Morphological alignment in Saru Ainu:
A direct-inverse analysis

Elia Dal Corso
615195@soas.ac.uk

Abstract
The Saru dialect of the Ainu language displays a full system of person agreement affixes, that constitutes a fundamental part of the verb's morphological structure. Although this agreement system can be said to be one of the most studied features of Saru Ainu, there is not yet, at the best of my knowledge, a unitary approach to account for its peculiarities. Among these peculiarities, the uneven formal variation of affixes to indicate subject and object referents depending on grammatical person is perhaps the most striking one. The analysis in this article stems from previous research on this topic, and attempts to propose that Saru Ainu's agreement system represents a case of direct-inverse alignment. This direct-inverse approach can account for the apparent discrepancies in the formal realization of affixes and it gives a smoother picture of morphological marking of referents.

Keywords: morphology; alignment; Ainu; person; grammatical function; transitivity; inverseness

1. Introduction
1.1. The Ainu language
Ainu is an endangered indigenous language of Japan, spoken in its northernmost island of Hokkaidō. Other varieties of Ainu were also spoken throughout Sakhalin and the Kuril Islands in today's Russia, though today the Ainu language survives just in its Japanese variety. Hokkaidō Ainu is believed to have less than 20 native speakers remaining (Vovin, 1993; Bradley, 2007). The other two varieties of the language (Sakhalin and Kuril Ainu) are extinct today. Hokkaidō Ainu can be further subdivided into smaller dialects according to differences in lexicon, morphology and, more rarely, syntax (Bugaeva, 2004:7). Ainu has no acknowledged genetic relation with any of the neighboring languages of Japan or continental Russia. Although scholars have proposed different categorizations for the language[1], it is still difficult to obtain a reliable proof for these theories.

This article focuses on the Saru dialect of Ainu (henceforth SA). This is included among the Southern Hokkaidō dialects and it was originally spoken along the Saru river, from which it takes its name. A corpus of recorded and transcribed materials[2] in this dialect is used as the main resource for this study. These materials were collected through elicitation from native speakers by Tamura Suzuko in the 1950s and 1960s during fieldwork in Hokkaidō.

1.2. Aims and structure of the paper
With this paper I propose a unitary description of morphological alignment in SA. The speculation on Ainu alignment has not gone far in the past literature, so the kind of alignment displayed by the language is still an unsettled matter. The main observations on alignment have been made by Bugaeva (2006). She considers Ainu's morphological alignment looking at the realization and distribution of verbal personal affixes. Although this contribution is

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[1] See for example proposals by Street, 1962; Shafer, 1965; Vovin, 1993; Greenberg, 2000-2002.
[2] Tamura, Suzuko. Ainu *go onsei shiryō*. online resource –http://dspace.wul.waseda.ac.jp/dspace

important as it provides a preliminary understanding of the nature of Ainu alignment, the author does not linger on this subject, with many issues left unsolved. Following from Bugaeva's observations, I then carry the analysis forward with the aim of enhancing the description of SA's morphological alignment.

I should point out that this paper is not concerned with syntactic alignment. This kind of alignment is reportedly sensitive to particular syntactic operations, such as control, reflexive binding or argument gapping in coordination among others (Dixon, 1979; Manning, 1996). Following Dixon and Manning, I assume that there are different levels of structure within one language. These different levels may be sensitive to different kinds of alignment and, therefore, are better treated separately. One of these levels (also assumed in Dixon's and Manning's framework) is the morphological level. On this level of structure, alignment is sensitive to the formal realization of verbal arguments. When looking at SA from this perspective, a number of discrepancies arise in the formal realization and use of verb personal affixes. This appears to depend mostly on grammatical person, seemingly suggesting different kinds of alignment for each one of them (see §2.2. and §2.3). In addressing these discrepancies, I pay particular attention to the linear order of verb arguments, thematic roles, and referencing of speech act participants. The interaction of these features in connection to morphological alignment eventually explains the apparently unexpected formal realization of arguments witnessed in SA. Moreover, the outcome of this approach is a proposal for the existence of a morphologically direct-inverse alignment in this dialect (see §4). This direct-inverse approach has the ultimate value of bringing all grammatical persons together, and it gives a smoother picture of alignment. To the best of my knowledge, this has never been proposed before for SA. The analysis contained in this paper is thus useful to deepen our knowledge about the Ainu language altogether and, more specifically, it is a valuable contribution to the speculation on Ainu's morphological alignment. Moreover, from a wider perspective, this work may enhance our understanding of inverseness as it is found cross-linguistically. The case of SA, in fact, deviates in many aspects with regard to the alleged prototypical characteristics of inverseness. This new contribution could improve the typological profile of inverseness, eventually refining our approach to other inverse systems around the world.

The paper is organized as follows. In §2. I present SA's personal affixes after I introduce the verb classification I assume throughout the analysis. In this section I also present and discuss briefly Bugaeva's observations on alignment, setting the background information necessary to develop my own analysis. I dedicate §3. to highlighting faults and weakness of previous proposals and to introducing new tools to analyze alignment. In §4. I discuss the direct-inverse approach to SA's alignment, while in §5. I summarize my findings and underline some issues that remain unclear.

2. Agreement and alignment
2.1. Verb classes
Before I discuss how personal agreement is marked in SA, it is necessary to give a brief introduction of the verb classes that are distinguished within the language. In descriptive grammars, Ainu verbs are organized into separate classes according to their valency. The basic two-way distinction that separates intransitives and transitives is expanded in Ainu to also include ditransitives and complete [3] verbs (Tamura, 2000: 41-42). This is not a

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[3] Following Tamura, I here use the term 'complete verb' based on the translation of 完全動詞 *kanzen dōshi*, which is the accepted term used in Japanese literature on Ainu.

prerogative of SA, rather it appears to be the same also for other dialects or varieties, for which the same terminology is used (Murasaki, 1976[4]; Refsing, 1986; Tamura, 2010). Verb valency interacts with the category of grammatical person, as there may be different realizations of the same personal affix depending on whether it marks the S, A or O argument of the verb. Since here I am concerned specifically with the formal realization of personal affixes, throughout my argumentation I assume that verb valency is fundamental for the description of morphological alignment.

Complete verbs (as their name suggests) do not subcategorize for any argument ('verb' < - >). Complete verbs, among the other types of verb, are few in number and describe states or conditions, especially related to time and the weather.

> (1) *Orano, sir-kunne   kor…*
>   and   condition-be.dark when
>   'And, when the night came…' (Tamura, 1985: 6)

> (2) *Me-an.*
>   cold-be.PC
>   'It is cold.' (Tamura, 2000: 41)

Intransitive verbs subcategorize for just one argument – the subject ('verb' <SUBJ>[5]).

> (3) *A-ekasi […] Ø-soyne.*
>   4SUBJ-father   3SG.SUBJ-go.out
>   'My father […] went out.' (Tamura, 1985: 48)

Transitive verbs subcategorize for a total of two arguments – the subject and the primary object ('verb' <SUBJ, OBJ>).

> (4) *Ene   Ø-iki   hi   a-Ø-nukar.*
>   like.this 3SG.SUBJ-do   NMLZ   4SUBJ-3SG.OBJ-see
>   'I saw that he did like this.' (Tamura, 1985: 48)

Ditransitive verbs, finally, subcategorize for a total of three arguments – the subject, the primary object, and the secondary object ('verb' <SUBJ, OBJ, OBJ2>). If the two OBJs are overtly expressed with an NP, they are told apart by linear order, with OBJ being closer to the verb than OBJ2. As we see in (5) this is not mirrored in the position of personal affixes on the verb, where OBJ2 overrides OBJ, appearing next to the predicate. This is discussed in §2.4. below.

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[4] Murasaki (1976) also uses the labelling V_0, V_1, V_2 to classify verbs, thus indicating the number of arguments for which a certain verb subcategorizes.

[5] The notations SUBJ, OBJ, OBJ2 are intended, here and throughout the argumentation, as devices to represent the arguments of a given verb – i.e. they represent the verb's argument structure. Similarly to what is assumed within the LFG framework (Bresnan et al., 2016: 326), I consider argument structure to be an interface between thematic role and grammatical function of a verb's predicators (see §2.4). Differently from this approach, however, I here intend grammatical functions as being indicators of the functional relationship of predicators not at the syntactic level, but rather exclusively at the morphological level. This fits with the scope of the analysis, i.e. morphological alignment, and with the assumption that syntactic and morphological alignment should be treated separately (as pointed out in §1.2).

(5) *Caca   Ø-wen   sisam   icen   Ø-Ø-kore*[6].
    old.man 3SG.SUBJ-be.bad japanese money 3SG. SUBJ-3SG.OBJ2-give
    'The old man gave money to the poor Japanese.' (Tamura, 2000: 42)

Throughout my argumentation I focus specifically on transitive and ditransitive verbs, considering intransitives only briefly. Complete verbs, on the other hand, are not relevant for the analysis to come, so they will not be discussed further.

