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Transitivity in Japanese and Ainu language

Tranzitivita v japonštině a v ainštině

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Prohlášení

Prohlašuji, že jsem bakalářskou práci vypracovala samostatně, že jsem řádně citovala všechny použité prameny a literaturu a že práce nebyla využita v rámci jiného vysokoškolského studia či k získání jiného nebo stejného titulu.

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Abstract (in English):

The aim of the present thesis is to present a structured survey of transitivity manifestation and contrast it in Japanese and Ainu languages. The introduction of the thesis presents a basic typological classification of the two languages. The first part focuses on the theoretical background adopted, such as the basic approach to transitivity, the construction grammar, the markedness hypothesis or the Ikegami's typology of languages. The second part of the thesis provides a structured description of the manifestation of transitivity in the two languages, focusing on derivation and changes in valency. The final part of the thesis provides a contrastive synthesis with reference to the markedness hypothesis and Ikegami's typology of languages.

Key words: Japanese language, Ainu language, transitivity, contrastive study

Abstrakt (česky):

Cílem této práce je představit strukturovaný popis a kontrastivní studii tranzitivity v japonštině a ainštině. Úvod práce obsahuje mimo jiné typologii obou jazyků. První část práce představí základní koncepty a metodologii práce, jako například základní pojetí tranzitivity, konstrukční gramatika, teorie příznakovosti (markedness hypothesis) nebo Ikegamiho typologie jazyků. Druhá část práce bude obsahovat strukturovaný popis tranzitivity v obou jazycích se zaměřením na změny valence. Ve finální části práce budou oba jazyky porovnány s ohledem na teorii příznakovosti a Ikegamiho typologii jazyků.

Klíčová slova: japonský jazyk, tranzitivita, ainština, kontrastivní studie

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Introduction

Transitivity is generally understood as a universal property of languages, and its manifestation differs from one language to another, as well as the means of altering it. The aim of this thesis is to investigate and contrast the ways in which transitivity manifests in the Japanese and Ainu languages, focusing on productive and non-productive changes in transitivity.

The introductory part of this thesis provides a typological characterisation of the two contrasted languages. Major theoretical approaches to transitivity as well as the concept of constructions, markedness hypothesis, or the phenomenon of granularity, are also introduced. The second chapter provides a structured description of various constructions related to change in valency in the two languages, such as the passive or the causative construction. The third chapter examines valency alternations, defined as lexicalised pairs of verbs, in the two contrasted languages.

The final part of the present thesis presents a contrastive analysis of transitivity-related constructions in the previous chapters. The analysis aims to identify major similarities and differences in the two languages on morphosyntactic and semantic levels and to apply the results to the markedness hypothesis and Ikegami's language typology, which is introduced in chapter 1.

Ainu is a moribund (critically endangered) language which used to be spoken in Hokkaidō, Sakhalin and Kurile Islands. It is an agglutinating polysynthetic language with SOV (subject-object-verb) word order and mixed but mostly tripartite alignment[1]. It uses affixes extensively and is predominantly head-marking and prefixing. (Bugaeva 2012: 461-462)

It is generally considered a language isolate although some linguists attempt to trace its origins to various language families, such as Paleo-Asiatic, Ural-Altaic, or Malayo-Polynesian, or to individual languages - Gilyak, Eskimo or Japanese. Ainu language has various dialects. The difference between them is reportedly more phonological and lexical than grammatical. They may be divided into three main groups - Kurile dialects, Sakhalin dialects, and Hokkaidō dialects. (Shibatani 2008: 5-7). Hokkaidō dialects may then be divided into Northeastern and Southwestern groups with various local sub-dialects. (Bugaeva 2012: 461)

[1] Languages with tripartite alignment mark objects and subjects of transitive verbs and subjects of intransitive verbs differently. (Baker 2015: 4-22)

In my thesis, I choose to focus on the Southwestern dialects of Ainu, particularly Saru and Chitose dialect, because they are probably most researched and also best documented.

