's part of the verb's denotation); CPs restrict the eventuality argument of the verb. The presupposition is always active in the meaning of the verb, but it can be "seen" only when there is some overt material that corresponds to the object argument (the case with the nominalization). When there is no such material (the case with the CP), then the presupposition, while still active, cannot be detected. In the next section I propose a formal implementation of this hypothesis.

4 The proposal

My account of the factivity alternation in Buryat includes the following three crucial pieces:

(25) **Three crucial pieces of the proposal**
1. Verbs like *hanaxa* 'think' take an individual argument (x);
2. They have a presupposition associated with this individual argument (x);
3. While NPs combine by saturating the individual argument (x), CPs do not.

[10]For example, the Turkish nominalization is a CP-level nominalization and has a propositional meaning, while, as I will argue in section 4.2., the Buryat nominalization is an AspP-level nominalization that denotes a property of events. In section 5.3. I will return to nominalized CPs and discuss how they can be captured under my proposal.

The implementation of my proposal is done in the decompositional approach to the semantics of attitude predicates (Kratzer 2006, 2013, Moulton 2009, 2015, Bogal-Allbritten 2016, 2017), but I will also discuss how the Hintikkan semantics for attitudes needs to be modified in order to be able to implement this proposal, and what kind of data could be crucial for evaluating the two implementations (section 6).

According to the decompositional approach to the semantics of attitude verbs, the source of the quantification over possible worlds is not in the denotation of the attitude verb itself, but inside the embedded clause. I will assume that the quantification comes from the complementizer (Kratzer 2006), although nothing hinges on this choice, as far as I can see: for the questions I am concerned with in this paper, any projection in the left periphery of the embedded clause could be taken as the source of the quantification. In this framework CPs denote not propositions, but properties, and combine with the matrix verb by restricting one of its arguments. I will follow the implementation of the decompositional approach found in Kratzer(2013) and Bogal-Allbritten(2017), according to which CPs are properties of events and combine by restricting the eventuality argument of the attitude verb.[11]

Finally, I would like to comment on my ontological assumptions. I assume that the domain of events, D_v, is a subdomain of the domain of individuals D_e. I also assume that there is a Content function that takes an event and returns a proposition associated with this event (Kratzer 2013). This function is defined only for some events (for example, for events of *thinking, believing* etc., but not for events of *running, climbing* etc.). I assume that the events for which the Content function is defined are in the domain D_{cv}, which is a subdomain of the domain of events D_v.

4.1 The Ingredients: denotations of the verb, the CP, and the NMN

I propose for the Buryat's verb *hanaxa* 'think' the semantics in (26):

(26) $[\![\textit{hanaxa}]\!]^{w,g}$ = $\lambda x \lambda e$: LB(τ(x)) <LB(τ(e)). think(x)(e) & e is in w.
(LB — Left Boundary (of a time interval),
τ — a function that takes an individual and returns the time interval corresponding to the existence of that individual)

The verb in (26) takes two arguments: an individual argument x and an event argument e, and returns 1 iff e is an event of thinking about x and e is in w. Put differently, e is the eventuality argument (the thinking event), while x denotes the object of thought (= *res* argument, = what is being thought about). This verb has a presupposition that concerns its object argument (x): it says that the left boundary of the time interval corresponding object of thinking (x) is before the left boundary of the time interval corresponding to the thinking event (e). I take this presupposition to be similiar to the presupposition we observe with verbs of use (Diesing 1990) that require their object to exist before the event described by the verb: in order to *read a book* there has to exist a book prior to the reading.[12] Note that this is not a factive presupposition in the sense that some

[11] At least for languages like English, Kratzer(2013) seems to assume that CPs denote properties of events only when they are not subcategorized for, as in *Ralph sighed that Ortcutt was a traitor*. When CPs occur in attitude ascriptions, as in *Ralph believes that Ortcutt is a traitor*, they modify a content argument of the attitude verb. I will discuss a little bit in section 4.3 why I think viewing CPs as properties of individuals is unappealing for Buryat.

[12] Thanks to Sabine Iatridou for pointing out this analogy to me.

proposition is presupposed to be true. This presupposition is merely a restriction on the type of the individual that the object of the verb denotes.

I assume that the experiencer of thinknig is added in the course of the derivation: syntactically, by a Voice projection, and semantically, through the process of Event Identification (Kratzer 1996) with the contentful event argument e of *hanaxa* 'think' (an event that has propositional content associated with it). Within this framework, the following question arises: what does it mean to be the experiencer of a contentful event, and how do we guaruantee the entailment patterns of attitude verbs (if B $\subseteq$ DOX(x,w) and A $\subseteq$ B $\Rightarrow$ A $\subseteq$ DOX(x,w), where DOX(x,w) is the set of worlds compatible with beliefs of the individual x in world w)? I suggest the following definition of the experiencer of a contentful event:

(27) **Definition:** x is the experiencer of a contentful event e in w,
x = Exp(e_{cv})$_w$ iff $\forall$ w' $\in$ DOX$_{x,w}$ $\rightarrow$ w' $\in$ Content(e_{cv}).

The individual x is the experiencer of a contentful event e in w iff all the worlds comptaible with x's beliefs in w are such that they are in the set of worlds that one gets buy applying the Content function to the contentful event e. It is possible to incorporate the definition in (27) into the meaning of *hanaxa* 'think' directly:

(28) $[\![\textit{hanaxa}]\!]^{w,g}$ = λxλe: LB(τ(x)) <LB(τ(e)). think(x)(e) & e is in w & $\forall$ w' $\in$ DOX$_{Exp(e),w}$ $\rightarrow$ w' $\in$ Content(e_{cv}).
(LB — Left Boundary (of a time interval),
τ — a function that takes an individual and returns the time interval corresponding to the existence of that individual)

For the purpose of simplification, I will omit the information about what it means to be an experiencer of a contenful event ($\forall$ w' $\in$ DOX$_{Exp(e),w}$ $\rightarrow$ w' $\in$ Content(e_{cv})) from the denotation of *hanaxa* in further discussion of the factivity alternation in Buryat. Nothing in my proposal, as far as I can see, hinges on the exact way in which this information is represented.

I propose that the nominalization under consideration denotes a property of events:

(29) $[\![\textit{Badma's breaking the cart}]\!]^{w,g}$ = λe.break(the cart)(e) & Agent(Badma)(e) & e is in w

I assume that the verbal structure that being nominalized is AspP[13], and that the process of nominalization is semantically vacuous: the denotation of AspP (a property of events) is inherited by the nominalization without any changes. As we have seen in the section 3.3, the nominalization under consideration can be indefinite, and I will use the indefinite reading of the nominalization to illustrate my analysis. I will assume that in cases of indefinite nominalizations, Buryat uses a null existential generalized quantifier with the semantics in (30). This quantifier takes two properties of events and returns 1 iff there is an event that has both of them. Thus, the semantics of the indefinite nominalization is in (31).

(30) $[\![a]\!]^{w,g}$ = λf in D_{vt}. λq in D_{vt}. $\exists$e [f(e)=1 & q(e)=1]

(31) $[\![\textit{a Badma's breaking the cart}]\!]^{w,g}$ = λq in D_{vt}. $\exists$e [break(the cart)(e) & Agent(Badma)(e) & e is in w & q(e)=1]

[13]The morphosyntax of this nominalization supports this assumption: the nominalization allows adverbial modification and has different suffixes depending on the aspectual properties of the event, but does not have the nominative subject marking that is usually present in TPs.

I propose that the Buryat complementizer takes a proposition p and an event e as its arguments and returns 1 iff in all worlds compatible with propositional content of e (= in all worlds such that they are in the set of worlds that Content function returns when applied to the event e) the proposition p is true, (32).

(32) $[\![\textit{that}]\!]^{w,g} = \lambda$p in D_{st}.λe in D_{cv}. $\forall$w'[w' $\in$ Content(e) $\rightarrow$ p(w')=1].

Thus, CPs denote properties of events. For example, the CP 'that Badma broke the cart' denotes a set of events such that in all worlds compatible with their propositional content Badma breaks the cart.

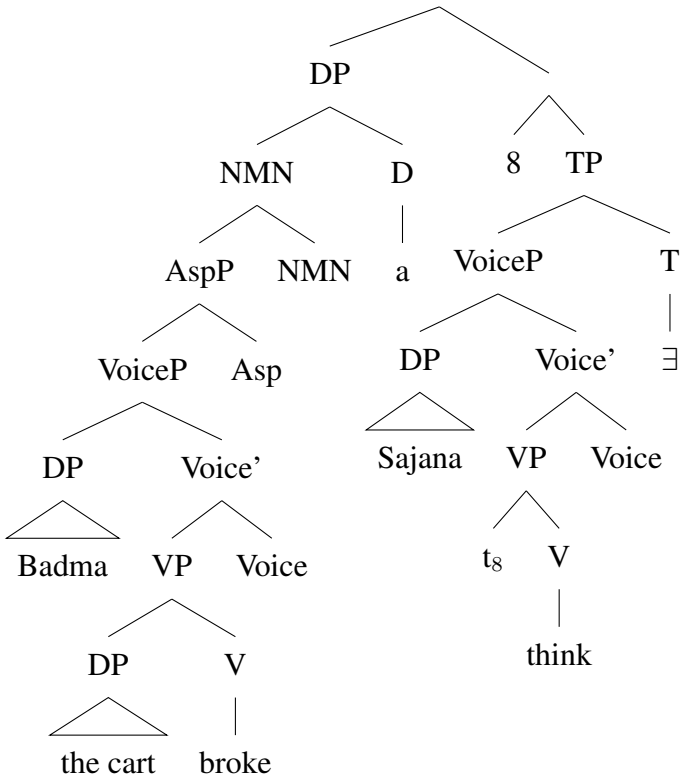
(33) $[\![\textit{that Badma broke the cart}]\!]^{w,g} = \lambda$e in D_{cv}. $\forall$w'[w' $\in$ Content(e) $\rightarrow$ $\exists$e' in D_v [break(the cart)(e') & e' is in w' & Agent(e') = Badma]].

In the next sections I will show how, given the proposed semantics for the attitude verb, for the nominalization, and for the CP clause, to derive the factive alternation in Buryat, (1)-(2).

4.2 *Think* + nominalization

I assume that indefinite nominalizations undergo QR due to a type mismatch in the object position.[14] Thus, the LF of a sentence with an indefinite nominalization is represented in (34).

(34) **The LF of *think* + indefinite NMN**



[14]Note that QR does not have any other contribution to my analysis apart from resolving the type mismatch. One could alternatively assume that quantificational phrases are interpreted in situ due to the availability of type-shifting; my analysis could be implemented under such view equally well.

In (34) the nominalization leaves a trace of type e (t_8) in the position it moved out of, and this trace saturates the verb's internal argument x. I assume that the experiencer of thinking is introduced by the Voice head through Event Identification. Existential closure applies at the level of TP and "closes off" the event variable of the attitude verb, making TP the node of type t. Then the rule of Predicate Abstraction applies, which creates a node (the one dominating index 8 and TP in (34)) whose denotation is a set of individuals such that there is an event of thinking about them by Sajana:

(35) $[\![8\ \text{Sajana}\ t_8\ \text{think}]\!]^{w,g} = \lambda x\ \exists e\text{: LB}(\tau(x)) < \text{LB}(\tau(e)).\ \text{think}(x)(e)$ & e is in w & Experiencer(e) = Sajana.

The indefinite nominalization, (31), combines with its sister, (35), via Function Application, resulting in the meaning in (36): there are two events in w: e and e', where e is an event of thinking about e', and e' is an event of Badma breaking the cart.

(36) $[\![\textit{Sajana thinks of (a) Badma's breaking the cart}]\!]^{w,g} = 1$ iff $\exists e'\ \exists e\text{: LB}(\tau(e')) < \text{LB}(\tau(e))$ [think(e')(e) & e is in w & Exp(e)=S & break(the cart)(e') & e' is in w & Agent(e')=Badma]

It is also presupposed that e' (Badma's breaking the cart) started existing before e (the thinking event). I propose that this presupposition, which states that the object of thought exists prior to thinking, is responsible for the "remember, recall, think of" meaning that arises with nominal complements of *hanaxa* 'think'.

In (35) and (36) I have been sloppy with the notation concerning the presupposition due to an issue that I do not have yet a solution to: the issue of presupposition projection. According to the meaning I have proposed for the verb *hanaxa* 'think', it is a partial function: it is only defined if the left boundary of the time interval corresponding to its internal argument is before the left boundary of the time interval corresponding to the eventuality argument. The question is: how does this presupposition projects? How does it interact with the existential closure and the existential quantifier inside of the nominalization? While I do not have answers to these questions, empirical data about projection from section 2 suggests the following desired conditions: the sentence $[\![\textit{Sajana thinks of (a) Badma's breaking the cart}]\!]^{w,g}$ should be defined iff there is an event of Badma breaking the cart in w at the time interval whose LB preceeds the LB of the time of evaluation (= time at which the matrix eventuality is evaluated); the sentence should be true iff there exists a thinking event at the time of evaluation about an event of Badma breaking the cart, and false iff there is no thinking event at the time of evaluation about an event of Badma breaking the cart. I leave the question of what the theory of presupposition projection needs to be in order to achieve the desired consitions for the further research.

Note that in the semantics that I propose the presupposition is about the left boundary only; it does not say anything about how the right boundary of the object argument is situated with respect to the thinking event. I assume that in sentences with nominalizations the placement of the right boundary with respect to the matrix event is determined by the aspectual properties of the participle that forms the nominalization. So far we have seen the nominalization formed on the base of the participle with suffix *-a:ʃa*, which places the right boundary before the matrix event. But the anteriority of the *-a:ʃa*-nominalization is independent of the factive presupposition. For example, nominalizations formed on the base of the (future) participle with suffix *-xa* situate the right boundary after the matrix event:

(37) badm-i:n du: du:la-x-i:ə səsəg han-a:
Badma-GEN song sing-FUT.PART-ACC Seseg.NOM think-PST
'Seseg *thought **/remembered ("thought of")** Badma's (planned for some future time) singing of the song.'