2.2. Personal affixes in SA
2.2.1. Personal affixes as agreement markers
Personal affixes are possibly one of the most described aspects in Ainology. Exhaustive descriptions of the personal affix systems are available for both the Hokkaidō and Sakhalin varieties of Ainu[7]. In discussing SA personal affixes in this paper, I refer to Tamura (1970, 1972, 2000).

Personal affixes are portmanteaus that indicate the functional features of a referent, which is a participant in the event expressed by the verb. The referent's features they encode are grammatical person (first, second, third or fourth), number (singular or plural), and grammatical function (SUBJ, OBJ or OBJ2). They are dependent parts of speech that form a unitary morphophonological word with the host verb [8]. Evidence of this comes from the cases of vowel elision observed at morpheme boundaries and from stress[9] shift, that may affect the verb when a personal affix is added (Tamura, 1970: 580-587). Personal affixes are obligatorily expressed on each verb in a sentence, even though the referent they indicate may be clearly understandable from the context. Example (6) shows two coordinated verbs with the same second person singular subject referent which appears marked via a personal affix just on the first coordinated verb – this sentence is unacceptable.

(6) * *Eani su   e-Ø-suke   wa Ø-Ø-e.*
    you   broth   2SG. SUBJ-3SG.OBJ-cook and 2SG. SUBJ-3SG.OBJ-eat
    'You make broth and eat it.'

SA also employs what in the literature are called 'personal pronouns' (Tamura, 1970: 578; 2000: 47). Personal pronouns are independent words and they precede the verb, accordingly to Ainu's canonical word order (Tamura, 2000: 25-35). Personal pronouns may never be a substitute for their relative personal affix. That is to say, the personal affix must appear on the verb even though a personal pronoun is overtly present. Examples (7) and (8) show an unacceptable sentence where the personal pronoun *kani* 'I' is used as a substitute for the affix *ku-* and the corresponding grammatical sentence.

(7) * *Kani Ø-arpa.*
    I   1SG. SUBJ-GO.PC
    'I go.'

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[6] Why the OBJ is not included among verb personal affixes in the glossing is also discussed in §2.4.
[7] For an analysis of personal affixes in Sakhalin Ainu see Hattori (1961) and Murasaki (1976), or for other Hokkaidō dialects see Refsing (1986), Bugaeva (2004), Tamura (2010), Bugaeva (2012), Takahashi (2015).
[8] An exception to this seems to be the fourth person suffix *-an*. According to Tamura (1970: 587-589) this is the only personal affix that can be said to stand on a borderline between a suffix and an independent word. The reason of this may be an ongoing process of grammaticalization.
[9] I use here the term 'stress' following again Tamura's (2000) terminology. However, many other scholars have proposed that Ainu has in fact pitch accent (see for example Vovin, 1993).

(8) *Kani k-arpa.*
   I   1SG. SUBJ-GO.PC
   'I go.' (Tamura, 1972: 24)

Ainu verbs rarely encode grammatical categories (such as tense, aspect, number or person). These categories are expressed through the use of separate morphology or syntax (Tamura, 2000). It follows that, in order to relate the verb to its NP arguments, we expect some kind of obligatory agreement to match categories like person and number between V and NPs. In light of the behavior of personal pronouns in interaction with personal affixes in SA, it appears that the latter have the function of signaling agreement. Considering this and bearing in mind also their morphophonological characteristics, I believe it is advisable to redefine personal affixes. Following Oku (2008), I assume that personal affixes are better recognized as agreement markers. Personal pronouns, on the other hand, are simply used as emphatic devices for pragmatic purposes[10]. Relabelling personal affixes as 'agreement markers' gives a clearer idea of their function. On the other hand, it does not make a substantial difference whether I use the term 'personal pronouns' or another one to describe words like *kani* in (8), at least as far as this analysis is concerned. I presented personal pronouns here first to underline the properties of agreement markers, and to provide an all-round summary on referent marking on SA verbs, but they will not be discussed further.

2.2.2. Formal realization of agreement markers

One characteristic of agreement markers is the possibility to have different formal realizations, according to the grammatical function covered by their referent. Different formal realizations of agreement markers has been documented for all Ainu dialects, and in particular by Tamura (1970, 1972, 2000) for SA. The outcomes of previous research on this topic formed the basis for speculation about Ainu morphological alignment (Bugaeva, 2006). The difference that shows formally in the expression of agreement markers involves grammatical functions, in that one form is available to mark the referent when it is SUBJ, while a separate one is available to mark the same referent when it is either OBJ or OBJ2. Given this distinction, the terminology used to refer to the two different forms of a same agreement marker is 'nominative' for the one marking SUBJ, and 'accusative' for the one marking OBJs (Tamura, 2000: 58)[11]. For the time being, I accept this terminology for the

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[10] It is worth mentioning how the emphatic use of personal pronouns seems to be possible only when their referent has the grammatical function SUBJ. In Tamura (2000: 62-71) all the examples provided by the author feature a personal pronoun with a SUBJ referent, expressed via agreement marker on the verb. The same is also true for the cases of personal affixation found in the texts collected by Tamura. The only exception to this behavior is witnessed with the second persons. In this case the personal pronoun may have a referent with the grammatical function OBJ.

   Ecioka ka   eci-tak-pa.
   you   even 1SG.SUBJ>2PL.OBJ-INVITE-PL
   'I invite you too.' (Tamura, 2000: 66)

Here the prefix *eci-* is a portmanteau of a first person acting on a secon person object (see §4.2. below). Having an OBJ reiterated via a personal pronoun for any other grammatical person is not possible. Moreover, it appears to be unacceptable to reiterate any grammatical person with the grammatical function SUBJ if the OBJ is a second person referent. Although this discrepancy seems unexpected, it is correctly predicted by the direct-inverse approach presented in §4.
[11] The same terminology is used in Tamura (1972), where the Japanese terms *shukaku* and *mokutekikaku* (translating 'nominative' and 'accusative' respectively) are present. Tamura (1970: 578) uses the terms 'nominative' and 'objective' following Hattori (1961).

different forms of agreement markers. However, this soon proves to be inadequate for SA, as the following examples suggest.

First person singular is marked with the marker *ku-*[12] ('nominative') when the first person referent is SUBJ of the verb (S or A argument), while it is marked with *en-* ('accusative') when the referent is an OBJ (O argument).

> (9) a. *Kani k-arpa.*
>   I   1SG. SUBJ-GO.PC
>   'I go.' (Tamura, 1972: 24)
>
>   b. *Ponkurmat eun   ku-Ø-ye   ka   Ø-Ø-ki.*
>   little.girl   towards 1SG. SUBJ-3SG.OBJ-say even SLV-V.OBJ-do
>   'I even said it to the little girl.' (Tamura, 1984: 12)
>
>   c. *A-en-ipe-re   ka   somo   Ø-Ø-ki.*
>   4 SUBJ-1SG.OBJ-eat-CAUS even not   SLV-V.OBJ-do
>   'People did not even feed me.' (Tamura, 1972: 18)

In the same way, first person plural is marked differently for 'nominative' and 'accusative' – the former being marked with the prefix *ci-* (A argument) or with the suffix *-as* (S argument), and the latter with *un-* (O argument). This set of agreement markers strictly expresses a first person plural exclusive – that is, 'we' includes the speaker and some other third participant, but not the listener.

> (10) a. *Cis-as   kor   arki-as.*
>   cry-1PL.SUBJ.EXCL while   go.PL-1PL. SUBJ.EXCL
>   'We went while crying.' (Tamura, 1972: 18)
>
>   b. *Unu   ka   ona   ka   ci-Ø-sak*
>   mother even father even 1PL.SUBJ.EXCL-3PL.OBJ-not.have
>   'We do not have a mother nor a father.' (Tamura, 1972: 18)
>
>   c. *Ø-un-toykokikkik*
>   3PL.SUBJ-1PL.OBJ.EXCL-beat.violently
>   'They beat us up.' (Tamura, 1972: 18)

Second person singular is always marked with the prefix *e-* independently from the grammatical function covered by its referent (S, A and O arguments) – the 'nominative' and 'accusative' affixes thus appear to have the same morphological realization. This same behavior shows for the second person plural. In this case too we have the same morphological realization (*eci-*) regardless of the grammatical function of the referent.

> (11) a. *E-eraman   ruwe?*
>   2SG.SUBJ-understand   EV.DIR
>   'Did you understand?' (Tamura, 1972: 27)

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[12] Both first person singular *ku-* and first person plural *ci-* may appear respectively as the allomorphs *k-* and *c-* after vowel elision. This happens when *ku-* is followed by a verb starting with any vowel but *i* and when *ci-* is followed by a verb starting with any vowel (Tamura, 1970: 581-584).

     b. *A-e-ko-nu*   *yakun   e-Ø-ye [...]*
          4SUBJ-2SG.OBJ-APPL-hear if   2SG.SUBJ-3SG.OBJ-say
          'If people ask you about it, you say it […]' (Tamura, 1972: 28)

(12) a. *Eci-iki*
          2PL.SUBJ-do
          'You do.' (Tamura, 1985: 64)

     b. *Eci-Ø-nu*   *ya?*
          2PL.SUBJ-3SG.OBJ-hear   FIN
          'Do you hear it?' (Tamura, 1972: 28)

     c. *A-eci-tak*   *kusu [...]*
          4.SUBJ-2PL.OBJ-invite   because
          'Since they invite you […]' (Tamura, 1985: 64)

Third person singular and third person plural are marked via the zero prefix *Ø-*. This is consistent for S, A and O arguments equally. As an example take sentences (3), (11b) and (10c) above, repeated here as (13).