Ainu verbs do not inflect, and they may be divided into four major classes - avalent verbs, intransitive verbs, transitive verbs, and copula. Most ditransitive verbs in Ainu are derived from transitive verbs marked by applicative (see 2.2.1) and/or causative (see 2.2.2) markers. Avalent verbs consist mostly of meteorological predicates, such as *sir-pirka*, 'weather is good', which consist of *pirka*, 'be good' and an incorporated subject, *sir*, 'appearance/land'. These verbs are also referred to as complete. There is a number of aspectual, modal, and evidential markers in Ainu, but no „pure" tense markers. (Bugaeva 2012: 470-471)

Although Ainu has personal pronouns like Japanese, they may be omitted. All verbs (except for avalent verbs) may be marked by grammatical person markers, mostly affixes, which will be hereafter referred to as person affixes. Person affixes are compulsory and differ for transitive and intransitive (divalent and trivalent) verbs and are both prefixes and suffixes. They also differ depending on the syntactic function or semantic role, and formally distinguish singular and plural. Third person is unmarked (ie.. Ø is generally used to mark the third person). Second person plural may be either inclusive or exclusive, and there is also an indefinite third person pronoun corresponding to the English „one". Some verbs may also employ different stems or suffixes for singular and plural. In the case of intransitive verbs, plural suffix agrees with the subject; in the case of transitive verbs, plural suffix agrees with either the subject or the object (or both). (Bugaeva 2012: 471 - 472)

Japanese is a language spoken primarily in Japan and also in some other parts of the world, such as Hawaii, where the Japanese immigrants can be found. It is considered a language-isolate although there are possible ties to other language families. However, its origin or affiliation to other languages has not been definitively established. It might have originated by creolization of two (or more) languages. It is an agglutinative language with SOV (subject-object-verb) word order, extensively affixing (both prefixes and suffixes exist in Japanese) and predominantly head-marking. (Shibatani 2008: 89 - 92)

Japanese verbs (specifically their endings which are clearly distinguishable and Japanese is still considered agglutinative as stated above) inflect although there are still ongoing discussions about the number of inflection categories (traditionally, six semantic and/or functional categories are recognised, which are based on Classical Japanese

grammar). (Shibatani 2006: 221 - 235) Just like in Ainu, there are avalent, monovalent, divalent, and trivalent verbs in Japanese. Arguments and complements are marked by particles (case or topic particles). (Nitta 2009: 13 - 20)

Both Ainu and Japanese are classified as language isolates, however, it is yet unclear what kind of connection there is between the two languages. There are some similarities which probably arose recently in the last two centuries due to Japanese influence. (Nakagawa 2003) There is also quite a lot of common vocabulary, be it borrowings from Japanese or from Ainu, *particularly in the case of names for various flora and fauna restricted to the northern regions of the Japanese archipelago*. In some cases, the origin of the word cannot be traced to either Japanese or Ainu, particularly in the case of the Ainu word *kamuy*, 'god', and Japanese *kami*. (Patrie 1982)

On the other hand, there are many differences between the two languages. It is quite common for Ainu words to start with /r/. Also, verbs do not inflect, but may take variety of affixes, such as person affixes, or singular/plural affixes. For that reason, it is difficult to prove a direct connection between Japanese and Ainu. Some similarities may be attributed to the fact that Japanese and Ainu have been in close contact in the past so much so most descendants of the Ainu people speak only Japanese nowadays. (Nakagawa 2003)

1 Theoretical background

Transitivity has been traditionally described as a dichotomy - an opposition of verbs which take a second noun (an argument other than subject, usually a direct object) under certain syntactic or morphological conditions (i.e. particular case, or a position in a sentence) and may carry action over from the subject to the object, and (from the) verbs which do not. (Robins 1964)

Hopper and Thompson (1980) proposed another definition of transitivity - a hypothesis of transitivity as a scale based on ten parameters - number of participants, kinesis, aspect, punctuality, volitionality, affirmation, mode, agency, affectedness of object and individuation of object, which can be manifested either morphosyntactically or semantically.

Based on those parameters, verbs (or clauses, since transitivity is here understood as a global, discourse-based property of an entire clause) may be identified as more or less transitive based on how action is carried over from the agent to the object. For example, a punctual action verb, such as 'kick', is carried over easier than non-action, non-punctual verb, such as 'like'. Similarly, action is more effectively transferred to an animate, singular, concrete object rather than inanimate, plural, and abstract object, and so on. Based on the Hopper and Thompson's approach, prototype transitivity construction is a construction in which a specific animate subject carries over a punctual action over to a specific animate object. In contrast, prototype intransitive construction then denotes an action that is not carried over at all (cf. Næss 2007).