Note that in (35) the verb *hanaxa* still gets the "remember" meaning. The event denoted by the nominalization is presupposed to have started existing, which gives rise to the inference that the event was planned or scheduled before the thinking event.

The fact that the presupposition is only about the left boundary becomes even clearer when one looks at proper names as objects of *hanaxa*: in (36) Badma needs to have started existing before the thinking event, but he doesn't need to be dead for the sentence to be true.[15]

(38) sajana badm-i:jə han-a:
Sajana.NOM Badma-ACC think-PST
'Sajana *thought **/remembered ("thought of")** Badma.'

Another crucial feature of this proposal is that the nominalizations under consideration do not have a propositional meaning: they are just properties of events. From this it follows that no quantification over possible worlds is present in sentences containing them. In the remainder of this section I show a few facts supporting this hypothesis.

The first piece of evidence that the nominalization does not describe beliefs of the attitude holder comes from sentences like the following:

(39) badma darimi:n dən türgö:r maʃina:r jab-a:ʃ-i:jə hana-na, xarin badma
Badma Darima too.much quickly by.car go-PART-ACC think-PRS but Badma
(darima) dən türgö:r maʃina:r jab-a: gəžə hana-na-güj
(Darima) too.much quickly by.car go-PST COMP think-PRS-NEG
Paraphrase: 'Badma remembers the situation that the speaker thinks of as Darima's driving too quickly, but he doesn't think that Darima drove too quickly. '

[15] While I leave the details of aspectual interpretation of nominalizations open, here is a sketch of the meanings that the past participle (*-a:ʃa*) and the future participle (*-xa*) suffixes would receive:

(i) $[\![\text{PAST.PART}]\!]^{w,t,g} = \lambda P_{vt}.\lambda e.\ \exists t'\ [[\![P]\!]^{w,t',g}(e)\ \&\ RB(t') < LB(t)]$.

(ii) $[\![\text{FUT.PART}]\!]^{w,t,g} = \lambda P_{vt}.\lambda e.\ \exists t'\ [[\![P]\!]^{w,t',g}(e)\ \&\ RB(t') > LB(t)]$.

In (i)-(ii) I have introduced an additional parameter of interpretation — a time interval with respect to which an expression is interpreted. In case of the nominalizations with the past participle suffix, it will thus be asserted that $RB(\tau(e')) < LB(\tau(e))$: the right boundary of the time interval corresponding to the event e' denoted by the nominalization preceeds the left boundary of the time interval corresponding to the event e denoted by the matrix verb (thinking event). Note that this does not contradict the presupposition ($LB(\tau(e')) < LB(\tau(e))$).

Now if we turn to the nominalizations formed with the future participle, we will get the assertion that $RB(\tau(e')) > LB(\tau(e))$: that the right boundary of the event denoted by the nominalization follows the left boundary of the thinking event. This is compatible with the future or present interpretations (the latter are sometimes available for nominalizations formed with this suffix), but not with past interpretations: it cannot be the case that the whole event happened before the time at which the thinking event holds. This seems empirically correct. A more difficult question is: what happens when this meaning in the assertion is combined with the presupposition that ($LB(\tau(e')) < LB(\tau(e))$? I think that this presupposition, together with the assertion above, leads to the observed "planned" reading (37). I leave the question of how exactly this happens for the further research.

Note that in (39) the lexical material of the nominalization and of the CP are identical. If the nominalization denoted a proposition, this sentence would have been contradictory. However, the sentence in (39) is felicitous, because the description of the event denoted by the nominalization is the speaker's description, not Badma's.

Another piece of evidence comes from the fact that the nominalization cannot denote a false memory. Compare the sentence with a CP, (40a), and the one with a nominalization, (40b).

(40) **False memory:** my mom has wrong beliefs about the color of my childhood bike.

a. uda:nai biʃi:xan bai-xada-m nam-da xüxə vəlosipəd bi: bai-ga:. əʒi:-mni
long.ago small be-TEMP-1Sg 1Sg-DAT blue bicycle exist be-PST mother-1Sg
tərən-i:jə-mni ula:n bai-ga: gəžə hana-na
it-ACC-1Sg red be-PST COMP think-PRS
'Long ago, when I was little, I had a blue bicycle. My mother thinks that it was red.'

b. #uda:nai biʃi:xan bai-xada-m nam-da xüxə vəlosipəd bi: bai-ga:. əʒi:-mni
long.ago small be-TEMP-1Sg 1Sg-DAT blue bicycle exist be-PST mother-1Sg
tərən-i:jə-mni ula:n bai-ga:ʃ-i:jə hana-na
it-ACC-1Sg red be-PART-ACC think-PRS
Inteded: 'Long ago, when I was little, I had a blue bicycle. My mother thinks / remembers that it was red / it being red.'

The sentence in (40b) is infelitious because the adjective *ula:n* 'red' cannot be evaluated with respect to the mother's beliefs: this sentences has no quantification over the mother's belief-worlds. The same point is illustrated in (41): the description of the event denoted by the nominalization has to be a true description of this event in the actual world.

(41) Context: Darima recalled a situation that happened recently. She heard some unexpected noise in the back yard while she was alone at home. She was afraid to look who it was. Now she is convinced that it was a thief entering the house, but I know for a fact that it was just her brother coming home earlier than expected from Kurumkan.

a. darima gər-tə xulgaiʃan or-o: gəžə hana-na, xarin tərə
Darima.NOM house-DAT thief.NOM enter-PST COMP think-PRS but that
axa-n' xurumxan-ha: jərə-hən bai-ga:
brother-3.NOM Kurumkan-ABL come-PFCT be-PST
'Darima thinks that a thief entered the house, but it was her brother coming from Kurumkan.'

b. #darima gər-tə xulgaiʃan-ai oro-h-i:jə hana-na, xarin tərə
Darima.NOM house-DAT thief-GEN enter-PART2-ACC think-PRS but that
axa-n' xurumxan-ha: jərə-hən bai-ga:
brother-3.NOM Kurumkan-ABL come-PFCT be-PST
Intended: 'Darima thinks that a thief entered the house, but it was her brother coming from Kurumkan.'

My proposal that the nominalization denotes a property of events is also supported by the distributional facts. First, the nominalization can be the subject of such predicates as 'be sad':

(42) badm-i:n tərgə əmdəl-ə:ʃə-n' gomdoltoi
Badma-GEN cart break-PART-3Sg sad
'Badma's breaking a cart is sad.'

I assume that predicates like 'be sad' can hold of entities, but not of propositions: while an individual or an event can make an (implicit) experiencer sad, it is unclear how a set of worlds can be a causer. This assumption is in line with the observation that constituents with propositional meaning (CPs) are impossible subjects in many languages, including Buryat; and in those languages where they seem to be able to occupy the subject position (like in English) they have been argued to be nominalized (Lees 1960, Rosenbaum 1967, Davies & Dubinsky 1998, a.o.).

Second, the nominalization can be referred to by the noun *uʃar* 'event, situation' and, unlike propositions, can 'happen outside', (43).

(43) a. sajana badm-i:n tərgə əmdəl-ə:ʃ-i:jə han-a:
Sajana.NOM Badma-GEN cart break-PART-ACC think-PST
'Sajana remembered Badma's breaking the cart.'

b. ... ənə uʃar gaza: bol-o:
this event outside become-PST
'...This event happened outside.'

Finally, there is a number of predicates that cannot take the nominalization under consideration as their complement. These are predicates with the following meanings: 'suspect', 'argue', 'take into account', 'deny', 'be mistaken', 'doubt'. I propose that these are predicates that need to combine with something that has a propositional meaning. The nominalization does not have a propositional meaning, so it does not combine with these predicates.

Predicates 'suspect' and 'argue' are separate verbs: *ta:maglaxa* and *arsaldaxa*, (44)-(45):

(44) *ta:maglaxa* 'suspect'

a. sajana səsəg xada də:rə gar-a: gəžə ta:magla-na
Sajana.NOM Seseg.NOM mountain to go-PST COMP suspect-PRS
'Sajana suspected that Seseg went to the mountains.'

b. *sajana səsəg-əi xada də:rə gar-a:ʃ-i:jə ta:magla-na
Sajana.NOM Seseg-GEN mountain to go-PART-ACC suspect-PRS
Intended: 'Sajana suspects that Seseg went to the mountains.'

(45) *arsaldaxa* 'argue'

a. sajana səsəg xada də:rə gar-a: gəžə arsalda-na
Sajana.NOM Seseg.NOM mountain to go-PST COMP argue-PRS
'Sajana argues that Seseg went to the mountains.'

b. *sajana səsəg-əi xada də:rə gar-a:ʃ-i:jə arsalda-na
Sajana.NOM Seseg-GEN mountain to go-PART-ACC suspect-PRS
Intended: 'Sajana argues that Seseg went to the mountains.'

The predicate 'deny' is expressed as negation of the verb *zübʃö:xö* 'approve, recommend'; the predicate 'take into account' is a complex verb 'take, having found out':

(46) *zübʃö:xö* ‘approve, recommend’

a. darima səsəg-i:jə əgə: hain-a:r du:la-dag gəžə zübʃö:-nə-güi
Darima.NOM Seseg-ACC most good-INSTR sing-HAB COMP approve-PRS-NEG
‘Darima denies that Seseg is the best at singing.’

b. *darima səsəg-i:jə əgə: hain-a:r du:la-dag-i:jə zübʃö:-nə-güi
Darima.NOM Seseg-ACC most good-INSTR sing-HAB-ACC approve-PRS-NEG
Intended: ‘Darima denies that Seseg is the best at singing.’

(47) ‘take into account’ = ‘take, having found out’

a. tumən narana mongol oʃ-o: gəžə mədə-žə ab-a:
Tumen.NOM Narana.NOM Mongolia go-PST COMP know-CONV take-PST
‘Tumen took into account that Narana went to Mongolia.’

b. *tumən naran-ai mongol oʃ-o:ʃ-i:jə mədə-žə ab-a:
Tumen.NOM Narana-GEN Mongolia go-PART-ACC know-CONV take-PST
Intended: ‘Tumen took into account that Narana went to Mongolia.’

Finally, predicates ‘doubt’ and ‘be mistaken’ are modified forms of the verb *hanaxa*. In case of ‘doubt’ the embedded clause contains negation and the particle *bʃu:* that roughly means ‘certainly’: to think that it’s not certain that p. The meaning ‘be mistaken’ is conveyed by ‘think wrongly’.

(48) ‘doubt’ = ‘thing that it’s not certain’

a. sajana səsəg xada də:rə gara-ža ʃad-a:-güi-bʃu: gəžə hana-na
Sajana Seseg mountain to go-CONV can-PST-NEG-PTCL COMP think-PRS
‘Sajana doubts that Seseg could go up the mountain.’

b. *sajana səsəg-i:jə xada də:rə gara-ža ʃad-a:-güi-bʃu:-(gi:)jə hana-na
Sajana Seseg-GEN mountain to go-CONV can-PST-NEG-PTCL-ACC think-PRS
Intended: ‘Sajana doubts that Seseg could go up the mountain.’

(49) ‘be mistaken’ = ‘think wrongly’

a. badma tərgə əmdəl-ə: gəžə bi buru: han-a:-b
Badma.NOM cart break-PST COMP 1SG.NOM wrongly think-PST-1Sg
‘I was mistaken that Badma broke the cart.’

b. *badm-i:n tərgə əmdəl-ə:ʃ-i:jə bi buru: han-a:-b
Badma-GEN cart break-PART-ACC 1SG.NOM wrongly think-PST-1Sg
Intended: ‘I was mistaken that Badma broke the cart.’

To sum up, in this section I provided my account of how the combination of *hanaxa* with the nominalization yields ‘remember’. I have argued that *hanaxa* ‘think’ is a verb of use: it presupposes that its internal argument existed prior to the thinking event. In cases with nominalizations, which denote properties of events, this temporal relation leads to the factive inference that the event denoted by the nominalization happened before the thinking event. This is Buryat’s ‘remember’.

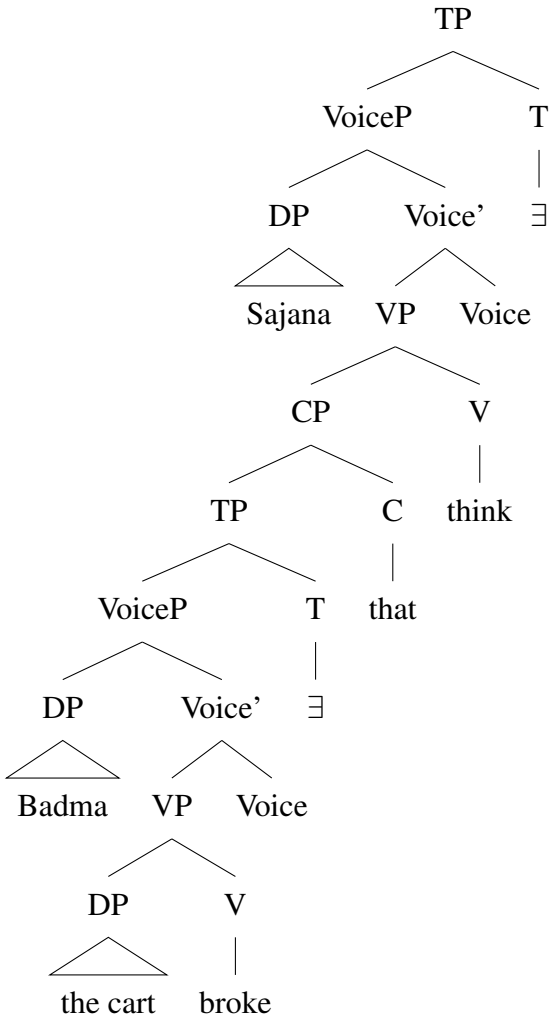
4.3 *Think* + CP

I have proposed that the presupposition that *hanaxa* displays with nominalizations is introduced by the verb: it is a presupposition about the time of existence of the internal argument of the verb. The reason why CPs are not subject to this presupposition is very simple: they are not internal arguments of the verb, so the presupposition does not apply to them. They combine with attitude verbs by restricting their eventuality argument and specifying what set of worlds constitutes its Content. Below I repeat the semantics I propose for the attitude verb *hanaxa*, (26)=(50), and for the CP clause, (33)=(51). The LF that I assume for the sentence with a CP is presented in (52).