(13) a. *A-ekasi [...] Ø-soyne.*
          4SUBJ-father 3SG.SUBJ-go.out
          'My father […] went out.' (Tamura, 1985: 48)

     b. *A-e-ko-nu*   *yakun   e-Ø-ye [...]*
          4SUBJ-2SG.OBJ-APPL-hear if   2SG.SUBJ-3SG.OBJ-say
          'If people ask you about it, you say it […]' (Tamura, 1972: 28)

     c. *Ø-un-toykokikkik.*
          3PL.SUBJ-1PL.OBJ.EXCL-beat.violently
          'They beat us up.' (Tamura, 1972: 18)

Also in this case the 'nominative' and the 'accusative' affixes are joined by the same morphological realization. In this respect third person behaves like the second person.

2.2.2.1. The fourth person
SA's fourth person[13] has the characteristic of not being univocally linked to one fixed participant in natural discourse (i.e. 'I', 'you', or some other external third person). In this respect it is thus different from other grammatical persons treated in §2.2.2. Due to its polysemous usage, it deserves to be treated separately.

Like first person plural, fourth person can be marked in three different ways. The 'nominative' affixes are *a-* (A argument) and *-an* (S argument), and the 'accusative' affix is *i-* (O argument).

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[13] I use the term 'fourth person' following the trend found in recent works on Ainu (for instance Bugaeva, 2004; Tamura, 2010). This is an umbrella definition, in substitution to Tamura's (2000) term 'indefinite person', to group all meanings borne by this grammatical person, that are not limited to referencing to an indefinite agent. Fourth person is not intended as an obviative person like in some approaches to inverse languages (see §4.2).

(14) a. *Nisapno ar-siknak-an.*
      quickly   completely-be.blind-4SUBJ
      'I became completely blind quickly.' (Tamura, 1985: 2)

    b. *Hunak un ka   a-i-y-ani.*
      where to even 4SUBJ-4OBJ-0-carry
      'They carried me to somewhere.' (Tamura, 1985: 4)

Fourth person is used to express the inclusive first person plural – that is, a 'we' that includes both the speaker and the listener. With this use, it compensates for the restriction on first person plural that solely indicates an exclusive first person, as seen in (10) above.

(15) *Hetak, paye-an   wa   ipe-an   ro.*
    INT   go.PL-4SUBJ and eat-4SUBJ FIN
    'Come on, let us go and eat.' (Tamura, 1972: 19)

It can also mark an honorific second person. According to Tamura (1972) it was customary for Ainu women to substitute second person with fourth person when speaking to men. This switch was otherwise a general way to show respect towards the listener. In (16) a woman is worried about her husband.

(16) *A-sik-ihi   a-Ø-arka-re   hawe?*
    4SUBJ-eye-POSS   4SUBJ-3SG.OBJ-hurt-CAUS   EV.DIR
    'Did you hurt your eye?' (Tamura, 1972: 22)

Fourth person is also used to mark an indefinite agent. This happens when the action is performed by an agent that is either not important or unknown – i.e. when the agent bears a low pragmatic and/or semantic content (Tamura, 2000: 71).

(17) *Nupuri   a-Ø-nukar.*
    mountain 4SUBJ-3SG.OBJ-see
    'Someone sees the mountain.' / 'The mountain is visible.' (Tamura, 2000: 71)

Finally, fourth person is used to mark first person within direct quotation. In this case it has a logophoric function (Bugaeva, 2006).

(18) *"Arpa-an   kusu ne na" sekor   Ø-hawean.*
    go.PC-4SUBJ FUT   FIN COMP   3SG.SUBJ-say
    'He said: "I will go".' (Tamura, 2000: 66)

A logophoric function is recognized also in the use of fourth person to mark a first person narrator in traditional folktales, where the narrator identifies itself with the character acting in the tale (see also (14) above).

(19) *Sine   po   Ø-Ø-kor   unarpe   a-ne*
    one   child 3SG.SUBJ-3SG.OBJ-have middle.age.woman 4SUBJ-COP
    hine   an-an.
    and   be.PC-4SUBJ
    'I was a middle-aged woman with one child.' (Tamura, 1985: 2)

Starting from this information, I now continue by looking at how formal realization of agreement influences our perception of morphological alignment.

2.3. Different alignments

I used examples in §2.2. to present the different realizations of agreement markers on SA verbs according to the grammatical function and argument function (S, A or O) or their referent. This is better represented in the following table.

Table 1: Formal realization of personal agreement

	SUBJ		OBJ
	S argument	A argument	O argument
1SG		*ku-*	*en-*
1PL	*-as*	*ci-*	*un-*
2SG		*e-*	
2PL		*eci-*	
3		*Ø-*	
4	*-an*	*a-*	*i-*

Up to this stage of the analysis, I assumed a division of agreement markers into 'nominatives' and 'accusatives' following Tamura (2000). However, a careful look at their realization suggests that these labels may be faulty. Why are there cases like *e-* where we have no formal change among different argument functions? Why are there cases, like the fourth person, where a different formal realization is available for S and A arguments, that both mark the same grammatical function (i.e. SUBJ)? These questions challenge Tamura's terminology. Moreover, why do we witness such an apparently random distribution in the number of available affixes throughout different grammatical persons?

Bugaeva (2006: 185-186) makes sense of this discordant behavior of agreement markers by proposing that Ainu simultaneously displays three different kinds of morphological alignment. Based on first person singular markers, she states that Ainu has a nominative-accusative alignment, that formally groups together S and A and treats O differently. In the same way, fourth person and first person plural on one hand, and second persons and third person on the other are her basis for arguing that a tripartite and a direct alignment are present too. Three different alignments seem to coexist within the same language – each one is linked to one or more specific grammatical person.

Table 2: Three different alignments
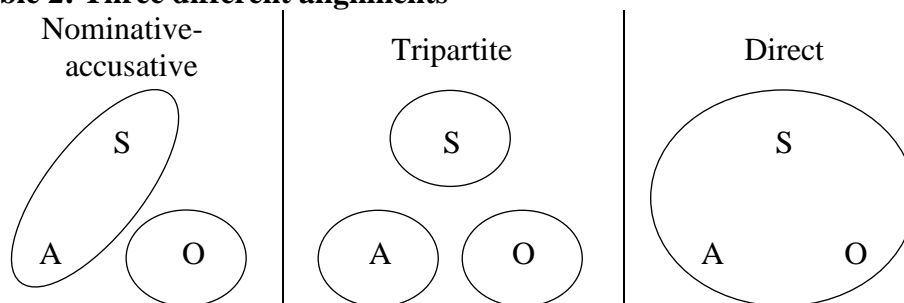
Given what we see at the morphological level, Bugaeva's deduction seems indeed sensible. However, it is not clear what the productivity would be for such an organization of agreement on the same structural level. Moreover, a closer look at SA's agreement system shows some characteristics of agreement markers that may prompt a revision of Bugaeva's model.

2.4. Constraints on argument marking: grammatical-function-oriented approach

By looking at agreement affixation on ditransitives, we can notice an important constraint of verbs in regards to argument marking. That is, in SA it is not acceptable to have more than two agreement markers, each one indicating a different referent, affixed on the same verb. It follows that only a maximum of two arguments included in the subcategorization may be expressed via agreement marking on a given verb. This can be recognized as a structural constraint that applies on the level of verb morphology. While it does not affect intransitives and transitives for obvious reasons, ditransitives must employ some strategy to avoid the ungrammaticality shown below. (20) exemplifies an unacceptable verb form where ungrammaticality is triggered exactly by the simultaneous presence of the prefixes *a-*, *i-* and *e-*, that refer to the three subcategorized arguments of the ditransitive *ekoyayirayke* 'thank for'.

> (20) * *A-i-e-e-ko-yayirayke.*
>   4 SUBJ-4OBJ-2SG.OBJ2-APPL-APPL-thank.for
>   'I thank you for something.'

If one of the arguments is implied or expressed via a separate NP, and so the verb form hosts just two agreement markers, then this verb form is grammatical.

> (21) *Tapne   a-i-siknu-re   wa   a-e-e-ko-yayirayke.*
>   like.this 4SUBJ-4OBJ-live-CAUS and   4SUBJ-2SG.OBJ2-APPL-APPL-thank.for
>   'You saved my life like this and I thank you (for that).' (Tamura, 1984: 12)

The implication of this constraint is clear – ditransitives have one subcategorized argument that must be excluded from the morphological verb structure. How this argument gets expressed alternatively, if not with an agreement marker, is not an issue here. On the other hand, I am concerned with which argument is the excluded argument, and what parameters give a certain argument the priority to appear affixed on the verb. In order to understand this, I firstly assume the internal verb structure below[14].