In the present thesis, transitivity in Ainu and Japanese is examined through the lens of construction morphology based on construction linguistics as defined by Goldberg (1995, 2006). According to Goldberg (2006: 5-6), *any linguistic pattern is recognized as a construction as long as some aspect of its form or function is not strictly predictable from its component parts or from other constructions recognized to exist*.

Constructions may vary in their complexity - from a single morpheme to the passive voice as well as individual verbs - *verb can be understood to combine with an argument structure construction (e.g. transitive, intransitive, ditransitive, etc.)* Booij (2010) specifically applies the term construction on a morphosyntactic level, and this approach will be adopted in this thesis. Transitivity-related phenomena will be explored through the examination of base verbs marked by morphological units affecting syntax of the whole clause.

As mentioned above, the results of the analysis of various constructions in Japanese and Ainu will be presented in context of the markedness hypothesis and Ikegami's language typology.

Originally, the markedness hypothesis was proposed in relation to phonology (Trubetzkoy 1931), but it is also discussed in context of morphology (Jacobsen 2016, Haspelmath 2006). According to semantic markedness hypothesis, *simple linguistic forms requiring less effort to produce tend to be used when expressing situations that are relatively more normal or usual, and longer, more complex form requiring relatively more effort to produce tend to be used when expressing situations that are relatively less normal or usual.* (Jacobsen 2016: 24) Nichols et al. (2004) show that different languages may show a preference for causativization, decausativization (directed types) or neither (undirected types - equipollent, labile, or suppletive transitivity pairs).

The markedness hypothesis directly relates to Ikegami's typology of languages. According to Ikegami (1991: 290), there is *a contrast between (1) a language which focuses on 'the human being (especially, one acting as agent)' and tends to give linguistic prominence to the notion and (2) a language which tends to suppress the notion of 'the human being (especially, one acting as agent)', even if such a being is involved in the event*. Linguistic prominence may then be achieved *(1) by thematization and by subjectization and (2) by being obligatory rather than optionally selected*. Ikegami then divides those two types of languages into 'do' languages (the former from the quote above), such as English, and 'become' languages (the latter), such as Japanese.

The way in which different languages perceive certain situations as basic or derived may be one of the basic linguistic characteristics. Ainu and Japanese have been in close contact since the 18th century, however, neither Ainu nor Japanese have clear origins. The examination of the way the speakers of the two languages perceive events on a basic level might shade a light into how close those languages relate to each other.

The hypothesis of this thesis is that, while there might be certain similarities between Japanese and Ainu, there will be differences in transitivity and derivation of these basic events.

2 Valency adjusting operations

The following chapter deals with valency adjusting operations in Ainu and Japanese. Valency adjusting operations are morphosyntactic operations which adjust the number of arguments of a verb. Languages usually employ a variety of valency adjusting operations which may generally be divided into valency *decreasing* operations which remove a verbal argument, or *increasing* operations which add a verbal argument. (Payne 1997: 169-172)

2.1 Valency adjusting operations in Japanese

The Japanese language exhibits various ways of changing valency, mainly the passive and the causative constructions. This section provides a brief description of the passive, causative, reciprocal, and potential constructions as well as noun incorporation.

2.1.1 Passive

Japanese passive is expressed by means of the suffix *-(r)are* attached to the verb stem, and causes a shift of the subjecthood from agent to patient. It is generally divided into a direct passive and an indirect passive. In the direct passive (1a), there are two complements whose semantic role changes, which results in valency decrease; in the indirect passive, a whole new complement is added, and valency increases by one, e.g. (1b). (Muraki 1991: 4-11)

(1) a. *Watashi wa haha ni shika-rare-ta.*
I-TOP mother-DAT scold-PASS-PST
I was scolded by my mother.
b. *Tarō wa Hanako ni hon o naku-sare-ta*.
Tarō-TOP Hanako-DAT book-ACC lose-PASS-PST
Tarō had his book lost by Hanako.