(50) $[\![\textit{hanaxa}]\!]^{w,g}$ = λxλe: LB(τ(x)) <LB(τ(e)). think(x)(e) & e is in w.

(51) $[\![\textit{that Badma broke the cart}]\!]^{w,g}$ = λe in D_{cv}. $\forall$w'[w' $\in$ Content(e) $\rightarrow$ $\exists$e' in D_v [break(the cart)(e') & e' is in w' & Agent(e') = Badma]].

(52) **The LF of *think* + CP**



In (53) is the result of combining the attitude verb and the CP together. Since the CP has not saturated any argument of the verb, it is still a function from individuals to events to truth-values.

The CP has restricted the eventuality argument of the verb to events such that in all worlds in Content(e), there is a breaking of the cart by Badma.

(53) $[\![\textit{hanaxa}]\!]^{w,g}$ = λxλe: LB(τ(x)) <LB(τ(e)). think(x)(e) & e is in w & ∀w'[w' ∈ Content(e) → ∃e' in D_v [break(the cart)(e') & e' is in w' & Agent(e') = Badma]].

There are several semantic principles that could be used for combining the CP and the verb. Probably the easiest one is Event Identification (EI, Kratzer 1996), (52): the CP can be combined by identifying the event argument of the CP with the event argument of the attitude verb.

(54) **Event Identification (formulated based on Kratzer 1996: 122)**
If α is a branching node and $\{\beta, \gamma\}$ are the set of its daughters, then, for any assignment g and world w, α is in the domain of $[\![\ ]\!]^{w,g}$ if both β and γ are, and if $[\![\beta]\!]^{w,g}$ denotes a predicate $P\beta$ of type <e,<v,t>>, and $[\![\gamma]\!]^{w,g}$ denotes a predicate $P\gamma$ of type <v,t>. In this case, $[\![\alpha]\!]^{w,g}$ = λx: ∈ D_e and x is in the domain of $[\![\beta]\!]^{w,g}$. λe: ∈ D_v and x is in the domain of $[\![\beta]\!]^{w,g}$ and $[\![\gamma]\!]^{w,g}$. $P\beta$(x)(e) = 1 & $P\gamma$(e) = 1.

As one can see, using Event Identification does not need any modification of the rule that was proposed by Kratzer(1996) for combining agents and other verbal modifiers.

A version of a rule like Restrict (Chung & Ladusaw 2004) can also be used for combining the verb and the CP. While the exact rule of Chung & Ladusaw (2004) is not be applicable, (55), since it was formulated for restricting the internal individual argument of a verb, a generalized version of Restrict, (56), could apply if we change one thing in our denotation of *hanaxa* 'think': if we make the eventuality argument the first argument of the verb.[16]

(55) **Restrict (formulated based on Chung & Ladusaw 2004: 5, 10)**
If α is a branching node and $\{\beta, \gamma\}$ are the set of its daughters, then, for any assignment g and world w, α is in the domain of $[\![\ ]\!]^{w,g}$ if both β and γ are, and if $[\![\beta]\!]^{w,g}$ denotes a predicate $P\beta$ of type <e,<e,<v,t>>>, and $[\![\gamma]\!]^{w,g}$ denotes a predicate $P\gamma$ of type <e,t>. In this case, $[\![\alpha]\!]^{w,g}$ = λy: y ∈ D_e and y is in the domain of $[\![\beta]\!]^{w,g}$. λx: x ∈ D_e and x is in the domain of $[\![\beta]\!]^{w,g}$ and $[\![\gamma]\!]^{w,g}$. λe: e ∈ D_v and e is in the domain of $[\![\beta]\!]^{w,g}$. $P\beta$(x)(y)(e) =1 & $P\gamma$(x) = 1.

(56) **Generalized Restrict**
If α is a branching node and $\{\beta, \gamma\}$ are the set of its daughters, then, for any assignment g and world w, α is in the domain of $[\![\ ]\!]^{w,g}$ if both β and γ are, and if $[\![\beta]\!]^{w,g}$ denotes a predicate $P\beta$ of type $<\sigma_1,<\sigma_2...\ <\sigma_n,t>>>$, and $[\![\gamma]\!]^{w,g}$ denotes a predicate $P\gamma$ of type $<\sigma_1,t>$. In this case, $[\![\alpha]\!]^{w,g}$ = $\lambda x_2...\lambda x_n \lambda x_1$: $x_1...x_n$ are in the domain of $[\![\beta]\!]^{w,g}$ and x_1 is also in the domain of $[\![\gamma]\!]^{w,g}$. $P\beta(x_1)(x_2)...(x_n)$=1 & $P\gamma(x_1)$ = 1.

Both (55) and (56) share the following property: the argument that is being restricted is the first argument of the verb. If one gives up on this property and tries to modify Restrict in a way that

[16]Note that there is one peculiar thing about Restrict as it is introduced in (Chung & Ladusaw 2004): after the first (internal) argument is restricted by a modifier, it becomes the last in the lambda-sequence: "...when an argument is targeted by a composition operation, it is possible to demote it from the top of the lambda prefix to a position just above the event argument." (Chung & Ladusaw 2004: 10). Thus, if one would use a Generalized Restrict for Buryat, together with the assumption that the event is the first argument of the verb, there would be no problem in saturating the individual argument of the verb, because the event argument would be "demoted" after it was restricted.

allows to combine the verb and the CP in Buryat, one gets principles that are equivalent to Event Identification.

Finally, a modified version of Predicate Modification (PM, Heim & Kratzer 1998), (57), could be used for combining the verb and the CP in Buryat, (58).

(57) **Predicate Modification (adapted from Heim & Kratzer 1998: 126)**
If α is a branching node and $\{\beta, \gamma\}$ are the set of its daughters, then, for any assignment g and world w, α is in the domain of $[\![\ ]\!]^{w,g}$ if both β and γ are, and $[\![\beta]\!]^{w,g}$ and $[\![\gamma]\!]^{w,g}$ are both of type <e,t>. In this case, $[\![\alpha]\!]^{w,g} = \lambda$x: x $\in D_e$ and x is in the domain of $[\![\beta]\!]^{w,g}$ and $[\![\gamma]\!]^{w,g}$. $[\![\beta]\!]^{w,g}$(x) = $[\![\gamma]\!]^{w,g}$(x) = 1.

(58) **Modified Predicate Modification**
If α is a branching node and $\{\beta, \gamma\}$ are the set of its daughters, then, for any assignment g and world w, α is in the domain of $[\![\ ]\!]^{w,g}$ if both β and γ are, and if $[\![\beta]\!]^{w,g}$ is a predicate $P\beta$ of type $<\sigma_1,<\sigma_2,...<\sigma_k,...<\sigma_n$, t>>>> and $[\![\gamma]\!]^{w,g}$ is a predicate $P\gamma$ of type $<\sigma_k$, t>. In this case, $[\![\alpha]\!]^{w,g} = \lambda x_1 \lambda x_2 ... \lambda x_k ... \lambda x_n$: $x_1...x_n$ are in the domain of $[\![\beta]\!]^{w,g}$ and x_k is also in the domain of $[\![\gamma]\!]^{w,g}$. $P\beta(x_1)(x_2)...(x_k)...(x_n) = 1$ & $P\gamma(x_k) = 1$.

The rule in (58) gives up on the following property of PM: the two combining constituents being of an identical type. It basically allows a modifier of a type $<\sigma_k$, t> to modify any σ_k-type variable of a predicate.

Although all of the principles discussed above can provide a way of combining the verb and the CP in Buryat, it seems that Event Identification requires less innovations or stipulations than other approaches. Restrict crucially needs the event argument be the first argument of the verb, modified PM in (58) seems to be very unrestrictive (it allows any modifiers to correspond to any unsaturated arguments of a predicate), while Event Identification requires no changes at all. Thus, I will assume that the verb and the CP can combine via EI in Buryat.

After the CP is merged, the experiencer of thinking is introduced by the Voice head through Event Identification. Then the existential closure applies, "closing off" both the object variable and the event variable of the attitude verb:

(59) $[\![$*Sajana thinks that Badma broke the cart*$]\!]^{w,g}$ = 1 iff
$\exists x \exists e$: LB(τ(x))<LB(τ(e)) [think(x)(e) & e is in w & Experiencer(e) = Sajana & $\forall$w'[w' $\in$ Content(e) $\rightarrow \exists$e' in D_v[break(the cart)(e') & e' is in w' & Agent(e') = Badma]]]

The presupposition of the verb is still present in the sentence with the CP, (59): it is defined if there is some x (topic, object of thoughts) that existed prior to the thinking event. But this presupposition is undetectable: there is no lexical material that corresponds to the object x. Depending on the context, Sajana's thoughts could be about Badma, or about the cart, or about breakings that happened recently. The presupposition of the sentence only requires that there is some topic, and whatever it is, it existed before the thinking. Note that this presupposition is not about an event of Badma breaking the cart, it's about some (left implicit) topic of thoughts. Hence, no inference that Badma broke the cart arises. Where defined, the sentence is true just in case there is an event e of thinking in w by Sajana about x, and in all worlds that are in the set of worlds that is the Content of e, there is an event e' of breaking the cart by Badma in them.

This analysis of CPs treats them semantically as modifiers: as properties of events. Note that this is different from the original proposal in (Kratzer 2006), in which CPs were treated as

properties of individuals that combine with the verb by restricting its content argument. Instead, I adopt the implementation used in (Kratzer 2013) and in (Bogal-Allbritten 2017), where CPs are considered properties of events. The reason for this is that there is some morphosyntactic evidence for the latter approach for Buryat. First, there is a piece of evidence that comes from morphology — from the form of the complementizer. The complementizer that we have seen in the sentences with CPs above consists of two morphemes: the root of the verb *gə* 'say' and the suffix *-žə*, which is a converbial suffix that is found in sentential adjuncts, with restructuring verbs, in analytical verb forms. For example, compare (60)=(1) with an adjunct clause in (61):

(60) dugar [$_{CP}$ mi:sgəi zagaha ədj-ə: gə-**žə**] han-a:
Dugar.NOM cat.NOM fish eat-PST say-**CONV** think-PST
'Dugar thought that a cat ate fish.'

(61) ojuna üxibü: türə-**žə**, badma əsəgə bolo-bo
Ojuna.NOM child give.birth.to-**CONV** Badma.NOM father become-PST
'By Ojuna giving birth to a child, Badma became a father.'

If morphology reflects how these clauses are constructed, then the converbial morphology that we see might indicate that in both cases the clauses with the suffix *-žə* combine with the main predicate in the same way. Being a non-finite sentential adjunct, the clause in (61) probably combines by modifying the event variable of the main predicate by Event Identification or a similiar principle. If CPs in Buryat denoted propositions or properties of simple, non-eventive individuals, them having the suffix *-žə* would be surprising. Given the view proposed in this paper, however, this comes as no surprise: CPs in Buryat are properties of events and display morphology that is common for event-modifying constituents to have.

The second piece of evidence is in a way connected to the previous one and has to do with pro-form substitution. Buryat has a verb *ti:xə* 'do.so', different forms of which can serve as proforms for verbal constituents of different types. It also has a demonstrative pronoun *tərə* that can be used to refer to nouns. CPs that combine with attitude verbs can be only substituted by a a proform *ti:-žə* (do.so-CONV), which is also used for substitution of verbal adjuncts and restructuring clauses, for example (62). CPs cannot be substituted by any other proform, including the demonstrative pronoun *tərə* and the adjectival proform *ti:-mə* (do.so-ADJ), (63).

(62) *ti:-žə* substituting for a restructuring clause
üsəgəldər badma [bəʃəg bəʃə-**žə**] əxil-ə:, ba münö:dər (badma)
yesterday Badma.NOM letter write-**CONV** begin-PST CONJ today (Badma.NOM)
baha **ti:-žə** əxil-ə:
also **do.so-CONV** begin-PST
'Yesterday Badma began to write a letter, and today (Badma) also began to do so.'

(63) *ti:-žə* substituting a CP clause
badma sajana bulj-a: gə-**žə** han-a:, ojuna baha
Badma.NOM Sajana.NOM win-PST say-**CONV** think-PST Ojuna.NOM also
ti:-žə / *ti:-mə / *tərən-i:jə han-a:
do.so-CONV do.so-ADJ that-ACC think-PST
'Badma thought that Sajana won, Ojuna also thought so.'

This suggests that CP clauses in Buryat do not pattern with individuals or even properties of individuals like adjectives, but pattern with things that denote properties of events.

Finally, if CPs are event modifiers, some facts about their syntactic distribution can be easily explained. First, it becomes immediately clear why these CPs cannot be subjects: being properties of events, CPs cannot occupy argument positions, (64).

(64) *[$_{CP}$ badma tərgə əmdəl-hən gə-žə sajan-i:jə ga:ru:l-a:]
Badma.NOM cart break-PFCT say-CONV Sajana-ACC angry-PST
Intended: 'That Badma broke the cart angried Sajana.'