Table 3: Assumed internal structure of the verb

agreement slot 1	agreement slot 2	verb

The assumption here is that, for any given SA verb, there are up to two available slots for agreement markers. Whether these slots are actually occupied or not is decided by verb valency. So, even though two slots are available, they are empty for complete verbs or partially occupied for intransitives. This is because there are no arguments in the subcategorization of these verb classes that can occupy a given slot in the first place. It follows that the only cases where both slots are taken are with transitives and ditransitives. These two verb classes are the perfect environment to speculate whether each slot allows only arguments with specific parameters or the assignation is arbitrary.

From the observations in §2.2. we have the first evidence to say that the agreement marker referring to the referent with the grammatical function SUBJ can never be omitted from the

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[14] This structure is intended to represent the internal structure of all SA verbs independently from their class. It does not mirror the actual linear distribution of agreement markers that, on intransitives, may also be suffixed and then follow the verb. Both the slots are here theoretically assumed to precede the verb for the sake of convenience.

verb structure[15]. For instance, having the agreement marker substituted by a personal pronoun results in an ungrammatical sentence (see (7) above). This shows a formal obligatoriness. Moreover, the SUBJ referent cannot be the one subcategorized argument excluded from agreement markers within verb structure. This is shown in (22) where a first person SUBJ does not occupy slot 1 nor slot 2. This alternatively shows a structural obligatoriness.

(22) * *Kani   i-e-e-ko-yayirayke.*
　　　　 I　　 4OBJ-2SG.OBJ2-APPL-APPL-thank
　　　　 'I thank you for something.'

This limitation in the affixation of agreement markers shows that one of the two slots must be reserved for the SUBJ referent. Then we may wonder whether SUBJ can appear in slot 1 as well as in slot 2 when an OBJ referent is also present. Examples (23) and (24) give the answer to this question.

(23) *A-en-ipe-re*　　　　　 *ka　 somo　 Ø-Ø-ki.*
　　　 4SUBJ-1SG.OBJ-eat-CAUS even not　　 SLV-V.OBJ-do
　　　 'People did not even feed me.' (Tamura, 1972: 18)

(24) * *En-a-ipe-re*　　　　　　　 *ka　 somo　 Ø-Ø-ki.*
　　　　 1SG.OBJ-4SUBJ-eat-CAUS even not　　 SLV-V.OBJ-do
　　　　 'People did not even feed me.'

It appears that it is not possible to reverse the order of two agreement markers, not even when the grammatical function of their referents is unmistakably understandable from their 'nominative' or 'accusative' formal realization. We see then that not only must SUBJ always be expressed with an agreement marker, but also that this agreement marker needs to occupy slot 1 within the verb structure. The univocality by which slot 1 can be only taken by the agreement marker referring to SUBJ also suggests that each slot may be linked to a particular grammatical function.

When dealing with OBJs, I rely on thematic roles to distinguish OBJ from OBJ2. The following examples sustain the proposal by which each slot in the verb structure indeed allows just agreement markers with referents that have one particular grammatical function. Slot 2 in fact allows exclusively agreement markers with an OBJ referent. Moreover, it appears that verb slots are also selective of a specific thematic role of referents. Slot 1 (reserved for SUBJ referent) allows in fact an agreement marker whose referent has also the thematic role agent/experiencer (depending on verb semantics). On the other hand, the thematic role of OBJ referent allowed by slot 2 varies according to verb class. With transitives OBJ has the thematic role patient/theme and with ditransitives it has the thematic role goal/beneficiary.

(25) *Rur　 takup　 a-i-kore.*
　　　 broth only　 4SUBJ-4.OBJ2-give
　　　 'They give me nothing but broth.' / 'They give nothing but broth to me.'
　　　 (Tamura, 1984: 2)

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[15] This can be said to be true also for cases of portmanteau (see Footnote 10) where the SUBJ referent is included with the OBJ within one sole agreement marker.

(26) *?Po   icen   a-Ø-kore.*
     child   money   4SUBJ-3SG.OBJ-give
     'Someone gives the money to the child.'

Example (25) shows the ditransitive verb *kore* 'give' where slot 1 and slot 2 indicate respectively SUBJ and OBJ2 referents. In this case the excluded argument is OBJ, expressed here as the separate NP *rur* 'broth'. In (26) the verb is the same, but now the excluded argument is meant to be OBJ2 (the beneficiary), while OBJ (the theme) occupies slot 2. This sentence is not ungrammatical, but the meaning with which it is intended is different from its actual one. (26) in fact can only have the reading 'Someone gives the child to the money' – it is the one OBJ with the thematic role of goal/beneficiary which has the priority to appear among agreement markers. Goal/beneficiary cannot be expressed via an oblique to leave the slot free for OBJ patient/theme either, as this would go against the subcategorization of a ditransitive that wants both OBJs expressed as core arguments. At the same time, there is also structural evidence that the one OBJ with thematic role goal/beneficiary must be the secondary object. With transitives slot 2 cannot refer to anything but an OBJ referent with a thematic role patient/theme – this OBJ never has a thematic role goal/beneficiary. In (28) one of the arguments (*tanpe* 'this thing') is expressed with an oblique, so as not to violate the subcategorization constraint of the transitive *ye* 'say'. The goal/beneficiary *ponkurmat* 'little girl' is here treated as the only (primary) OBJ and still the sentence is unacceptable.

(27) *Ponkurmat eun   ku-Ø-ye   ka   Ø-Ø-ki.*
     little.girl   towards 1SG.SUBJ-3SG.OBJ-say even SLV-V.OBJ-do
     'I even said it to the little girl.' (Tamura, 1984: 12)

(28) * *Tanpe   ani   ponkurmat ku-Ø-ye   ka   Ø-Ø-ki.*
     this.thing with little.girl   1SG.SUBJ-3SG.OBJ2-say even SLV-V.OBJ-do
     'I even said this thing to the little girl.'

As shown here, the thematic role of the referent cannot be changed as it is univocally linked to a particular slot according to verb class. This ultimately suggests that thematic role is in fact one of the parameters shaping slots within the verb structure. The necessity of distinguishing two kinds of OBJs follows from this. In fact, to argue for a unitary grammatical function OBJ whose referent may have a goal/beneficiary or patient/theme thematic role would mean the admission of acceptability for sentences like (26) and (28), that are incorrect or subject to misinterpretation. The main implication of this, however, is that there is a one-to-one correspondence of grammatical functions and thematic roles when it comes to verb slots. Precisely, the grammatical function OBJ subsumes the thematic role patient/theme and the grammatical function OBJ2 subsumes the thematic role goal/beneficiary. The fact that grammatical function OBJ2 and thematic role goal/beneficiary override grammatical function OBJ and thematic role patient/theme is due to the theoretical assumption of a thematic hierarchy as in Grimshaw (1990)[16]. From this, I follow Dalrymple (1990: 169-170) in arguing that, with regards to grammatical functions, among SUBJ, OBJ and OBJ2 all are equally ranked, and that it is the thematic hierarchy of each grammatical function that determines their relative superiority. Given the univocal correspondence of grammatical functions and thematic roles discussed here, it follows that the only grammatical function hierarchy I can assume ranks SUBJ> OBJ2> OBJ.

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[16] Grimshaw's hierarchy, where goal outranks theme, in fact organizes thematic roles as agent > experiencer > goal/location/source > theme.

Table 4: Assumed grammatical function and thematic role hierarchies

TR	agent/ exp.	>	goal/ benef.	>	patient/ theme
GF	SUBJ	>	OBJ2	>	OBJ

These hierarchies formalize the accessibility of referents that can potentially be expressed via agreement markers on the verb. The two referents whose grammatical function is included in the subcategorization of the verb and that also bear the highest thematic role on the hierarchy are eligible to appear affixed as agreement markers. These agreement markers may have different morphological realizations according to the functional features of their referent, as presented in §2.2. Discussing grammatical functions of referents was necessary to introduce thematic roles and their correspondence to them. Thematic roles of referents are in turn fundamental to develop the direct-inverse proposal for SA's alignment presented in §4.