The distribution of the suffix depends on the type of the verb (based on its conjugation) - it is usually realized as *-are* on type 1 verbs, or consonant-stem verbs, such as *kak-u* (*kak-are-ru*), and as *-rare* on type 2 verbs, or vowel-stem verbs, such as *tabe-ru* (*tabe-rare-ru*), except for irregular verbs *kuru*, come (which becomes *ko-rare-ru*), and *suru*, do (which becomes *s-are-ru*). (Nitta 2009: 213-215)

In the direct passive, the original object of a transitive or a ditransitive verb is promoted to the subject, and the original subject is marked by an oblique case either expressed by particles *ni, kara* and *de*, or a compound particle *ni yotte*, depending on the context, or it may be omitted altogether. (Nitta 2009: 216-220) Direct passive marks mostly action verbs or a change of state verbs, such as *iu*, 'tell', or *korosu*, 'kill'. The participants may be divided into animate and inanimate - an animate agent is viewed as a causer, and an inanimate agent is viewed more as a cause, e.g. (2). (Muraki 1991: 4-15)

(2) *Hanako ga sōron de okos-are-ta*.
Hanako-NOM noise-INS wake.up-PASS-PST
Hanako was woken up by a noise.

There are some semantic differences depending on how a patient is marked and on the type of a verb and a patient. If the patient is animate, the agent is often marked by *ni* (dative case), and an inanimate patient is often marked with other particles. The particle *kara* tends to appear in sentences with a verb denoting a (human) activity or verbal interaction, such as making a request, sending something, etc. In this context, it is also possible to use *ni*. (Muraki 1991: 15-17)

Agent marked by *de* often denotes a means/method, or a cause/trigger of an event, and often appears in sentences with verbs expressing a change or an interruption. Agent marked by *de* should not be confused with a place, which may also be marked similarly in passive sentences. Compound particle *ni yotte* often marks animate agent in a sentence with a verb denoting creation (building, writing) of an inanimate patient. It is in some cases possible to use *ni* or *kara* in this context as well. (Muraki 1991: 16-17)

According to Nitta, the direct passive may be divided into four major types based on the nature of the agent and the patient - whether they are animate or inanimate (有情物 or 無情物). Type 1 (animate patient, animate agent) usually expresses an activity or a state, such as speaking, getting angry and so on, including human (or animal) agent and patient, e.g. (1a). Type 2 (inanimate patient, animate agent) usually denotes activities such as breaking, reading and so on, where the patient is non-animate, such as a vase or a book, and is affected by a animate agent, usually human, such as in (3). (Nitta 2009: 226-230)

(3) *Kēki ga Hanako ni tabe-rare-ta.*
cake-NOM Hanako-DAT eat-PASS-PST

The cake was eaten by Hanako.

Type 3 (animate patient, inanimate agent) usually describes action (or a state) such as a human patient being affected (fascinated, surprised or hit) by a non-animate agent, such as (2). Type 4 (inanimate patient and inanimate agent) denotes an event, such as surrounding or enclosing something, or being made, where a inanimate patient affects a inanimate agent, e.g. (4). (Nitta 2009: 232-235)

(4) *Hanako no ie wa hatake ni kakom-are-te-iru*.
Hanako-GEN house-TOP field-DAT surround-PASS-PROG
Hanako's house is surrounded by fields.

According to Toyota's (2011: 12-14) research regarding the distribution of animacy of the patient in direct passives, approximately 62% are inanimate, 36% are human, and 2% are non-human animate. Toyota proposes that the reason for this is that in unmarked constructions (active sentences), it is fairly common to find more animate than inanimate subjects because of the tendency for egocentric, or anthropocentric, viewpoint.

Therefore, in marked constructions, specifically in passive sentences, the tendency for inanimate subject/patient should be higher. As mentioned above, the actor, expressed as an oblique phrase, is obligatory. Toyota shows that the actor is omitted in approximately 84% and it is present in approximately 16% (out of 142 cases in total), which reportedly corresponds to passive constructions in other languages.