Second, it becomes less surprising why CPs are quite free in their position in the clause and can occur in any position to the left of the verb without any detectable differences in meaning: for example, between the subject and the verb, (65a), or before the subject, (65b).

(65) a. sajana [$_{CP}$ badma jər-ə: gə-žə] mədə-nə
Sajana.NOM Badma.NOM come-PST say-CONV know-PST
'Sajana found out that Badma came.'

b. [$_{CP}$ badma jər-ə: gə-žə] sajana mədə-nə
Badma.NOM come-PST say-CONV Sajana.NOM know-PST
'Sajana found out that Badma came.'

This is exactly the behavior that event-modifying elements display, for example adverbs:[17]

[17]There is, however, one difference between the distribution of CPs and distribution of adverbs: with simple lexical verbs, CPs are able to occur to their right, (i) while adverbs cannot (66d).

(i) sajana mədə-nə: [$_{CP}$ badma jər-ə: gə-žə]
Sajana.NOM know-PST Badma.NOM come-PST say-CONV
'Sajana found out that Badma came.'

I leave it as an open question for why (i) is possible. Based on the fact that informants liked to make a pause and put a colon (:) before the CP in such sentences one might hypothesize that these cases might involve direct speech or two clauses not related by a syntactic dependency.

This option of a CP following the verb is however never possible in sentences where the predicate includes modal and / or auxiliary verbs, (ii). This looks like a mirror picture of German, (iii).

(ii) a. badma [$_{CP}$ dugar tərgə əmdəl-ə: gə-žə] mədə-xə joho-toi bai-ga:
Badma.NOM Dugar.NOM cart break-PST say-CONV know-FUT custom-COM be-PST
'Badma had to know that Dugar broke the cart.' (lit.: 'was with custom')

b. badma mədə-xə *[$_{CP}$...] joho-toi *[$_{CP}$...] bai-ga: *[$_{CP}$...]

(iii) a. (Moulton 2015: 335, (101))
...weil er behaupten muss [$_{CP}$ dass er Hemingway geschlagen hat]
...because he claim must that he Hemingway beaten has
'...because he must claim that he has beaten Hemingway.'

b. weil er *[$_{CP}$...] behaupten *[$_{CP}$...] muss

Moulton (2015), who does not use a semantic principle that would combine a CP and the verb in situ, argues based on the data from German, (iii), that in SOV languages with property-denoting CPs, CPs undergo obligatory movement to Asp followed by the remnant movement of the AspP. As we see from the word order comparison with Buryat, combining CPs and attitude verbs in situ is in principle an option available in languages.

(66) Adverbial positions in Buryat (data from Delikanova, ms)

a. **za:bol** rinčin ajaga uga:-xa
certainly Rinchin dishes wash-FUT
'Rinchin will certainly wash the dishes.'

b. žargalma **za:bol** müri:sö:n-də ila-xa
Zhargalma **certainly** competition-DAT win-FUT
'Zhargalma will certainly win the competition.'

c. zadača axa-mni **za:bol** bodo-xo
task brother-1SG **certainly** solve-FUT
'My brother will certainly solve the task.'

d. *vrač xoška argal-xa **za:bol**
doctor.NOM cat cure-FUT **certainly**
Intended: 'The doctor will certainly cure the cat.'

If CPs are modifiers of the event argument, it might be possible for them to attach at different stages of the derivation as long as the event variable is not yet "closed off" by the existential closure.

Third, the position of the CP makes a difference for binding for at least one of my consultants[18]. Buryat obeys the principle C in simple clauses, as can be seen in (67):

(67) *tərə$_1$ badm-i:jə$_1$ xar-a:
that.NOM Badma-ACC see-PST
Intended: 'Badma saw himself.'

Whether or not the subject c-commands the arguments of the CP depends on the position of the CP in the sentence: if the CP is between the subject and the verb, the subjects c-commands the arguments of the CP; if the CP preceeds the subject, the subject does not c-command CP's arguments. This leads to the violation of the principle C in (68a), but not in (68b).

(68) a. tərə$_{1/*2}$ [$_{CP}$ sajana badm-i:jə$_2$ xar-a: gə-žə] han-a:
that.NOM Sajana.NOM Badma-ACC see-PST say-CONV think-PST
'He$_{1/*2}$ thought that Sajana saw Badma$_2$.'

b. [$_{CP}$ sajana badm-i:jə$_2$ xar-a: gə-žə] tərə$_{1/2}$ han-a:
Sajana.NOM Badma-ACC see-PST say-CONV that.NOM think-PST
'He$_{1/2}$ thought that Sajana saw Badma$_2$.'

The binding facts in (68) can receive the following explanation if Buryat CPs are properties of events: (68a) and (68b) differ in the position where the CP is merged. In (68a) the CP is combined before the subject is introduced; so the arguments of the CP are c-commanded by the subject, and the subject preceeds the CP. In (68b) the CP is combined after the subject is introduced; so the arguments of the CP are not c-commanded by the subject, and the CP preceeds the subject.

Note that our semantics does not restrict the order in which the subject and the CP combine with the verb, since both combine by Event Identification or a similiar principle – both restrict the

[18] Unfortunately, I have not been able to test this phenomenon with more speakers.

event argument of the verb. Thus, at least for some speakers, their order of combination with the verb can be free in syntax as well, as demonstrated by different binding possibilitites in (68).

The arguments from the morphological form of the complementizer, proform substitution and the syntactic distribution of CPs suggest that Buryat CPs are properties of events, not properties of individuals or propositions.

To sum up, in this section I made a proposal about how verbs like *hanaxa* 'think' combine with CPs in Buryat. I have shown that it is possible for the attitude verb to have the same denotation with CPs as it has with NPs, but not to lead to the same factive inference. According to my proposal, the factive presupposition becomes invisible with CPs because it is a presupposition about the internal argument of the verb, and in sentences with CPs that have been discussed so far this argument slot is not saturated by any real argument, but is just existentially quantified over. So the presupposition is still there, but it's very weak: it just requires that there is some topic of thoughts that existed prior to the thinking event. The CP combines with the attitude verb by modifying its event argument, and is not related to the existence presupposition of the verb in any way. I have shown some morphosyntactic evidence that supports this view of CPs in Buryat.

5 Predictions

This section explores some predictions of the present analysis. One of the things to note about the proposed semantics for *hanaxa* 'think', (26) repeated here as (69), is that it predicts that it should be possible to both combine a CP clause with the verb by modifying the event argument e and an NP by saturating the internal argument x. Nothing in the analysis prevents it.

(69) $[\![\textit{hanaxa}]\!]^{w,g} = \lambda x \lambda e$: LB($\tau$(x)) $<$LB(τ(e)). think(x)(e) & e is in w.

I will argue that this option is in fact attested. In section 5.1 I show that the internal argument can be saturated by externally merging a noun phrase. In section 5.2 I show that Internal Merge is possible as well. I present a construction with CPs that have accusative subjects in Buryat and show how a covert hyperraising analysis into the argument position x of the matrix verb can account for the semantic and morphosyntactic properties of the construction.

Apart from the CPs and AspP nominalizations that I have been discussing so far, Barguzin Buryat also has nominalized CPs. Section 5.3 discusses the predictions of my analysis for nominalized CPs and shows their behavior under *hanaxa* 'think'.

5.1 Saturating x by External Merge

I would like to suggest that the first instance when we see the attitude verb combining with both a CP and a noun is when a noun combined with the attitude verb by External Merge. Consider the examples in (70)-(72)[19]:

[19] As far as I know, the order of the CP and the object NP in this construction is not free: CP preceding NP is grammatical, while NP preceding CP is not. This syntactic restriction does not follow from anything in my analysis and I don't know why it holds. I can hypothesize that in cases where the object argument is present in the enumeration is has to be merged before adjuncts, but I don't know whether such a stipulation is well justified.

(70) *[$_{CP}$ badma tərgə əmdəl-ə: gə-žə] uʃar gomdoltoi
Badma.NOM cart break-PST say-CONV event sad
Intended: 'The event that Badma broke the cart was sad.'

(71) uʃar gomdoltoi
event sad
'The event was sad.'

(72) sajana [[$_{CP}$ badma tərgə əmdəl-ə: gə-žə] [$_{VP}$ uʃar-i:-jə han-a:]]
Sajana.NOM Badma.NOM cart break-PST say-CONV event-ACC think-PST
'Sajana remembered ("thought of") of the event that Badma broke the cart (in that event).'

In (70) the noun *uʃar* 'event' is in the subject position. We see that this noun cannot take a CP clause as its complement. (71) shows that as soon as the CP is removed, the example becomes grammatical, so the reason for the ungrammaticality is indeed the CP. The sentence in (72) is however grammatical. Since *uʃar* 'event' cannot take a CP, it cannot be the case that the CP and the object NP form a constituent. I suggest that (72) is grammatical because it involves a configuration where the attitude verb first combines with the noun *uʃar* 'event' that saturates its internal argument x, and then it combines with a CP that restricts its event variable. Under the analysis I have proposed, the existence of such structure is expected.[20]

There is, however, an even more direct indication that externally merging an NP while modifying the verb by a CP at the same time is a possible configuration. We see it in (73), where the nominalization and the CP co-occur in one sentence:

[20] *Hanaxa* is not the only verb with which such behavior can be observed. A similiar contrast can be seen, for example, in (ia)-(ic) with the verb *bəʃəxə* 'write':

(i) a. ??[$_{CP}$ Gulivər ajanʃal-a: gə-žə] nom honin
Guliver.NOM travel-PST say-CONV book.NOM interesting
Intended: 'The book (about) Guliver travelling is interesting.
(lit. ' The book that Guliver traveled is interesting').'

b. nom honin
book.NOM interesting
'The book is interesting.'

c. badma [$_{CP}$ Gulivər ajanʃal-a: gə-žə] nom bəʃ-ə:
Badma.NOM Guliver.NOM travel-PST say-CONV book write-PST
'Badma wrote a book that Guliver travelled.'

The sentence in (ia) shows that the noun *nom* 'book' cannot combine with CPs when it occupies the subject position; (ib) shows that it is indeed the presence of a CP that made (ia) ungrammatical. In (ic) we see a grammatical sentence with CP followed by *nom* 'book'. Since we know that *nom* 'book' cannot be forming a constituent with the CP, we have to conclude that first *nom* 'book' combines with the verb, and then the CP combines with the resulting VP. This shows that the verb *bəʃəxə* 'write' has an argument structure similiar to *hanaxa* 'think'.

(73) sajana [$_{NMN}$ badm-i:n xurumxa:n-ha: jər-ɔ:d bai-ga:ʃ-i:jə-n'] [$_{CP}$
Sajana.NOM Badma-GEN Kurumkan-ABL come-CONV2 be-PART-ACC-3
gər-tə xulgaiʃan or-o: gə-žə] han-a:
house-DAT burglar.NOM go.in-PST say-CONV think-PST
'Sajana remembered ("thought of") of the event of Badma returning from Kurumkan, (thinking) that a burglar entered the house.'

The sentence in (73) can be felicitously uttered in a context where Sajana remembered an event which the speaker considers to be a Badma-returning-from-Karumkan event, but Sajana herself thinks that what happened in that event is that a burglar entered the house. Here an event denoted by the nominalization is the topic of Sajana's thoughts, while the CP specifies the content of Sajana's thoughts about this topic. Again, the grammaticality of this structure is predicted by my proposal. In addition, it shows that the ambiguity hypothesis for *hanaxa* cannot be correct: in (73) there is only one verb, but it combines both with the nominalization and with the CP at the same time.

5.2 Saturating x by Internal Merge: accusative subjects

I propose that there is another case of combining a CP (by restricting e) and an NP (by saturating x) at the same time: sentences with CPs that have accusative subjects.[21] The example in (74) shows that subjects of CPs can be nominative or accusative; other case markings are impossible:

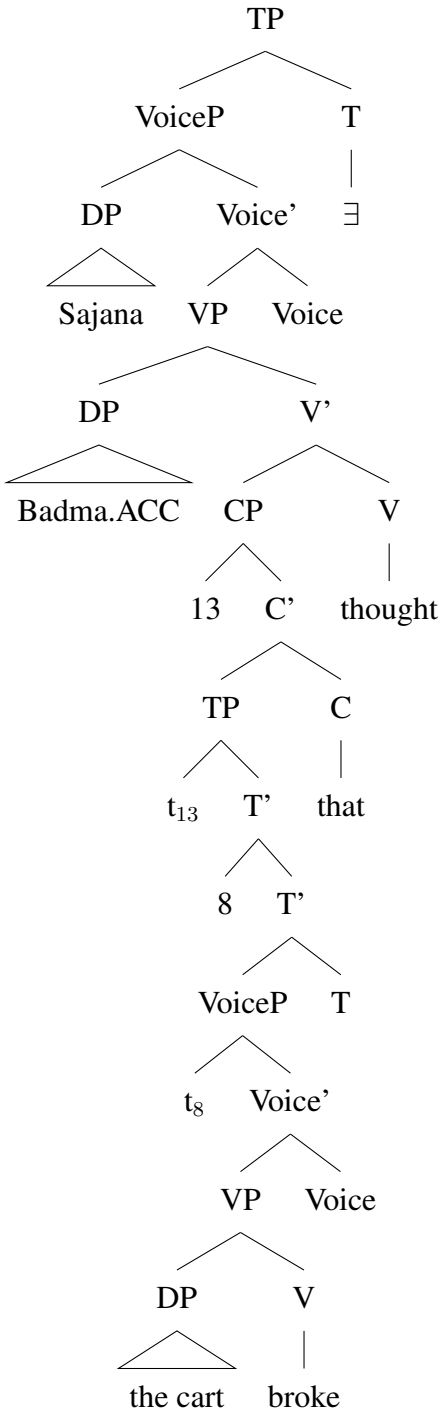
(74) sajana [**badma / badm-i:jə /** *badm-i:n tərgə əmdəl-ə: gəžə] han-a:
Sajana **Badma.NOM / Bada.ACC /** Badma-GEN cart break-PST COMP think-PST
'Sajana **thought /** *remembered that Badma broke the cart.'