My assumption here is that SA must have a way to morphologically mark which is the most important referent involved in an event. Considering the data available and the observations at hand, I could define this 'importance' by means of grammatical functions and thematic roles. I could assume that a language usually tends to give prominence to the grammatical function SUBJ (the function around which the sentence revolves), or to the thematic role of agent/experiencer (the one who performs/perceives the event). This concept of 'markedness' would be based on fixed hierarchies (in my case Grimshaw's hierarchy), that define which grammatical function and thematic role outranks the others. From this I should expect SA to mark a grammatical function like SUBJ more overtly than or differently from OBJs, in order to have a systematic way to understand the dynamics of interaction among their referents within a sentence. At the morphological level, this would be obtained exactly by means of separate formal realizations of same-referent agreement markers, like the ones presented above for first person singular (*ku-/en-*). This eventually supports Tamura's 'nominative'-'accusative' terminology. Nonetheless, cases like the second person singular marker *e-* or the third person zero marker challenge this view. In these cases two grammatical functions and two thematic roles that should be clearly distinguished in fact appear formally as the same. Moreover, the fact that just one of the available persons (i.e. the third) is never overtly marked is not in line with this approach either. To clarify this, I may need to abandon Tamura's terminology. However, this could also mean to negate the importance that grammatical functions and thematic roles are argued to have in deciding the formal markedness of referents in the first place. This grammatical-function-oriented approach then proves as misleading as the 'nominative'-'accusative' one. Nevertheless, this is not the case. In fact, one more parameter besides the already established grammatical functions and thematic roles is necessary to grasp the logic of SA morphological alignment. This eventually allows a revision of Tamura's terminology without affecting the grammatical-function-oriented approach. This parameter is linked to the pragmatic primacy of participants (i.e. the referents of agreement markers) within the event. Its characteristics and implications on alignment are presented in §3, where I also introduce an alternative terminology to describe SA alignment itself.

3. Re-defining markedness
3.1. (Di)transitive personal affixes
The best environment to speculate upon participants' interaction within the event described by the verb is again with transitives or ditransitives. Table 5 below[17] schematizes how the

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[17] Adapted from Tamura (2000: 59).

pragmatic interaction between two participants is reflected by agreement markers on morphology. Participants are defined by person, number (except third and fourth persons) and grammatical function.

Table 5: Transitive agreement markers of SA

		OBJ					
		1SG	1PL	2SG	2PL	3	4
SUBJ	1SG	-[18]	-	*eci-*	*eci-*	*ku-Ø-*	*ku-i-*
	1PL	-	-	*eci-*	*eci-*	*ci-Ø-*	*ci-i-*
	2SG	*en-*	*un-*	-	-	*e-Ø-*	*e-i-*
	2PL	*eci-en-*	*eci-un-*	-	-	*eci-Ø-*	*eci-i-*
	3	*Ø-en-*	*Ø-un-*	*Ø-e-*	*Ø-eci-*	*Ø-Ø-*	*Ø-i-*
	4	*a-en-*	*a-un-*	*a-e-*	*a-eci-*	*a-Ø-*	*a-i-*

From this table we can see that in most cases both participants in the event can be separately recognized from a clearly retrievable agreement marker included in the verb structure slots. This agreement marker figures among the ones available for those particular persons. Moreover, we see that in all these cases the participant with the grammatical function SUBJ is expressed via the 'nominative' affix and precedes the OBJ, occupying thus slot 1. This is exactly what was predicted by the analysis above. Six of the boxes in the table (highlighted in grey), on the other hand, show an anomalous case of agreement affixation. These are the only cases where two separate affixes are not straightforwardly recognizable, and where there is no ground to speculate whether slot 1 or slot 2 is the one occupied by the affix in the structure. These are portmanteau affixes that bear not only functional information about person, number and grammatical function, but also pragmatic information about participant interaction (e.g. *un-* expresses a second person singular acting on a first person plural). They are in fact special cases and, as such, they are treated separately in the following sections (see §3.2. and §4.2.2). For the time being, it is important to notice that the participants these portmanteaus refer to are always first and second persons.

3.2. Speech act participants – the saliency hierarchy

Speech act participant (SAP) is a term to indicate first and second person referents, separating them from third person referents, which in turn are defined non-SAPs. The concept of SAP is based on a pragmatic approach to the category of person, that groups first and second persons together as referring to the two central participants in a given conversational context (i.e. 'I'/'we' and 'you'). In this sense person becomes a category of natural discourse more than a grammatical category (Klaiman, 1992: 236). By including this pragmatic-based paramenter of SAPs to the framework, I imply that if a referent is recognized as a SAP then it must be morphologically marked differently from non-SAPs. This assumed different marking entails some kind of primacy of referents based on pragmatics. I call this primacy 'saliency' in substitution for the more loose term 'importance' mentioned above.

This kind of referent saliency felicitously explains SA's zero marked third person (non-SAP), in that formal unmarkedness distinguishes it from overtly marked first and second persons (SAPs). At the same time, however, this referent saliency fails to account for cases of agreement marker formalization that are not predicted by the SAP/non-SAP disambiguation. It is not clear, for instance, why first and second persons (both SAPs) may or may not have

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[18] Hyphens indicate interaction of one or more participant(s), either with itself or with each other, that are expressed morphologically via specialized reflexive or reciprocal affixes.

different agreement marker forms depending on the grammatical function of their referent (i.e. *ku-/en-* vs. *e-*). This falls out of the scope of the SAP approach, as further subdivisions internal to the SAP/non-SAP division are not necessarily implied.

Moreover, in the case of SA, there is one more person to include in the frame – fourth person. I introduced fourth person in §2.2.2.1. highlighting its polysemous use and paying attention to the fact it does not have a referent in the real world which corresponds to a specialized grammatical person. Rather, its possible referents are already formalized in SA as other grammatical persons (e.g. logophoric fourth person is in fact a first person and honorific fourth person is a second person). Nevertheless, a separate morphological realization for these referents is present. I argue that the reason for this is again found in pragmatics. Fourth person seems to have the function of relating the SAP and non-SAP domains by turning SAPs into non-SAPs and vice versa. Logophoric and honorific fourth person takes a participant and distances it from the SAP dimension (either for stylistic or politness reasons), making it more like an external participant to the event (i.e. non-SAP). Conversely, inclusive and unknown-agent fourth person takes a non-SAP participant and brings it closer to the SAP dimension[19]. In this sense fourth person has a deictic function. All these special pragmatic relations need to be expressed in morphology, and this is what the fourth person is for. Considering its behavior, it appears that fourth person stands on the borderline between referencing to SAPs and non-SAPs. Trying to fit SA's fourth person either among SAPs or non-SAPs presents a theoretical issue. When we try to associate fourth person, as a unitary person category of SA with its polysemous value, to SAPs or non-SAPs, it inevitably violates the constraints that define either one of these domains. This is exactly because fourth person simultaneously encodes different entities whose pragmatic centrality to a given conversational context is not the same (e.g. central first-second persons vs. non-central unknown agent). It is then troublesome, but also beyond the scope of the present analysis, to try and speculate whether SA's fourth person should qualify as a SAP or non-SAP[20].

What is relevant here instead is that, although the SAP/non-SAP distiction proves to be a feature to which SA morphological marking is indeed sensitive (see §4), the issues outlined above show that it cannot be taken as the one feature that decides SA's saliency. It follows that a more thorough definition and a better organization of saliency is necessary in order to analyze the cross-personal morphological difference in agreement markers.

To shape a saliency hierarchy for SA I focus on two characteristics of agreement markers: formal markedness and overtness. Formal markedness refers to the actual shape of agreement markers possible for a given grammatical person, and assumes that a more marked version of agreement marker may be available simultaneously with a less marked version for that same person. To define which is the more marked version of a given agreement marker I look at intransitive verbs. Agreement markers affixed on intransitives are argued to refer to the S argument of the verb and were presented in §2.2. They are summarized here for convenience.

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[19] I assume inclusive fourth person to have this function even though the participant argued to be brought closer to the SAP dimension (i.e. a second person) is a SAP itself. This is because the two prototypical SAPs 'I' and 'you' are here fused together as one single participant. The lack of an ontological separation between the two SAPs is the ground to assume a stronger closeness in saliency. This emulates the case where an actual non-SAP becomes more similar to a SAP (i.e. the unknown-agent fourth person).

[20] This would possibly require the assumption that person categories can be "split" between the two domains of SAP and non-SAP – something that, at the best of my knowledge, has never been discussed before.

Table 6: Intransitive agreement markers of SA

	1SG	1PL	2SG	2PL	3	4
SUBJ	*ku-*	*-as*	*e-*	*eci-*	*Ø-*	*-an*

Leaving aside 'nominative'-'accusative' markers featured on transitives, I assume that if a given person is marked by a certain form of agreement marker on an intransitive, then that particular form of agreement marker must be the more marked one that is available for that person. This follows from the fact that, since intransitives have just one single argument within their subcategorization, that argument is necessarily the more marked one morphologically. Agreement markers included in Table 6 all represent the more marked version of agreement marker available for each person, and they are thus assigned the feature [+MAR]. Subsequently, the alternative agreement marker form that may be present for certain persons is the less marked one, and it is assigned the feature [−MAR] agreement markers of SA can be then reorganized as follows.

Table 7: Formal markedness of agreement markers

	1SG	1PL	2SG	2PL	3	4
[+MAR]	*ku-*	*ci-/-as*	*e-*	*eci-*	*Ø-*	*a-/-an*
[−MAR]	*en-*	*-un*			*Ø-*[21]	*i-*

I treat [+MAR] agreement markers for first person plural and fourth person as functionally the same, even though they appear formally different. Tamura (1970) and Shibatani (1990) argue that the two different forms of agreement marker displayed by first person plural and fourth person in SA most likely have developed from a common origin [22]. This historical development sets the ground to propose that *ci-/-as* and *a-/-an* respectively are allomorphs of the same affix. Which is the underlying form of this affix is not an issue here; rather I now have evidence to treat formally different agreement markers as variants of the same [+MAR].