I would like to propose that in sentences with accusative subjects like (74) the accusative subject originates inside of the embedded clause, but then later undergoes covert hyper-raising into an argument position into the object position of the attitude predicate, saturating the internal argument x of the verb. I will first introduce the semantic derivation of such sentences, and then will discuss some syntactic and semantic evidence that supports this proposal, as well as some potential alternatives to it.

In (75) I present the LF for a sentence with accusative subjects like in (74).

[21] Accusative subjects in Buryat are also found in nominalized clauses. In the end of this section I will briefly discuss why accusative subjects of nominalizations is a phenomenon different from accusative subjects of CPs.

(75) **LF of a sentence with an ACC subject**



I assume that the accusative subjects moves through the Spec, TP position on its way outside of the embedded clause, but nothing depends on this assumption: this analysis could equally hold if the subject moves directly from the Spec, VoiceP position.

One unorthodox part of the derivation presented in (75) is the following: the index associated with the moved noun phrase is separated from it by another lexical head. I assume that this separation is restricted: an index can be separated from the noun phrase associated with it only by nodes

/ phrases that cannot saturate the function created by the index. I leave it for the further research to determine the exact restrictions on the separation of this sort. Separating a noun phrase from its index has been proposed before: Deal (2018) has used it for a covert hyper-raising construction in Nez Perce; Nissenbaum (1998, 2000) has used it for the analysis of parasitic gaps. Another unorthodox part is that the accusative subject (*Badma* in (75)) receives two theta-roles at once: it is the agent of the embedded verb as well as the internal argument of the matrix verb.

Keeping the assumptions above in mind, we can turn to the semantic derviation of (75). I repeat the denotation of the verb in (76) with slightly changed variable names: it is a function that takes an individual argument y (= what is being thought about) and the event argument e_1 (= the thinking event) and returns true iff e_1 is an event of thinking about y and it is in w.

(76) $[\![\textit{hanaxa}]\!]^{w,g}$ = $\lambda y \lambda e_1$: LB(τ(y)) <LB(τ(e_1)). think(y)(e_1) & e_1 is in w.

The denotation of the CP is the same as before, with the only difference that there is an index of the moved noun phrase inside of the CP. Thus, Predicate Abstraction over the agent variable happens, resulting in (77): it's a function that takes an individual z and an event e_2 as its arguments, and returns true iff for all worlds compatible with the propositional content of e_2, there is an event of breaking the cart by z in those worlds.

(77) $[\![\textit{that 13 } t_{13} \textit{ 8 } t_8 \textit{ Badma broke the cart}]\!]^{w,g}$ = $\lambda z \lambda e_2$ in D_{cv}. $\forall$w'[w' $\in$ Content(e_2) $\rightarrow$ $\exists$e' in D_v [break(the cart)(e') & e' is in w' & Agent(e') = z]].

At this point of the derivation, the CP and the verb are of the same type: they are functions from individuals to events to truth-values (<e,<v, t>>). I propose that they can combine by a Generalized Predicate Modification as in (78). This rule will identify their arguments, both individual (y = z = **x**) and event arguments (e_1 = e_2 = **e**). Thus, we will get the denotation in (79).

(78) **Generalized Predicate Modification**
If α is a branching node, $\{\beta, \gamma\}$ is the set of α's daughters, and $[\![\beta]\!]^{w,g}$ and $[\![\gamma]\!]^{w,g}$ are in the same domain D<σ_1,<σ_2...,<σ_n,t>> (where n $\geq$ 2), then $[\![\beta]\!]^{w,g}$(x_1)(x_2)...(x_n) = $[\![\gamma]\!]^{w,g}$(x_1)(x_2)...(x_n) = 1.

(79) $[\![\textit{hanaxa + CP}]\!]^{w,g}$ = $\lambda x \lambda e$: LB(τ(x)) <LB(τ(e)). think(x)(e) & e is in w & $\forall$w'[w' $\in$ Content(e) $\rightarrow$ $\exists$e' in D_v [break(the cart)(e') & e' is in w' & Agent(e') = x]].

At the next step, the accusative subject is merged: it saturates the argument x, and by doing so, it saturates both the internal argument of *hanaxa* (= what the thought is about) and the agent argument of the breaking.

(80) $[\![\textit{Badma.ACC hanaxa + CP}]\!]^{w,g}$ = λe: LB(τ(Badma)) <LB(τ(e)). think(**Badma**)(e) & e is in w & $\forall$w'[w' $\in$ Content(e) $\rightarrow$ $\exists$e' in D_v [break(the cart)(e') & e' is in w' & Agent(e') = **Badma**]].

Finally, the experiencer of thinking is introduced by the matrix Voice through Event Identification, and the event variable undergoes Existential Closure, (81). The sentence with an accusative subject and a CP is defined if the individual denoted by the accusative subject (*Badma* in (81)) existed in the actual world prior to the thinking event. Where defined, the sentence is true iff e is an event of thinking about Badma, e is in w and it's experiencer is Sajana, and in all worlds compatible with the propositional content of e, there exists a breaking of the cart by Badma in those worlds.

(81) $[\![$*Sajana thought of Badma.ACC that he broke the cart*$]\!]^{w,g}$ = ∃e: LB(τ(Badma)) <LB(τ(e)). think(Badma)(e) & e is in w & Experiencer(e) = Sajana & ∀w'[w' ∈ Content(e) → ∃e' in D_v [break(the cart)(e') & e' is in w' & Agent(e') = Badma]].

Now I turn to the discussion of the available evidence in favor of this proposal. The first set of evidence has to do with diagnosing movement of the accusative subject. I will show that facts from anaphor binding, NPI licensing, and islands suggest that accusative subjects have to undergo movement.

Barguzin Buryat has a possessive anaphor *ör-i:n-gö:* (self-GEN-REFL) that has to be bound by a c-commanding noun phrase in the same clause that contains it. In (82) we see that the possibility of modifying the subject of an embedded clause with this anaphor depends on the case of the subject: only accusative subjects allow such modification.

(82) Reflexive Possessor of SUBe bound by SUBm

a. **NOM subject**

*badma **ör-i:n-gö:** hamga-**n** zurag zur-a: gə-žə hana-na
Badma.NOM **self-GEN-REFL** wife-**NOM** picture paint-PST say-CONV think-PRS

Intended: 'Badma$_1$ thinks that his$_1$ wife painted a picture.'

b. **ACC subject**

badma **ör-i:n-gö:** hamg-**i:jə** zurag zur-a: gə-žə hana-na
Badma.NOM **self-GEN-REFL** wife-**ACC** picture paint-PST say-CONV think-PRS

'Badma$_1$ thinks that his$_1$ wife painted a picture.'

I suggest that this difference between the accusative and the nominative subjects is due to accusative subjects moving to a higher position in the structure: their final position is within the matrix binding domain, so an anaphor modifying them can get bound by the matrix subject.

Another piece of evidence for the movement of accusative subjects comes from NPI licensing. The example (83) shows that the element *xən-ʃjə* (who-PTCL) is an NPI that has to be licensed within the same clause that contains it. (83a) shows a grammatical sentence where embedded negation is creating an entailment reversing environment that is licensing the NPI. (83b) shows that negation in the matrix clause cannot do the same. (83c) shows that a sentence without the entailment reversing environment at all cannot have this NPI in it as well.

(83) NPIs have to be clause-bound

a. **Clausemate Negation**

badma tumən **xən-i:-ʃjə** xar-a:-**güi** gə-žə han-a:
Badma.NOM Tumen.NOM **who-ACC-PTCL** see-PST-**NEG** say-CONV think-PST

'Badma thought that Tumen didn't see anyone.'

b. **Negation in the higher clause**

*badma tumən **xən-i:-ʃjə** xar-a: gə-žə han-a:-**güi**
Badma.NOM Tumen.NOM **who-ACC-PTCL** see-PST say-CONV think-PST-**NEG**

Intended: 'Badma didn't think that Tumen saw anyone.'

c. **No negation in the sentence**

*badma tumən **xən-i:-ʃjə** xar-a: gə-žə han-a:
Badma.NOM Tumen.NOM **who-ACC-PTCL** see-PST say-CONV think-PST

Intended: 'Badma thought that Tumen saw someone / anyone.'

Now consider the examples in (84)-(85):

(84) **Nominative NPI subjects**

a. sajana **xən-ʃjə** badm-i:jə xar-a:-**güi** gə-žə han-a:
Sajana.NOM **who.NOM-PTCL** Badma-ACC see-PST-**NEG** say-CONV think-PST
'Sajana thought that nobody saw Badma.'

b. *sajana **xən-ʃjə** badm-i:jə xar-a: gə-žə han-a:-**güi**
Sajana.NOM **who.NOM-PTCL** Badma-ACC see-PST say-CONV think-PST-**NEG**
Intended: 'Sajana didn't think about anyone that he saw Badma.'

(85) **Accusative NPI subjects**

a. *sajana **xən-i:-ʃjə** badm-i:jə xar-a:-**güi** gə-žə han-a:
Sajana.NOM **who-ACC-PTCL** Badma-ACC see-PST-**NEG** say-CONV think-PST
Intended: 'Sajana thought that nobody saw Badma.'

b. sajana **xən-i:-ʃjə** badm-i:jə xar-a: gə-žə han-a:-**güi**
Sajana.NOM **who-ACC-PTCL** Badma-ACC see-PST say-CONV think-PST-**NEG**
'Sajana didn't think about anyone that he saw Badma.'

We see that a nominative NPI subject has to co-exist with an item like negation that creates a reversing entailment environment in the same clause. Matrix negation cannot help in licesning an embedded nominative NPI. With accusative subject NPIs, the picture is reversed: they have to be licensed by an element that creates a reversing entailment environment in the matrix clause, (85b); creating such an environment in the embedding clause does not help the accusative subject NPI licensing, (85a). This suggests that accusative subjects undergo movement, and at the level of LF they are interpreted in the matrix domain for NPI licensing.

Another piece of evidence comes from island constraints. (86) shows that subjects of relative clauses that modify a noun in a CP clause embedded under *hanaxa* 'think' cannot be accusative.

(86) a. darima dugar-ai xara-han bagʃa ʃüləg bəʃ-ə: gə-žə han-a:
Darima Dugar-GEN see-PFCT teacher.NOM poem write-PST say-CONV think-PST
'Darima thinks that the teacher whom Dugar saw wrote a poem.'

b. *darima **dugar-i:jə** / dugar xara-han bagʃa ʃüləg bəʃ-ə:
Darima **Dugar-ACC** / Dugar-NOM see-PFCT teacher.NOM poem write-PST
gə-žə han-a:
say-CONV think-PST
Intended: 'Darima thinks that the teacher whom Dugar saw wrote a poem.'

I suggest that the ungrammaticality of (86b) with an accusative subject is due to the fact that in order to become an accusative subject, an NP would have to move, but movement in this configuration is banned due to the Relative Clause island (Complex NP Constraint). (87) illustrates that

Barguzin Buryat indeed obeys the Relative Clause island: wh-movement, whether overt (87c) or in situ (87b), in impossible for the subject of the relative clause.[22]

(87) a. daba: dugar-ai ala-han xübü:-jə mədə-xə
Daaba.NOM Dugar-GEN kill-PFCT boy-ACC know-FUT
'Daaba will recognize the boy whom Dugar killed.'

b. *daba: xən-əi ala-han xübü:-jə mədə-xə-b?
Daaba.NOM who-GEN kill-PFCT boy-ACC know-FUT-Q
Intended: 'Who is the person x such that Daaba will recognize the boy whom x killed?'[23]

c. *xən-əi daba: ala-han xübü:-jə mədə-xə-b?
who-GEN Daaba.NOM kill-PFCT boy-ACC know-FUT-Q
Intended: 'Who is the person x such that Daaba will recognize the boy whom x killed?'

Accusative subjects also cannot occur in adjunct islands, (88). The temporal clause that modifies the embedded verb can have only a nominative or genitive, but not an accusative subject. I propose that accusative subjects are banned in this configuration because they need to undergo movement, but movement out of an adjunct island is illicit.

(88) a. darima bagʃ-i:n / bagʃa klas so: oro-xodo-n'
Darima.NOM teacher-GEN / teacher.NOM class in come-TEMP.ADJ-3
üxibü:-d məndəʃəl-xə gə-žə han-a:
child-PL.NOM greet-FUT say-CONV think-PST
'Darima thinks that when the teacher will come, the children will greet him.'

b. *darima **bagʃ-i:jə** klas so: oro-xodo-n' üxibü:-d
Darima.NOM **teacher-ACC** class in come-TEMP.ADJ-3 child-PL.NOM
məndəʃəl-xə gə-žə han-a:
greet-FUT say-CONV think-PST
Intended: 'Darima thinks that when the teacher will come, the children will greet him.'

Finally, consider the coordination of the two CPs in (89).[24] Interestingly, the case of the subjects of the two CP clauses need to match: either both subjects have to be nominative (89a) or both have to be accusative (89b), other options are not possible, (89c-d). I suggest that this is so because (89c-d) violate Coordinate Structure Constraint. While not moving subjects of both conjuncts (89a) and ATB-moving subjects from both conjuncts (89b) are possible derivations, moving an (accusative) noun phrase just from one conjunct but not the other would lead to an island violation.

(89) a. xübü:n [$_{CP}$**badma** ʃənə na:danxai aba-xa gə-žə] ba [$_{CP}$**tumən**
boy.NOM **Badma.NOM** new toy buy-FUT say-CONV and **Tumen.NOM**
ʃənə nom aba-xa gə-žə] han-a:
new book buy-FUT say-CONV think-PST
'The boy thought that Badma will buy a new toy and that Tumen will buy a new book.'

[22]I am gratefull to Katya Morgunova for sharing these data with me.

[23]This sentence is grammatical under a different reading: 'Whose boy that was killed will Dabaa recognize?'

[24]Not all my informants allow coordinating two CPs, most prefer coordinating two TPs. These data come from the speakers that can tollerate two coordinated CPs.

b. xübü:n [$_{CP}$**badm-i:jə** ʃənə na:danxai aba-xa gə-žə] ba [$_{CP}$**tumən-i:jə**
boy.NOM **Badma-ACC** new toy buy-FUT say-CONV and **Tumen-ACC**
ʃənə nom aba-xa gə-žə] han-a:
new book buy-FUT say-CONV think-PST
'The boy thought that Badma will buy a new toy and that Tumen will buy a new book.'

c. *xübü:n [$_{CP}$**badma** ʃənə na:danxai aba-xa gə-žə] ba [$_{CP}$**tumən-i:jə**
boy.NOM **Badma.NOM** new toy buy-FUT say-CONV and **Tumen.ACC**
ʃənə nom aba-xa gə-žə] han-a:
new book buy-FUT say-CONV think-PST
Intended: 'The boy thought that Badma will buy a new toy and that Tumen will buy a new book.'

d. *xübü:n [$_{CP}$**badm-i:jə** ʃənə na:danxai aba-xa gə-žə] ba [$_{CP}$**tumən**
boy.NOM **Badma-ACC** new toy buy-FUT say-CONV and **Tumen.NOM**
ʃənə nom aba-xa gə-žə] han-a:
new book buy-FUT say-CONV think-PST
Intended: 'The boy thought that Badma will buy a new toy and that Tumen will buy a new book.'

Note that none of the diagnostics above tells us where exactly the accusative subjects move. The only thing that we can conclude is that accusative subjects have to be at LF at least as high as Spec, CP in order to be able to create binding and NPI dependencies with the elements of the matrix clause.

Note that the island diagnotics allow us to rule out the prolepsis derivation for accusative subjects.[25][26] There is also some evidence that the movement under consideration does not have to be overt: material of the embedded clause can preceed accusative subjects in the overt syntax. For example, the sentence in (90) is ambiguous, and on one of the readings, the temporal adverb is interpreted as modifying the embedded verb. This suggests that in such a sentence, the accusative subject is still inside of the embedded clause at PF.

(90) sajana **gəntə** xən-i:-ʃjə badm-i:jə xar-a: gə-žə
Sajana.NOM **suddenly** who-ACC-PTCL Badma-ACC see-PST say-CONV
han-a:-güi
think-PST-NEG
1. 'Sajana didn't suddenly think about anyone that they saw Badma.' *(think suddenly)*
2. 'Sajana didn't think about anyone that they suddenly saw Badma.' ***(suddenly saw)***

What is interesting is that in the same sentence we see that the accusative subject is an NPI, and it has to be in the matrix domain at LF in order to be properly licensed. This suggests that the derivation is a covert hyper-raising of the subject of the embedded clause into a higher position.

[25]Note that this is not contradicting the section 5.1 where I proposed that a noun phrase can be externally merged in order to saturate the object argument of the attitude verb. In cases with External Merge like (72) and (73) the accusative noun phrase does not correspond to any argument inside of the CP (CP has all of its arguments; its subject is nominative). The impossibility of prolepsis is the impossibility of having an externally merged noun phrase that would control some null variable inside of a CP clause.

[26]See (Bondarenko 2017) for some additional arguments against the prolepsis analysis.

So far I have only provided syntactic evidence for the following claims: (i) accusative subjects of *hanaxa* 'think' originate in the embedded clause; (ii) they move to a higher position that is at least Spec, CP. Now I turn to some the semantic evidence that supports that accusative subjects have to move to at least as high as Spec, CP. This evidence comes from *de re* readings and from indexical shifting.

While all the arguments inside of CPs usually can be interpreted both *de re* and *de dicto*, the accusative subjects are interesting in that they can only get *de re* readings and cannot be interpreted *de dicto*. I will be using the ways to test for *de re* readings developed by Deal(2018) for Nez Perce. Examples (91) and (92) show that the accusative NP, unlike a nominative one, cannot be read opaquely: the speaker has to believe that bird Garudi exists in the actual world in order to utter (91b), and that white ravens exist in the actual world in order to utter (92b).

(91) a. səsəg xan garudi **ʃubu:-n** oi so:-gu:r ni:d-ə: gə-žə
Seseg.NOM HON Garudi **bird-NOM** forest in-INSTR fly-PST say-CONV
han-a: xarin xan garudi ʃubu:-n gazar də:rə ügi: gə-žə
think-PST but HON Garudi bird-NOM Earth on NEG say-CONV
mədə-nə-b
know-PRS-1SG
'Seseg thought that bird Garudi flew through the forest, but I know that there is no bird Garudi on the Earth.'

b. #səsəg xan garudi **ʃubu:-jə** oi so:-gu:r ni:d-ə: gə-žə han-a:
Seseg.NOM HON Garudi **bird-ACC** forest in-INSTR fly-PST say-CONV think-PST
xarin xan garudi ʃubu:-n gazar də:rə ügi: gə-žə mədə-nə-b
but HON Garudi bird-NOM Earth on NEG say-CONV know-PRS-1SG
'Seseg thought of bird Garudi that it flew through the forest, but I know that there is no bird Garudi on the Earth.'

(92) büxi: turla:g-u:d xara gə-žə darima məd-ə:-güi-b
all raven-PL black say-CONV Darima.NOM know-PST-NEG
'Darima didn't know that all ravens are black.'

a. **saga:n turla:g** gər-əi xažu:-ga:r ni:də-bə gə-žə tərə
white raven.NOM house-GEN side-INSTR fly-PST2 say-CONV that.NOM
üsəgəldər han-a:
yesterday think-PST
'She thought that a white raven flew by the house yesterday.'

b. **#saga:n turla:g-i:jə** gər-əi xažu:-ga:r ni:də-bə gə-žə tərə
white raven-ACC house-GEN side-INSTR fly-PST2 say-CONV that.NOM
üsəgəldər han-a:
yesterday think-PST
'She thought of a white raven that it flew by the house yesterday.'

The example in (93) shows that the accusative NP, unlike a nominative one, has to always be specific – with the scope under the attitude predicate (see (Fodor 1970) on the distinction between opaqueness and non-specificity.).

(93) Context: A man was considering to go outside, and decided not to.

a. axanad üsəgəldər **batagana** zu:-xa gə-žə han-a:
elderly.man.NOM yesterday **moscquito.NOM** bite-FUT say-CONV think-PST
'An elderly man thought that a mosquito will bite him.'

b. #axanad üsəgəldər **batagan-i:jə** zu:-xa gə-žə han-a:
elderly.man.NOM yesterday **moscquito-ACC** bite-FUT say-CONV think-PST
'An elderly man thought of a mosquito that it will bite him.'
Comment from an informant: You can say this, but it's a bit funny - why would a man be afraid of some particular mosquito?

The example (94) shows the same thing, but in a different way. Here the context is compatible both with a non-specific and with a specific cat eating my food, and the judgments of the informants clearly show that in the sentence with the accusative subject the speaker has to have some specific cat on their mind.

(94) Context: In the morning I left some cat food near my house. In the evening I saw that the food is gone.

a. bi üdəʃə **mi:sgəi** ədjə:-jə: ədj-ə: gə-žə han-a:
1SG.NOM evening **cat.NOM** food-ACC.REFL eat-PST say-CONV think-PST
'In the evening I thought that some cat ate the food.'

b. bi üdəʃə **mi:sgəj-ə** ədjə:-jə: ədj-ə: gə-žə han-a:
1SG.NOM evening **cat-ACC** food-ACC.REFL eat-PST say-CONV think-PST
'In the evening I thought of a particular cat that it ate the food.'
Comment from the informant: In this case I suspect some cat in the eating of the food. Maybe I think it was my cat, or have some other concrete cat in mind.

Finally, consider (95):

(95) Context: Badma was walking yesterday and he saw some animals on a mountain. These were goats, but Badma mistook them for sheep.

a. badma **jama:-nu:d-i:jə** xoni-d / jama:-nu:d bəʃə gə-žə han-a:
Badma.NOM **goat-PL-ACC** sheep-PL / goat-PL NOT say-CONV think-PST
'Badma thought of goats that they were sheep / not goats.'

b. ??badma **jama:-nu:d** xoni-d / jama:-nu:d bəʃə gə-žə han-a:
Badma.NOM **goat-PL-NOM** sheep-PL / goat-PL NOT say-CONV think-PST
'Badma thought that goats were sheep / not goats.'

This sentence is constructed in such a way that it forces the reader to have the *de re* reading of goats and *de dicto* reading of sheep, it does not make sense otherwise. All informants share the inuition that (95a) is the best sentence for such a context. Many do not accept (95b) at all, but some can tolerate it. I assume that it is probably some kind of competition that makes (95b) unappealing, since in other context speakers are able to interpret nominative subjects *de re*.

The fact that accusative subjects are obligatorily interpreted *de re* indicates that at the LF they are in a position that is higher than the source of the intensionalization. Depending on what semantics we assume for attitude verbs, this position could be different. If we assume that there is

a rule like Intensional Functional Application (von Fintel & Heim 1997-2018: 13) that combines the attitude verb and a CP, then the accusative subject has to be higher than the verb at LF. If we assume a system as in (Keshet 2008), in which the intensional operators quantificational force is split from its intensional force through the use of a special operator $\wedge$ (Montague 1970), then the accusative subject has to be as high as Spec, CP (but not necessarily further). In the decompositional (Kratzerian) system adopted in this paper, the accusative subject also has to be at least as as high as Spec, CP, since the source of the intensionality is the complementizer.

Additional piece of data comes from the phenomenon of indexical shifting. In Barguzin Buryat indexical elements inside CP clauses can shift or not shift quite freely; shifted and non-shifted indexicals can co-exist within a single CP (Podobryaev, p.c.). There is one big restriction on indexical shifting though: accusative subjects can never shift. This is illustrated in (96): the accusative subject can refer only to the speaker, but not to the matrix subject.

(96) **CPs: Accusative subjects never shift**

a. badma **namajə** sajan-i:jə zura-xa gə-žə han-a:
Badma.NOM **1SG.ACC** Sajana-ACC draw-FUT say-CONV think-PST
'Badma$_k$ thought that I$_{speaker/*k}$ will draw Sajana.'

b. badma **bi** sajan-i:jə zura-xa-**b** gə-žə han-a:
Badma.NOM **1SG.NOM** Sajana-ACC draw-FUT-**1SG** say-CONV think-PST
'Badma$_k$ thought that he$_{k/speaker}$ will draw Sajana.'

While it is possible to account for these facts by the use of a monster operator (Podobryaev 2014, Sudo 2012, Shklovsky & Sudo 2014, a.o.), I think its use might be not necessary for Barguzin Buryat. If accusative subjects are always interpreted above the source of the intensionalization, we might expect that they are not only obligatorily interpreted with respect to the actual world, but also are obligatorily interpreted with respect to the context of utterance.

Thus, the interpretation of accusative subjects seems to converge with the syntactic diagnostics: these noun phrases have to move at least as high as Spec, CP. According to the analysis I have proposed though, accusative subjects move higher: they become arguments of the attitude verb. Is this part of the proposal justified then? I think there might be some evidence that accusative subjects move into the object position, and it comes from the passivization.

Buryat passivization usually involves promoting an object argument (the argument that would have been accusative in a transitive configuration) into the subject position (Privoznov, to appear). There is no long-distance passivization in Buryat:

(97) a. sajana badma namajə xar-a: gə-žə məd-ə: / han-a:
Sajana.NOM Badma.NOM 1SG.ACC see-PST say-CONV know-PST / think-PST
'Sajana found out / thought that Badma drew me.'

b. *bi$_1$ sajan-a:r / sajana-da badma t$_1$ xar-a: gə-žə
1SG.NOM Sajana-INSTR / Sajana-DAT Badma.NOM see-PST say-CONV
məd-gd-ə-b / hana-gd-a:-b
know-PASS-PST-1SG / think-PASS-PST-1SG
Intended: 'Sajana found out / thought that Badma drew me.'[27]

[27]Marginally acceptable under the causal passive reading (see (Privoznov, to appear)): 'I found out through Sajana that Badma drew (someone).'

The sentence in (97b) is a failed attempt at the long-distance passivization of (97a): the direct object of the embedded CP clause cannot be promoted into the matrix subject position.

Accusative subjects, however, can be promoted into the matrix subject position. Consider the pair of (96a) repeated as (98a) together with its passivized version in (98b).

(98) **Accusative subjects of CPs can be promoted into the matrix subject position**

a. badma **namajə** sajan-i:jə zura-xa gə-žə han-a:
Badma.NOM **1SG.ACC** Sajana-ACC draw-FUT say-CONV think-PST
'Badma$_k$ thought that I$_{speaker/*k}$ will draw Sajana.'

b. **bi**$_1$ badma-da t$_1$ sajan-i:jə zura-xa gə-žə
1SG.NOM Badma-DAT Sajana-ACC draw-FUT say-CONV
hana-**gd**-a:-**b**
think-**PASS**-PST-**1SG**
'Badma$_k$ thought that I will draw Sajana.' (lit. 'About me it was thought /recalled by Badma that I will draw Sajana.')

In (98b) we know that the nominative subject was a former accusative subject (as opposed to a former nominative subject) because there is no agreement on the embedded verb: while nominative subjects agree with the embedded verb, accusative ones do not, (96). We also know that the former accusative subject is the argument that has been promoted into the matrix subject position, since it has triggered agreement with the passivized verb.