Secondly I look at overtness. I intend overtness in terms of whether a certain person can be straightforwardly retrievable from agreement marker realization. This is independently from the fact that this person may be expressed via a [+MAR] or [-MAR] agreement marker. For instance, a first person plural can be said to be overtly retrievable on the transitive affix *eci-un-*, even though its relative agreement marker appears in the [-MAR] form *un-*. From this agreement marker, in fact, the involvement of a first person plural referent is unmistakably clear.

Bearing these two parameters in mind I turn back to transitive affixes. By looking at agreement marker realization in this environment I expect to draw two saliency indexes for each person. These indexes are respectively based on formal markedness and overtness. As

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[21] Why the zero affix is considered both the [+MAR] and [-MAR] variant of third person agreement marker is explained in §4.2.

[22] Tamura (1970: 589) argues that affixes *a-* and *-an* may have the same origin as **an*, which in turns has originated from the existence verb *an* 'exist'. She bases this assertion on the fact that SA's *a-*, which is in complementary distribution with *-an*, corresponds to the prefix *an-* in many other dialects, among which the Rayciska dialect of Sakhalin Ainu (Murasaki, 1976). This is further supported by observations on the prosodic characteristics borne by these variants, as both *an-* and *a-* do not affect accent position on the verb. On the other hand, Shibatani (1990: 29) notices that in the Ishikari dialect first person plural intransitive suffix *-as* is also used on transitives in place of the prefix *ci-* featured in SA and other Southern Hokkaidō dialects. The author does not provide any further insight about this fact, and indeed more information would be needed to speculate an actual common historical development for these two affixes. However, here I use Shibatani's preliminary observation to assume that, seemingly to *a-/-an*, also *ci-/-as* are allomorphs of a same affix.

an example, consider the transitive affix *a-en-*. Fourth person agreement marker is here overtly retrievable and in the variant [+MAR] − it responds positively to both formal markedness and overtness. First person singular *en-*, on the other hand, is overtly retrievable but in the variant [-MAR]− it responds positively just to overtness. Proceeding like this for all transitive affixes, I count when they respond positively to the parameters I set. The final outcome of this process eventually tells how persons are ranked in respect to each other and consequently how the saliency hierarchy is organized. The only assertion possible since this stage is that third person must be at the bottom of the hierarchy. Since I am dealing with morphological marking, it follows that a formally unmarked person must be the least salient among all. This again fits with the SAP approach presented above, by which non-SAPs are considered less salient. For this reason third person is not included in the counting.

As it regards portmanteaus featured in Table 5, it has already been mentioned that they are treated as special cases of agreement marker affixation. This is due to the fact that they encode pragmatic information regarding two separate referents within one single formal realization. For the purpose of the analysis at hand, they are always assumed to respond positively to the parameter of overtness. That is to say, a portmanteau like 1SG>2PL *eci-* overtly expresses both first and second person, although two morphologically separate agreement markers are not present. On the other hand, portmanteaus respond to the parameter of formal markedness like all other agreement markers, depending on whether the [+MAR] variant is available for a given person. For instance, again 1SG>2PL *eci-* responds positively for formal markedness just for second person, as *eci-* is in fact a second person [+MAR]. Contrarily, the portmanteau 2SG>1SG *en-* does not respond positively for any of the two persons it encodes. This is because *en-* is a [-MAR].

Table 8 presents the results of counting. The higher the total, the higher the relative person is ranked on the saliency hierarchy.

Table 8: Saliency in SA

	1st person	2nd person	4th person
markedness	4	14	6
overtness	16	16	12
total	20	30	18

Adding the previously excluded third person, the saliency hierarchy to account for morphological markedness of agreement markers appears as follows.

<div align="center">2nd>1st>4th>3rd</div>

It is worth mentioning how, at this stage, I did not mention semantics as a decisive component in the definition of SA's saliency. This is in contrast with the cross-linguistic tendency that discusses saliency as tightly linked to semantic-based features such as animacy (Klaiman, 1993). Nevertheless, also in the case of SA, semantics is indeed relevant to saliency, under the shape of thematic role of participants. However, rather than being something that is used to define saliency, semantics works parallel to it eventually deciding proximality (see §4).

3.3. Conflicting hierarchies
Now that the saliency hierarchy is formalized, I can apply it together with grammatical functions and thematic roles to speculate SA morphological alignment. In §2.4. I proposed

that agreement markers are linked to a particular slot within the verbal structure depending on grammatical function and thematic role of their referents. The agreement marker whose referent grammatical function and thematic role outrank the ones of another referent, according to the relative hierarchy, appears in slot 1. Following from this I would assume that this is the case also for saliency – if a referent corresponds to a person ranked higher on the saliency hierarchy respectfully to another, then the former should appear in slot 1. It is clear that this presumes all three hierarchies discussed until now to work parallel to each other. Slot 1 should eventually host the morphologically more marked agreement marker between the two affixed on the verb. This is a felicitous assumption in cases like the transitive affix *ku-i-*.

Table 9: Verb slot values for *ku-i-*

	slot 1 *ku-*	slot 2 *i-*	verb
GF	SUBJ	OBJ	
TR	agent	patient[23]	
saliency	1st	4th	
	[+MAR]	[-MAR]	

Here slot 1 hosts an agreement marker whose referent has all values (SUBJ, agent, 1st) that outrank, on the relative hierarchies, all values borne by the referent expressed with the agreement marker in slot 2. As expected, agreement marker in slot 1 is marked as [+MAR] and agreement marker in slot 2 as [-MAR]. However, there are other cases where the same assumption is indeed infelicitous. This is for instance the case of *a-en-*.

Table 10: Verb slot values for *a-en-*

	slot 1 *a-*	slot 2 *en-*	verb
GF	SUBJ	OBJ	
TR	agent	patient	
saliency	4th	1st	
	[+MAR]	[-MAR]	

In this case fourth person appears lower than first person on the saliency hierarchy and yet it figures in slot 1 within the verb structure. The sentence is grammatical despite agreement markers linearly appear in such an order that is opposite to the one dictated by saliency. Moreover, it is impossible to invert the agreement markers (i.e. *en-a-*) in order to fit with the saliency hierarchy, since this gives an unacceptable result as discussed in §2.4. This behavior seems to suggest that the validity of the saliency hierarchy holds unless the thematic hierarchy is not corrupted. That is to say, if a first person referent (even though highly ranked for saliency) has the thematic role OBJ/ OBJ2, its relative agreement marker cannot appear in slot 1 because the features it bears are linked to a fixed position within verb structure. One problem follows naturally. If it is true that thematic role have priority over saliency, why do I need a saliency hierarchy in the first place? Alternatively, if saliency is indeed relevant, how should I apply it without conflict with other hierarchies?

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[23] For the sake of convenience, here and in the following table agent and patient are taken as representative of the possible thematic role of the referents.

4. The direct-inverse approach

I propose that the working of SA's agreement markers is recognized as a case of direct-inverse alignment. SA deviates in some aspects from what is said to be the prototype of an inverse language. Nevertheless, these aspects are in line with less common behaviors featured in a number of inverse systems. This approach is effective to account for the seeming discrepancies in the application of hierarchies, and it also explains the peculiarity of portmanteaus.

4.1. Assumptions

Klaiman (1993: 227) defines inverseness as the property of a language to have transitive, non-reflexive predication specially marked in case a first or second person referent corresponds to a non-subject role. In his overview on inverse languages he underlines four main generalities of this language type – sensitivity to argument ontological ranking, systematicity, directionality and transitivity (Klaiman, 1993: 235). Inverse languages do not display one common single behavior, rather they can relate differently to what is implied by the four generalities above. These in fact simply present a prototype, the conformity to which is strictly language dependent.

Sensitivity to argument ontological ranking is based on ontological saliency. An argument's ontological saliency depends on its referent's centrality in relation either to the physical universe or to the conversational context (Klaiman, 1993: 235). Klaiman says that the hierarchy defining the ranking of referents is usually described as a natural hierarchy like in Table 11. This in turn is recognized as an animacy hierarchy, where statuses refer more to categories of natural discourse than to categories of grammatical person.

Table 11: Animacy hierarchy (Klaiman, 1993: 236)

1st person	2nd person	3rd person	proper noun	human noun	animate noun	inanim. noun

Under systematicity Klaiman highlights the property by which inverseness involves just transitive predicates or predicates of a certain lexical domain. While transitivity appears to be a fundamental requirement to have the direct-inverse alternation, the lexical domain of inverseness is highly language specific. Nonetheless, the scope of inverseness is clearly defined so that just specific predicates may feature the alternation – in this sense inverseness is systematic (Klaiman, 1993: 237). Directionality refers to the direction in which referent interaction expressed by the verb proceeds. Inverseness assumes a distinction between verbs denoting events in which referent interaction evolves following the arrow in Table 11, and events in which the interaction evolves in the opposite direction (Klaiman 1993: 239-240). This distinction is supposed to be grammaticalized. In many languages grammaticalization of inverseness is obtained via a specialized morpheme. This may be in complementary distribution either with another specialized morpheme or with a zero morpheme to distinguish direct and inverse constructions. Finally, transitivity is a formal characteristic that distinguishes direct-inverse alternation from active-passive or ergative-antipassive alternations (Klaiman, 1993: 242).