Under the analysis proposed in this paper, it is not surprising that accusative subjects can be promoted into the matrix subject position, because they actually become objects of the attitude verb. On alternative analyses the possibility of such passivization is unexpected. In this language only objects get to be promoted into the subject position, so why does a non-argument of the verb suddenly get a chance to be promoted? I don't see an easy non-stipulative way to explain it.

There is one fact about accusative subjects that I haven't yet mentioned: accusative subjects can also occur in nominalized clauses:

(99) sajana [*badma **/ badm-i:jə / badm-i:n** tərgə əmdəl-ə:ʃ-i:jə] han-a:
Sajana Badma.NOM **/ Bada.ACC / Badma-GEN** cart break-PST think-PST
'Sajana *thought **/ remembered ("thought of")** Badma's breaking the cart.'

My analysis of accusative subjects in CPs should not be extended to nominalizations. The main reason for this is that while accusative subjects of CPs with *hanaxa* 'think' behave as arguments of the verb, accusative subjects of nominalizations do not. In (100) I present an attempt to promote an accusative subject of the nominalization in (100a) to the matrix subject position, (100b). The coreference of the matrix subject requires the reflexive marking on the nominalization, but independent of the marking on the nominalization (possessive, reflexive or plain accusitive) the result is ungrammatical, (100).[28]

[28]For some other attitude verbs the structure as in (100b) is grammatical. For example, *mədəxə* 'know' is such a verb:

(i) **bi**$_1$ badma-da t$_1$ tərgə əmdəl-ə:ʃ-ə: mədə-**gd**-ə:-**b**
bi.NOM Badma-DAT cart break-PART-REFL know-**PASS**-PST-**1SG**
'Badma found out about my (the speaker's) breaking the cart.' (lit. 'I was found out by Badma to have broken

(100) **Accusative subjects of NMNs cannot become matrix subjects**

a. badma **namajə** tərgə əmdəl-ə:ʃ-i:jə-(mni) han-a:
Badma.NOM **1SG.ACC** cart break-PART-ACC-(1SG) think-PST
'Badma remembered my (the speaker's) breaking the cart.'

b. *$\mathbf{bi}_1$ badma-da t_1 tərgə əmdəl-ə:ʃ-ə:/i:jə(mni) hana-**gd**-a:-**b**
bi.NOM Badma-DAT cart break-PART-REFL/ACC(1SG) think-**PASS**-PST-**1SG**
Intended: 'Badma remembered my (the speaker's) breaking the cart.' (lit. 'About me it was remembered by Badma (my) breaking the cart.')

This is expected if the whole nominalization is the object of the attitude verb, and not just its subject. Some other properties of nominalizations are also expected under the current analysis. For example, the subjects of nominalizations, unsurprisingly, are always *de re*, (101), and indexicals as subjects of nominalizations never shift, (102). This holds independently of whether the nominalization's subject is accusative or genitive.[29]

(101) a. #səsəg xan garudi **ʃubu:n-ai** oi so:-gu:r ni:d-ə:ʃ-i:jə han-a:
Seseg.NOM HON Garudi **bird-GEN** forest in-INSTR fly-PART-ACC think-PST
xarin xan garudi ʃubu:-n gazar də:rə ügi: gə-žə mədə-nə-b
but HON Garudi bird-NOM Earth on NEG say-CONV know-PRS-1SG
'Seseg remembered bird Garudi's flying through the forest, but I know that there is no bird Garudi on the Earth.'

b. #səsəg xan garudi **ʃubu:-jə** oi so:-gu:r ni:d-ə:ʃ-i:jə han-a:
Seseg.NOM HON Garudi **bird-ACC** forest in-INSTR fly-PART-ACC think-PST
xarin xan garudi ʃubu:-n gazar də:rə ügi: gə-žə mədə-nə-b
but HON Garudi bird-NOM Earth on NEG say-CONV know-PRS-1SG
'Seseg remembered bird Garudi's flying through the forest, but I know that there is no bird Garudi on the Earth.'

(102) **Subjects of NMN never shift**

a. badma **namajə** tərgə əmdəl-ə:ʃ-i:jə-(mni) han-a:
Badma.NOM **1SG.ACC** cart break-PART-ACC-(1SG) think-PST
'Badma$_k$ remembered my$_{speaker's/*k's}$ drawing of Sajana.'

b. badma **mini:** tərgə əmdəl-ə:ʃ-i:jə-(mni) han-a:
Badma.NOM **1SG.GEN** cart break-PART-ACC-(1SG) think-PST
'Badma$_k$ remembered my$_{speaker's/*k's}$ drawing of Sajana.'

The question then arises: are accusative subjects of nominalizations any different from genitive subjects? Do they undergo movement at all? Unfortunately, with the verb *hanaxa* 'think' NPI licensing and anaphor binding cannot be used as diagnostics for movement: genitive and accusative

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the cart.')

Some such cases are discussed in (Bondarenko 2017). I currently do not know whether such cases should be analyzed as instances of passivization or as control structures.

[29]The subject of the nominalization cannot be nominative, see (99).

NPI pronouns have indistinguishable morphological forms; the nominalization under *hanaxa* does not seem to form a binding domain, so possessive anaphors of both gentive and accusative subjects can be bound by the matrix subject. Sensitivity to the Coordinate Structure Constraint seems to suggest that accusative subjects of nominalizations do undergo movement: it is not possible to have an accusative subject only in one of the conjuncts, (103).

(103) a. xübü:n [$_{NMN}$**badm-i:n** ʃənə na:danxai aba-x-i:jə] ba [$_{NMN}$**tumən-əi** ʃənə
boy.NOM **Badma-GEN** new toy buy-FUT-ACC and **Tumen-GEN** new
nom aba-x-i:jə] han-a:
book buy-FUT-ACC think-PST
'The boy remembered Badma's (plan /promise) to buy a new toy and Tumen's (plan / promise) to buy a new book.'

b. xübü:n [$_{NMN}$**badm-i:jə** ʃənə na:danxai aba-x-i:jə] ba [$_{NMN}$**tumən-i:jə** ʃənə
boy.NOM **Badma-ACC** new toy buy-FUT-ACC and **Tumen-ACC** new
nom aba-x-i:jə] han-a:
book buy-FUT-ACC think-PST
'The boy remembered Badma's (plan /promise) to buy a new toy and Tumen's (plan / promise) to buy a new book.'

c. *xübü:n [$_{NMN}$**badm-i:jə** ʃənə na:danxai aba-x-i:jə] ba [$_{NMN}$**tumən-əi** ʃənə
boy.NOM **Badma-ACC** new toy buy-FUT-ACC and **Tumen-GEN** new
nom aba-x-i:jə] han-a:
book buy-FUT-ACC think-PST
Intended: 'The boy remembered Badma's (plan /promise) to buy a new toy and Tumen's (plan / promise) to buy a new book.'

d. *xübü:n [$_{NMN}$**badm-i:n** ʃənə na:danxai aba-x-i:jə] ba [$_{NMN}$**tumən-i:jə** ʃənə
boy.NOM **Badma-GEN** new toy buy-FUT-ACC and **Tumen-ACC** new
nom aba-x-i:jə] han-a:
book buy-FUT-ACC think-PST
Intended:'The boy remembered Badma's (plan /promise) to buy a new toy and Tumen's (plan / promise) to buy a new book.'

If accusative subjects of nominalizations do move, under the current analysis they do not move into the argument position of the matrix verb like the accusative subjects of CPs. I leave the questions about why they move if they move, where to, and how do they get accusative case for the future research.

To sum up, in this section I discussed the construction with a CP clause under *hanaxa* 'think' with an accusative subject, and argued that this accusative subject undergoes hyper-raising into the matrix clause and saturates the object argument x of the attitude verb. If this analysis is correct, then we have yet another case where *hanaxa* 'think' both combines with a CP and saturates its internal argument slot.

5.3 Nominalized CPs

The nominalizations I have been discussing so far were nominalizations of the AspP level. In addition to these, Buryat also has nominalized CP clauses:

(104) **Nominalized CP (subject position)**

badma üstər nom unʃ-a: **g-ə:ʃə** buru:
Badma.NOM yesterday book read-PST **say-PART.NOM** false

'That Badma read a book yesterday is false.'

Nominalized CPs look like a finite clause embedded under the complementizer *gə* 'say' with the participial morphology and case marking on it. My account of the factivity alternation with *hanaxa* 'think' makes a prediction about the interpretation of nominalized CPs under this verb. Since complementizers are sources of quantification over possible worlds, there should be no factive inference about the proposition embedded by the complementizer. This prediction is borne out – no factive inference about the proposition holds:

(105) Context: There was a rumor that the cat ate the fish, and Dugar remembers this rumor, but it is not true.

dugar mi:sgəi-n zagaha ədj-ə: g-ə:ʃ-i:jə han-a:, xarin mi:sgəi zagaha
Dugar.NOM cat-GEN fish eat-PST say-PART-ACC think-PST but cat.NOM fish
ədj-ə:-güi
eat-PST-NEG

'Dugar remembers (the rumor) that the cat ate the fish, but the cat didn't eat the fish.'

The verb though is still translated as 'remember'. As one can tell from the context (suggested to me by an informant), what Dugar remembers is a rumor, or a claim that was previously made. The presupposition of the attitude verb is still there, it just applies to a different individual - to the noun whose content is the embedded proposition. Thus, saying explicitly that the proposition p was not previously mentioned leads to an infelicitous sentence:

(106) #mi:sgəi zagaha ədj-ə: gə-žə xən-ʃjə xəzə:-ʃjə han-a:-güi, (xarin)
cat.NOM fish eat-PST say-CONV who-PTCL when-PTCL think-PST-NEG but
dugar mi:sgəi-n zagaha ədj-ə: g-ə:ʃ-i:jə han-a:
Dugar.NOM cat-GEN fish eat-PST say-PART-ACC think-PST
'Noone has ever thought that the cat ate the fish, (but) Dugar remembered (the rumor) that the cat ate the fish.'

The observed inference is a presupposition: it survives in questions (107), and under negation, (108).

(107) #badma tərgə əmdəl-ə: gə-žə xən-ʃjə xəzə:-ʃjə han-a:-güi.
Badma.NOM cart break-PST say-CONV who-PTCL when-PTCL think-PST-NEG
sajana badm-i:n tərgə əmdəl-ə: g-ə:ʃ-i:jə han-a: gü?
Sajana.NOM Badma-GEN cart break-PST say-PART-ACC think-PST Q
'Noone has ever thought that Badma broke the cart. Do you think Sajana remembers (the rumor) that Badma broke the cart?'

(108) #badma tərgə əmdəl-ə: gə-žə xən-ʃjə xəzə:-ʃjə han-a:-güi.
Badma.NOM cart break-PST say-CONV who-PTCL when-PTCL think-PST-NEG
sajana badm-i:n tərgə əmdəl-ə: g-ə:ʃ-i:jə han-a:-güi
Sajana.NOM Badma-GEN cart break-PST say-PART-ACC think-PST-NEG
'Noone has ever thought that Badma broke the cart. Sajana remembered (the rumor) that Badma broke the cart.'

Nominalized CPs of a similiar kind exist in other languages as well. The closest example to Buryat that I know of is Korean embedded clauses discussed in (Bogal-Allbritten & Moulton 2017). I illustrate the familiarity-with-the-proposition requirement for the Buryat nominalized CPs with one of the contexts developed in (Bogal-Allbritten & Moulton 2017). In (109) the context is such that it supports both the use of a simple CP clause (109a) and the use of a nominalized CP (109b). This is so because the mother both thinks that Bair did his homework and remembers his claim that he did the homework.

(109) Context:

bair əži:-d-ə: gər-əi daba:ri x-ə:-b gə-žə xəl-ə:
Bair.NOM mother-DAT-REFL house-GEN task do-PST-1SG say-CONV tell-PST

'Bair told his mother that he did the homework.'

a. bair-ai əži: tərə gər-əi daba:ri x-ə: **gə-žə** hana-na
Bair-GEN mother that.NOM house-GEN task do-PST **say-CONV** think-PRS
'Bair's mother thinks that he did the homework.'

b. bair-ai əži: bair-a: gər-əi daba:ri x-ə: **g-ə:ʃ-i:jə**
Bair-GEN mother Bair-REFL house-GEN task do-PST **say-PART-ACC**
hana-na
think-PRS
'Bair's mother remembers (the claim) that her Bair did the homework.'

In (110) the context is constructed in such a way that the two speakers, A and B, are familiar with Bair's claim, but the mother (the matrix subject) is not. While she might think that Bair did his homework (based on the indirect evidence), she cannot remember his claim that he did the homework: he never uttered such a claim in her presence.

(110) Context:
A: Bair told me that he had done the homework, but he didn't say anything to his mother. Do you believe him?
B: I don't know, but Bair's mother went into his room and saw a few completed tasks...

a. bair-ai əži: tərə gər-əi daba:ri x-ə: **gə-žə** hana-na
Bair-GEN mother that.NOM house-GEN task do-PST **say-CONV** think-PRS
'Bair's mother thinks that he did the homework.'

b. #bair-ai əži: bair-a: gər-əi daba:ri x-ə: **g-ə:ʃ-i:jə**
Bair-GEN mother Bair-REFL house-GEN task do-PST **say-PART-ACC**
hana-na
think-PRS
'Bair's mother remembers (the claim) that her Bair did the homework.'

The data above raise the question of what exactly is the individual that the factive presupposition in this case applies to. I would like to suggest that in case of Buryat, there is actually a silent noun like 'rumor' or 'claim' present in the structure. I have three pieces of evidence supporting this hypothesis. First, while AspP level nominalizations and simple CPs cannot be substituted by nominal proforms, nominalized CPs can:

(111) badma sajan-i:n bulj-a: **g-ɔ:ʃ-i:jɔ** han-a:, ojuna baha
Badma.NOM Sajana-GEN win-PST **say-PART-ACC** think-PST Ojuna.NOM also
tərən-i:jɔ han-a:
that-ACC think-PST
'Badma remembered (the rumor) that Sajana won, and Ojuna also remembered it (= the rumor).'