While I do not include transitivity in my analysis of SA, I indeed acknowledge the other three generalities drawn by Klaiman to define inverseness in this language. In §3.2. I discussed a saliency hierarchy for SA based on the centrality of referents in respect to the conversational context. The concept of saliency applied above fits with the one of ontological saliency

assumed in Klaiman's framework. There are, however, some remarkable differences. In SA's ontological hierarchy second person outranks first person, where in the hierarchy assumed in Table 11 the opposite is true. Nevertheless, there are instances of languages (Plains Cree and other Algonquian languages) that indeed differ from this generic hierarchy by ranking first and second person like SA (Klaiman, 1993: 236, 239). Another difference (also pointed out in §3.2.) is that SA seems not to differentiate (at least not morphologically) among all the statuses, included in the hierarchy in Table 11, that are below third person. I argue this signifies that in SA animacy is not a substantial feature of saliency. Rather than semantics, pragmatic relations between referents in discourse play a central role in shaping this concept[24]. These discrepancies with the generic model reported by Klaiman do not undermine the possibility of relating SA's saliency to it[25]. Inverseness is clearly systematic in SA. Although there is no particular lexical domain over which inverseness has its scope, it indeed applies just to transitive predicates. This restriction shows systematicity. SA deviates from the prototype of inverseness also regarding directionality. This is because grammaticalization of inverseness does not happen via a specialized morpheme to indicate how the interaction between participants evolves. The coding of directionality happens in SA through alternation of formal realizations of agreement markers on the verb (see §4.3). This is also the case of a small number of inverse languages like Mapudungun, where alternation in shape of person-encoding affixes compensates for the lack of overt inverse morphology (Klaiman, 1993: 240). Looking at formalization of agreement markers from the perspective of directionality is a relevant issue for the analysis at hand, as it solves the alledged incompatibility among different hierarchies that shows in some cases.

4.2. The proximate-obviative distinction

Inverseness may encompass the proximate-obviative distinction. In non-local domain (i.e. when non-SAP referents are involved) languages may differentiate between more and less salient third person referents (Jacques and Antonov, 2014: 303). Saliency of non-SAPs is normally determined on animacy of referents, as outlined in Table 11. This distinction is encoded by expanding the system of person categories including a fourth person[26], which represent third person referents of lesser centrality (Klaiman, 1993: 247). Fourth person is otherwise called obviative (OBV) as opposed to a more central third person that is defined proximate (PROX). These labels help illustrate distal relations of referents based on their ontological status, which is guided by semantics and pragmatics (Jacques and Antonov, 2014: 303). Proximality is usually marked through morphology or syntax, alternatively in different shapes depending on directionality.

In §4.1. I noticed how SA does not operate any distinction among third person referents on the morphological level, and how this subsequently affects the definition of saliency. This happens because in SA semantics has no influence in shaping the concept of saliency. Since the proximate-obviative dichotomy usually entails a semantic-based distinction in animacy, SA should not have the requirements necessary to feature it. Nevertheless, the concept of proximality is applicable in SA too. I propose that in this language proximality is defined by saliency and indeed semantics, that, under the shape of thematic roles, applies once saliency

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[24] In §3.2. SA's saliency hierarchy was in fact developed based on morphological realization of referents, assuming exclusively the relevance of pragmatics but no influence from semantics. In this sense the concept of "saliency" in SA differs from its general cross-linguistic definition (as we find it in Klaiman), that subsumes the relevance of semantic-based features like, for instance, animacy.

[25] In fact, Klaiman defines the hierarchy in Table 11 a mere approximation of how ontological saliency is determined in languages (Klaiman, 1992: 236).

[26] This must not be confused with the language-specific definition of 'fourth person' given above for SA.

has been defined. The major difference with Klaiman's model is thus that semantics influences proximality not through saliency, but rather working parallel to it. Moreover, thematic roles have a wider scope in SA than animacy does in other inverse systems. In fact, we can hardly speculate on animacy of first and second person referents, as they will rarely be inanimate. On the contrary, differences in thematic roles are equally valid for all referents, so that even most salient second persons may be either agents or patients. It follows that in SA any referent is possibly treated as PROX or OBV according to two factors – saliency and thematic primacy.

Proximality is outlined in SA via mathematical operation. Persons from second to fourth, according to their saliency, are assigned a value going from 2 to 0 (with external third persons being assigned a negative value -1) and a value of either 2 *or* 0 depending on the thematic role of their referent[27]. By applying these values to transitive affixes I can define proximality for each instance of referent interaction they express. The process highlights cases when the OBV corresponds to the OBJ referent and others when it corresponds to the SUBJ referent. In the former case slot 1 hosts the PROX referent agreement marker while in the latter it hosts the OBV referent agreement marker. As an example, consider the two instances below.

Table 12: Deriving proximality for affixes *ci-i-* and *Ø-eci-*

direction of interaction	persons	saliency index	thematic index	total	proximality
1PL>4	1st	1	2	3	PROX
	4th	0	0	0	OBV
3>2PL	3rd	-1	2	1	OBV
	2nd	2	0	2	PROX

Table 13 gives an overview of transitive affixes, separating cases where PROX precedes OBV within the verb structure (white) and cases where the opposite happens (light grey). The latters also include portmanteaus (see §4.2.1).

Table 13: Proximality of transitive affixes

		OBJ					
		1SG	1PL	2SG	2PL	3	4
SUBJ	1SG	-	-	*eci-*	*eci-*	*ku-Ø-*	*ku-i-*
	1PL	-	-	*eci-*	*eci-*	*ci-Ø-*	*ci-i-*
	2SG	*en-*	*un-*	-	-	*e-Ø-*	*e-i-*
	2PL	*eci-en-*	*eci-un-*	-	-	*eci-Ø-*	*eci-i-*
	3	*Ø-en-*	*Ø-un-*	*Ø-e-*	*Ø-eci-*	*Ø-Ø-*	*Ø-i-*
	4	*a-en-*	*a-un-*	*a-e-*	*a-eci-*	*a-Ø-*	*a-i-*

From Table 13 we understand that the PROX referent is marked by what was previously recognized as the [+MAR] variant of agreement marker. Conversely, the OBV referent is marked by the [-MAR] variant. Thanks to this approach the discrepancy discussed in §3.3. is cancelled in that PROX, that indicates the more central referent, is systematically more marked

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[27] Agent/experiencer is assigned the value 2 while goal/beneficiary and patient/theme are assigned the value 0. There is no higher value assigned to OBJ2 even though it is ranked higher on the thematic hierarchy because it can never appear as agreement marker within verb structure together with OBJ (see §2.4). For this reason it suffices to have separate values for SUBJ and OBJs, which nevertheless appears simultaneously as agreement markers. Furthermore, the 2-0 distinction is here necessary to maintain the same scale for both factors (i.e. saliency and thematic primacy).

in morphology[28]. Boxes highlighted in dark grey show special cases where the derivation gives the same proximality for both referents.

Table 14: Deriving proximality for affixes *Ø-un* and *a-e-*

direction of interaction	persons	saliency index	thematic index	total	proximality
3>1PL	3rd	-1	2	1	OBV
	1st	1	0	1	OBV
4>2SG	4th	0	2	2	PROX
	2nd	2	0	2	PROX

While having multiple OBVs on the same verb is attested in other inverse systems, many languages consider impossible for two PROXs to coexist (Jacques and Antonov, 2014: 307). Recognizing both referents as PROX in the case of *a-e-* and *a-eci-* follows from the fact that both these agreement markers never indicate an OBV referent in any other case within the affix paradigm. In this respect SA deviates from most instances of inverseness.

4.2.1. Portmanteaus
Despite their peculiar behavior, SA's portmanteaus respond to inverseness like other transitive affixes. According to Klaiman (1993: 246), some inverse systems encode local interaction among SAPs with special 1st>2nd and 2nd>1st forms. This is a strategy for languages to highlight SAP-only interactions and differentiate them from other instances of interaction. These special forms discussed by Klaiman are found in SA as first-second person portmanteaus. They are special in that they not only encode functional features of referents but also pragmatic information about their interaction (§3.1). Moreover, they are transitive affixes where just one of the referents appears overtly expressed. In all cases this is the OBJ referent, that thus appears in the agreement marker variant appropriate for this grammatical function. The SUBJ referent is in turn implied by the affix, and so formally unmarked. As it regards morphological alignment, I assume that the only referent whose agreement marker is formally retrievable from portmanteaus' realization is indeed the PROX. In these instances being the PROX does not entail being marked by a [+MAR] agreement marker, like the case of 2SG>1PL *un-* exemplifies. Rather, proximality simply involves overt markedness, as opposed to formal unmarkedness of OBVs. Portmanteaus' definition of proximality clearly overcomes saliency and thematic criteria, and thus cannot be predicted by the derivation process applied above. In light of this, I argue portmanteaus to imply that the OBJ referent (realized as PROX) actually structurally follows the SUBJ (i.e. OBV) on the verb. This latter, even though encoded in the portmanteau, is projected as a zero agreement marker on slot 1.

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[28] It is necessary to assume that third person zero marker indicates both PROX and OBV and so that *Ø-* is in fact the [+MAR] and [-MAR] variant of third person agreement marker (see §3.2). This clearly results from the derivation. It could be speculated that third person PROX was indeed realized differently from OBV at some stage of the language (i.e. [+MAR] was different from [-MAR]) – overt marking for third person alternative to *Ø-* is reported for instance in Sakhalin Ainu (Murasaki, 1976). This distinction might have gone lost later in the history of the language, leaving both variants of agreement marker as formally the same. The same cannot be said for second person. Even though, seemingly to third person, only one realization of agreement marker is available, this corresponds in fact solely to [+MAR]. The derivation shows in fact that second person is never OBV.

Table 15: Verb structure with portmanteau *eci-*

	slot 1 Ø-	slot 2 *eci-*	verb
GF	SUBJ	OBJ	
TR	agent	patient	
proximality	OBV	PROX	

This way I can look at portmanteaus, in their own peculiarity, as structurally the same as other transitive affixes.

4.3. Direct and inverse constructions

In §4.1. I introduced how inverseness encompasses directionality. This means that inverse languages distinguish verbs according to how referent interaction evolves, considering also the ontological saliency of these referents. Many languages operate this distinction via an overt, specialized morphosyntactic device, that usually manifests itself in two different forms. One of these forms systematically appears when, on a transitive verb, the logical subject outranks in terms of saliency the logical object. Conversely, the other form appears when the logical subject is outranked in terms of saliency by the logical object (Klaiman, 1993: 240). The two forms of this morphosyntactic device are then mutually exclusive and discern clearly direct from inverse constructions. Example (29) (borrowed from Klaiman, 1993) shows two Plains Cree sentences where direct and inverse morphemes *-āw* and *-ik* are indicative of directionality. Given that in this language first person outranks third person as it regards ontological saliency, we know that in (29a) first person 'I' must be the logical subject since the direct morpheme *-āw* is used. On the other hand the opposite must be true in (29b), where the inverse morpheme *-ik* appears to signal that it is the logical object to bear a higher saliency.

(29) a. *Ni-wāpam-āw   (nīẏa)   atim.*
      1-see-DIRECT   (I)   dog
      'I see the dog.' (Klaiman, 1993: 245)

   b. *Ni-wāpam-ik   (nīẏa)   atim.*
      1-see-INVERSE   (I)   dog
      'The dog sees me.' (Klaiman, 1993: 245)

It was argued above that SA does not resort to any overt morphosyntactic device as a way to specify directionality. In fact, no added morphology or syntax is featured on verbs hosting transitive affixes, despite we witness clear alternations in referent proximity (see Table 13). Even more importantly, directionality in SA takes a slightly different scope than it does in the inverse systems reported by Klaiman.

Firstly, in Klaiman's acceptation, 'logical subject' and 'logical object' are recognized respectively as the 'doer' and the 'patient' of a transitive predicate. Consecutively, these roles are easily relatable to the prototypical thematic roles of agent and patient. It is inferable then that Klaiman assumes logical subject to be assigned the highest thematic role available in the argument structure of the transitive verb, while the logical object takes the available lower thematic role, as in Bresnan (2001). It follows from this that I can summarize his overview on directionality saying that this feature is indeed sensitive to thematic roles and ontological saliency of referents. As for SA, to argue that thematic roles decide directionality means to automatically acknowledge the inclusion of grammatical functions into the derivation too.

This is due to the one-to-one correspondence of thematic roles and grammatical functions within transitive verb structure, as discussed in §2.4. The involvement of grammatical functions in directionality is just indirect, but it eases the formalization of this feature of inverseness for SA. In fact, I can assert that direct constructions of SA entail that SUBJ> OBJ, while inverse constructions entail that OBJ>SUBJ. This avoids resorting to labels and definitions not included in my framework (i.e. 'logical subject/object').

Secondly, in Klaiman's model thematic roles apply together with saliency. This indeed happens in SA too, but one implication follows from this. It has been proved that thematic roles and saliency are the factors that also define proximality in SA (§4.2). The logical consequence of this is that, if directionality is sensitive to these same factors, then it must be sensitive to proximality. That is, for the case at hand, I can better restate my previous assertion saying that direct constructions entail that PROX>OBV, while inverse constructions entail that OBV>PROX.

To compensate for the lack of a specialized morphosyntactic device SA resorts to morphology that is already available. To express directionality this language uses caselike forms of agreement markers (i.e. [+MAR]/[−MAR]) and organizes transitive verb structure into slots connected to fixed functional-semantic features (§2.4). Caselike forms indicate referent proximality, thus clarifying which referent outranks the other. On the other hand, position within verb structure unarguably illustrate whether this referent is the SUBJ or the OBJ. The direct and inverse constructions discussed by Klaiman where logical subject outranks logical object and viceversa are ultimately mirrored in SA respectively as linear PROX-OBV and OBV-PROX alternation of transitive verb affixes.

Fixed features linked to verb slots are also useful to not misinterpret grammatical functions in cases of even proximality (see Table 13). In these instances it is impossible to recognize if the construction displays the direct or the inverse morphology, so it should be virtually impossible to understand the kind of referent interaction. The same is attested in other languages (Klaiman, 1993: 246), where a possible even ontological saliency constitutes a problem for the correct interpretation of the predicate. To overcome this obstacle, these languages resort to different strategies, among which the use of a fourth person obviative. In SA this even-proximality problem is overcome in principle and no further strategy is needed. No misinterpretation is in fact possible because position of agreement markers subsumes all functional-semantic features necessary for the right comprehension of the verb form.

5. Conclusions
In this article I discussed morphological alignment in SA. The analysis proposes that SA's morphological alignment follows a direct-inverse organization. Crucial for the argumentation of this proposal were the interaction of grammatical functions, thematic roles and pragmatic primacy or referents, and the assumption of a fixed internal structure for transitive verbs. Evidence for the sensibleness of this assumption comes from (un)grammatical instances of personal agreement use, that show systematic correspondences of verb structure slots to functional-semantic features of referents. SA deviates in some aspects from prototypical inverse systems (Klaiman, 1993). In particular, it organizes referent saliency on pragmatic relations, ranking second persons higher that first persons. It does not set a lexical domain for inverseness to apply on verbs, rather the domain is restricted to predicate transitivity and it also redefines the scope of proximality, extending it outside of the non-SAP domain.

This analysis constitutes an attempt to formalize SA's morphological alignment. The direct-inverse approach to alignment is effective in that it provides a unitary organization of morphological referent marking for this language, that was previously dealt with recurring to different (and sometimes contrasting) approaches. Inverseness of morphological alignment may be also useful to solve issues regarding other categories, that are still unexplained or overlooked. One such case is the restriction in the use of emphatic second person personal pronouns (see Footnote 10). Nonetheless, some other issues remain unsolved. For instance, it is not clear why local predication 2PL>1SG/1PL is not expressed via a portmanteau, as it is the case for other instances of 1st-2nd person interaction. Moreover, having PROX and OBV third person formalized in the same way (i.e. Ø-) does not quite fit with the behavior of all other persons. These, in fact, either have separate forms for PROX/OBV or, if not, they are never OBV (e.g. second persons). While historical reasons may be at the root of these behaviors, further speculation is needed to properly explain them. This is left for future research on this topic. From a wider perspective, this analysis may also have an impact on our typological understanding of inverseness. I showed above that SA's inverse system distinguishes itself, among other things, for how saliency is defined and how the scope of proximality extends over all kinds of participants. Such behaviors are said to deviate from the alleged prototype of inverseness, which in turn shapes the typological profile of this category. The "exceptional" case represented by SA may be the cue that these behaviors that are said to fall outside of the prototype could indeed be cross-linguistically more common than what previously thought. In light of such new accounts, we would need to refine our approach to inverse systems acknowledging the relevance of linguistic variation, which would eventually result in an improvement of the typological description of inverseness.

Abbreviations

0: epenthetic vowel or glide; 1: first person; 2: second person; 3: third person; 4: fourth person; AM: agreement marker; APPL: applicative; CAUS: causative; COMP: complementizer; EV.DIR: direct evidential; EXCL: exclusive; FIN: final particle; FUT: future; GF: grammatical function; INT: interjection; +MAR: more marked variant of an AM; −MAR: less marked variant of an AM; NMLZ: nominalizer; OBJ: primary object; OBJ2: secondary object; OBV: obviative; PC: paucal; POSS: possessive; PL: plural; PROX: proximate; SG: singular; SLV: subject of a light verb construction; SUBJ: subject; V.OBJ: nominalized verb in a light verb construction

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