I take it as evidence that the nominalized CP actually contains a noun. Second, while this noun cannot be modified by most nominal modifiers, it can be modified by a possessor. In (112) we see that both the subject of the CP denoting an agent and an external possessor can co-occur in one sentence. This is not possible in structures with AspP level nominalizations, (113).

(112) **sajan-i:n** darim-i:jɔ maʃi:n-a:r buʃu: jab-a: g-ɔ:ʃɔ-n' ünən gü?
Sajana-GEN Darima-ACC car-INSTR fast go-PST say-PART.NOM-3 true Q
'Is Sajana's (claim) that Darima drove the car very quickly correct?

(113) ***sajan-i:n** darim-i:jɔ maʃi:n-a:r buʃu: jab-a:ʃa-n' ünən gü?
Sajana-GEN Darima-ACC car-INSTR fast go-PST-PART.NOM-3 true Q
Intended: 'Is Sajana's Darima driving the car very quickly a good thing / true?[30]

I think that this suggests that there is an actual noun in (112) which can be modified by a possessor that is not related to the material of the embedded clause. The third piece of evidence comes from accusative subjects. In most cases the accusative subjects are possible in the presence of a transitive matrix verb and impossible otherwise. For example, the AspP nominalization in the subject position with an accusative subject is ungrammatical, since there is no source of accusative:

(114) xübü:n-**ɔi** / *xübü:n-**i:jɔ** xoto oʃo-hon-i:n' hain
boy-**GEN** / boy-**ACC** city go-PART2-NOM.3 good
'The boy's going to the city (that has already happened) is good.'

Suprisingly, nominalized CPs in the subject position can have accusative subjects:

(115) badm-**i:n** / badm-**i:jɔ** tərgɔ ɔmdɔl-ɔ: g-ɔ:ʃɔ-n' buru:
Badma-**GEN** / Badma-**ACC** cart break-PST say-PART.NOM-3 false
'(The rumor) that Badma broke the cart is false.'

This becomes less mysterious when we look at similiar configurations where an overt noun like *zuga:* 'rumor' seems to be the source of the accusative case marking on the subject of the CP:

[30] *Ünen* 'truth' can occur as a predicate both with nominalized CPs and with nominalized AspPs. In the later case though it often means that the event is a good one with respect to morality.

(116) badm-**i:n** / badm-**i:jə** tərgə əmdəl-ə: gə-žə zuga: buru:
Badma-**GEN** / Badma-**ACC** cart break-PST say-CONV rumor.NOM false
'(The claim) that Badma broke the cart is false.'

I propose that some nouns with content (like *zuga:* 'rumor') are minimal nominalizations – nominalizations of the lexical verb.[31] They denote results of the events, products of the corresponding attitude. Being eventive in nature, they can attach a CP that will specify their content (116). They also retain the capability of the attitude verb to assign accusative case. In (115) there is such a noun covertly present in the structure. It makes it possible for the subject of the CP to surface as accusative in a context where no other source of accusative is present.[32]

To sum up, in this section I have shown that my analysis correctly predicts the behavior of the nominalized CPs under *hanaxa* 'think': there is no factive inference about the embedded proposition p, however there is a factive inference about the noun denoted by the nominalized CP. I have shown some evidence that suggests that there might be an actual silent noun in this structure with a meaning like 'rumor' or 'claim'. The existence presupposition of the attitude verb holds of such a noun and requires that there was some previous rumor / claim in the context before the thinking event such that the individual denoted by the matrix subjects thinks about this rumor / claim.

6 Alternatives & open questions

This section discusses some potential alternatives to the analysis presented in this paper, as well as some important open questions.

One of the questions about potential alternatives is the following: is the Kratzerian (decompositional) approach to the semantics of attitude verbs (Kratzer 2006, a.o.) a crucial ingredient of the proposal, or would some modified Hintikkan semantics for *hanaxa* 'remember' do an equally good job at explaining the factive alternation in Buryat? I believe that a modified Hintikkan approach together with the split of the quantificational force of intensional operators from their intensional force (Keshet 2008) could account for the majority of data discussed in this paper. Here is how the semantics of *hanaxa* 'remember' would look under the modified Hintikkan implementation:

(117) $[\![\textit{hanaxa}]\!]^{w,g} = \lambda p_{st} \lambda x_e \lambda e_v$: LB($\tau$(x)) <LB($\tau$(e)). think(x)(e) & e is in w & $\forall$w' $\in$ $DOX_w^{Exp(e)}$ $\rightarrow$ p(w') = 1.

The attitude verb would take a proposition, an individual argument corresponding to the object of thought (= res argument; =what is being thought about), and an event argument. The presupposition of the verb would remain exactly as I have formulated it before. The verb would return true iff the event e is an event in the actual world w of thinking about x, and in all worlds compatible with the beliefs of the experiencer of e (to be introduced by Event Identification), p is true. Under this approach, the CP would denote a proposition, and combine as the first argument of the verb. The

[31] For many nouns with content this seems to be a justified assumption. For example, for *zuga:* 'rumor' there is a verb *zuga:lxa* 'talk'.

[32] I assume that there are some allomorphy rules that require the CP that is combined with a silent noun to bear the nominal (participial + case) morphology. There is no such restriction when the noun is overtly present (participial morphology on the complementizer is possible in that case though; case morphology is not).

nominalization would combine as the individual argument of the verb (x). Since the presupposition of the verb is about the x argument, it will be visible only when the x argument is saturated by a nominal phrase. Thus, the solution to the main factivity puzzle can be implemented under this approach as well.

This approach would crucially need the split intensionality system as introduced by Keshet(2008) in order to account for the behavior of accusative subjects being obligatorily interpreted *de re*. Under this approach, it would be needed to have a a special operator ($\wedge$) in C that would allow a phrase in the Spec, CP position to be interpreted above the domain of intensionalization. Note that the decompositional approach do not need to assume such an operator, since, according to it, both quantificational and intensional force come from the complementizer.

But I believe that the only data that this approach handles significantly worse than the decompositional framework does concerns the following aspect of accusative subjects: if the covert hyper-raising analysis that I propose is indeed correct, modified Hintikkan approach cannot capture it without additional stipulations, while in the Kratzerian framework it receives a straighforward analysis. Recall that the main motivation for the covert hyper-raising was passivization: Buryat does not in general permit long-distance passivization, yet accusative subjects can be promoted into the matrix subject position, suggesting that they have become true matrix objects in the course of their derivation. Under the decompositional analysis, movement into the matrix object position becomes possible due to the fact that after the lambda abstraction takes place, the type of CP becomes identical to the type of the matrix verb, and they can combine via Generalized Predicate Modification. Under the modified Hintikkan approach, CPs denote propositions, and thus cannot combine with the verb in such a way. As far as I can see, there is no simple way to implement hyper-raising under the modified Hintikkan approach. A possible option (sketched out in (Deal 2018)) is to use vacuous type-shifting: the first argument of the verb is always of the type <e,<s,t>>. When no hyper-raising occurs, the proposition that the verb takes as a complement (<s,t>) is vacuously shifted to the type (<e,<s,t>>). Resorting to such a type-shifting seems to me to be not much better than an ambiguity approach. Thus, if the reasoning above is correct and the syntax has to indeed involve hyper-raising, then I believe this presents an argument in favor of the Kratzerian approach to the semantics of attitude predicates.

Another question that arises is: how does my approach compare to that of Özyıldız(2017), who also derives factivity alternations in semantic composition? First, note that the Buryat data discussed in this paper is not identical to the Turkish data discussed in the Özyıldız's paper. As I have shown, the factivity inference in Buryat is present with all nominals: nouns, event (AspP) nominalizations, propositional (CP) nominalizations. The alternation that is shown in Özyıldız's paper concerns CP-level (propositional) nominalizations. This makes the comparison of the two approaches a bit difficult: Özyıldız(2017) treats both Turkish CPs and nominalizations as propositions, while I definitely cannot treat all the nominals undergoing the factive alternation in Buryat in such a way. Thus, Özyıldız's approach cannot be extended to the Buryat case directly.

Özyıldız's (2017) proposal is based on the following crucial ingridients: (propositional) nominalizations undergo movement; the binder created in this movement binds not only the trace of the nominalization, but also a situation-denoting pronoun that is part of the covert definite description that is the *res*-argument of the attitude verb. The part of this proposal which I find most troublesome for Buryat is that the *res*-argument of the attitude verb is a definite description in the factive cases. As I have shown in the section 3.3, the eventive nominalization, which I assume to be the *res*-argument (individual argument x), does not have to be definite, yet it gives rise to the factive

presupposition. Thus, I do not think that an analysis that assumes the *res*-argument to be a definite description would be on the right track in the case of Buryat. I leave a further comparison of the two approaches for the further research. One of the open questions in this domain is: is the analysis for the nominalized CPs in Buryat extendable to Turkish (could Turkish nominalizations actually be silent nouns with CP complements)?

There is another very important open question, which concerns embedded questions. It turns out that the verbs that exhibit factivity alternations — both in Buryat and in Turkish (Özyıldız, p.c.) — become factive when they take interrogative CP clauses. Here is an example from Buryat:

(118) bi badma tamxi tata-dag gü gɔʒɔ hana-na-b
1SG.NOM Badma.NOM tobacco smoke-HAB Q COMP think-PRS-1SG
'I am recalling (the true answer to the question) whether Badma smokes.'

In (118) we see a CP with an embedded question, and suddenly the verb becomes factive: it denotes an event of recalling the true answer to the question denoted by the CP. On the one hand, this provides a further argument against the homophony hypothesis: it is even less plausible that there are separate lexical entries, *hanaxa*$_1$ and *hanaxa*$_2$, such that one of them selects only for indicative CPs, while another selects for interrogative CPs and nominals of different kinds. Arguing for the homophony in this case seems like missing the fact that it is the type of the complement that determines factivity of the verb.

On the other hand, why do embedded interrogative CPs give rise to factivity? How does their composition with the verb proceed? I can imagine the following tentative approach to this question within the decompositional framework: maybe in cases like (118) there is a silent noun like 'answer' in the structure, and the CP, which in this case denotes the set of individuals whose content is the true answer to the embedded question, is modifying that noun. This would mean that the silent 'answer' is the individual argument that the presupposition applies to and that has to exist before the thinking event. I leave the analysis of cases like (118) for the further research.

There is also a cross-linguistic question that arises in light of my analysis of *hanaxa* 'think': can 'think' in other languages also mean 'remember' when it takes nominal complements? If yes, can some part of my analysis for Buryat extend to other languages? It seems that at least for some languages, it is true that 'think' can have 'remember' uses with nominal complements (S. Iatridou suggests (p.c.) that this happens in Greek with past perfective of 'think', for example). While a lot more research is required to see how extendable my approach is to these cases, I would suggest that other languages might share with Buryat that their 'think' has an internal argument with the "verb-of-use" presupposition associated with it, but that their way of combining CPs with the verb might be different from the one I have argued for for Buryat.

There is another open question, which is a more general question for the decompositional approach to the semantics of attitude verbs: if CPs combine by restricting an argument of the verb, why is it not possible to restrict an argument of the verb by several CP clauses in the same way as it is possible to attach several adverbs to predicates? As far as I know, an answer to this question has not yet been proposed. My own hunch is the following: events of attitude predicates can have only one proposition as their Content. What kind of an (ontological) restriction is that and why should it hold? I think that this an important open question for the Kratzerian enterprise.

Another potential line of further research has to do with hyper-raising to object. As far as I know, there is no answer to the following question: why do some languages allow hyper-raising,

while others do not? What (syntactic, semantic) properties of the language determine whether this derivation is available? I think that the proposal outlined in this paper presents a potential hypothesis: the type of the CP determines whether hyper-raising is possible from such a CP. If the CP is a property of events and combines with the verb by modifying its eventuality argument, then, in case this matrix verb has an internal individual argument, it should be possible to raise the material from inside the CP into this object position. If, however, the CP denotes an individual or a property of an individual, it cannot combine via Event Identification, and combines by saturating or restricting the individual (internal) argument of the verb. In such a case, the object position is occupied; there is no position for the material of the embedded clause to raise to. Cross-linguistic research on the types of complementizers and corresponding CPs in different languages would be needed in order to evaluate whether this hypothesis is on the right track.

7 Conclusion

In this paper I discussed a case of factivity alternation in Bagruzin Buryat: the verb *hanaxa* is naturally translated as 'think' when it combines with indicative CPs, and as 'remember' when it combines with nominal complements (nouns, AspP nominalizations, CP nominalizations).

I have shown that this difference in translation corresponds to the existence of a presupposition in sentences with nominal complements. I have argued that this presupposition is always present with *hanaxa*, but becomes visible only when the verb combines with a nominal. This is not a standard factive presupposition: it is not a presupposition about some proposition being true. This is a presupposition that becomes visible due to two things: (i) a 'verb-of-use' presupposition of the verb about its internal argument (x); (ii) different ways of combining CPs and nominals with attitude verbs: CPs combine via Event Identification, by modifying the event argument of the attitude verb; nominals combine via Functional Application, by saturating the internal argument to which the presupposition of the verb applies.

I have implemented this proposal in the decompositional approach to the semantics of attitude predicates (Kratzer 2006, Moulton 2015, Bogal-Allbritten 2016, a.o.), and have shown some morphosyntactic arguments in its favor, as well as some predictions that are born out. This proposal contributes to a more general question "How do factive alternations arise?" by arguing that sometimes these alternations arise just because two different types of complements do not combine "through" the same argument of the attitude verb.

8 References

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