In the indirect passive, as opposed to the direct passive, a new argument, which does not necessarily need to have a direct relation to the original active sentence, but which is influenced by it psychologically or emotionally, is introduced as a subject. The agent, subject in the active sentence, may only be marked by the particle *ni* and the object of the original sentence is retained. The newly introduced subject is mostly animate because of the fact that the subject is perceived to be (negatively emotionally) influenced, as stated above. Indirect passive sentences with inanimate oblique object are considered unnatural as well. (Nitta 2009: 237-238)

Another kind of passive construction, which shares some traits of both direct and indirect passive, is a possessive passive. It is perceived as syntactically closer to the indirect passive but semantically to the direct passive - a new subject is introduced, which has a role of the possessor of the object, which is retained, e.g. (5). (Nitta 2009: 242)

(5) *Hanako ga Tarō ni te o tsukam-are-ta*.
Hanako-NOM Tarō-DAT hand-ACC grasp-PASS-PST
Hanako had her hand grasped by Tarō.

There are two main theories on whether indirect passive should be considered different from direct passive. The uniform theory states that both passives should be treated the same whereas the non-uniform theory treats direct and indirect passive as two distinct constructions with different semantic and syntactic properties. The indirect passive is clearly distinguished from direct passive by the change in valency, as mentioned earlier - a new subject, usually the speaker, is added, and the agent may be omitted when it is unknown, or the speaker does not want to mention in for various reasons. (Shibatani 2006: 318-320)

For example, according to Ishizuka, rather than distinguishing two (or more) kinds of passives, passive should be considered a single construction manifesting itself slightly differently in different contexts: *I assume modularity of grammar, which takes various properties of passives as to result from interaction between the properties of the lexical and grammatical morphemes contained in a sentence and independently-motivated principles of the language.* (Ishizuka 2017: 403)

2.1.2 Causative

Shibatani, among others, distinguishes two kinds of causative constructions in Japanese. The first ones are *treated as transitive verbs in traditional grammar, but, [...] their connection with the corresponding intransitive verbs is recognized in a morphological analysis that identifies the roots and the suffixes for the intransitive and transitive forms*. Shibatani also argues that those suffixes, both for transitivisation and intransitivisation, *are likely to have historical connections with the contemporary passive and causative morphemes*. (Shibatani 2006: 307) Those transitive verbs and their corresponding intransitive verbs (such as *ak-u, ak-e-ru*, 'open') are treated as lexicalised transitivity pairs and will be discussed in section 3.1.

The other (productive) causative in Japanese is marked by the suffix *-(s)ase*, and may imply both permissive and coercive meaning. The distribution of the suffix depends on the type of the verb similarly to the passive suffix - it is usually realized as *-ase* on type 1 verbs, consonant-stem verbs, such as *kak-u* (*kak-ase-ru*), and as *-sase* on type 2

verbs, or vowel-stem verbs, such as *tabe-ru* (*tabe-sase-ru*), except for irregular verbs *kuru*, come (*ko-sase-ru*), and *suru*, do (*s-ase-ru*). It is a construction which increases valency by introducing a new subject, the causer, while the original subject is demoted to an object and marked by particles *o* or *ni*. (Nitta 2009: 257-262)

Causative may mark both transitive and intransitive verbs. In the case of intransitive verbs, the original subject may be marked by both of the particles, however, the meaning may change - generally, the particle *ni* implies less coercive (or more permissive) causation. In the case of transitive verbs, the object is retained whereas the original subject may only be marked by the particle *ni*[2]. (Nitta 2009: 260-261)

Semantically, causative suffix may be *agglutinated to virtually any type of verb (to the exclusion of verbs describing uncontrollable events/states*. (Kishimoto et al. 2015: 774) It is possible to divide causative constructions based on different properties. Nitta (2009: 261) divides causatives based on the involvement of the causer - 1) direct involvement, 2) indirect involvement, or 3) no direct involvement. Muraki (1991: 21) divides causatives based on the meaning of the sentence - whether it is 1) a permission, 2) a coercion, 3) a naturally occurring course of events (for example with the verb *shin-u*, „die").

Passive suffix may also be used as an expression of honorifics from the speaker towards the subject of the sentence. In this case, valency is retained. (Ishizuka 2017: 47, Toyota 2011: 26-30) It is possible to mark one verb with both passive and causative suffixes. Since passive decreases valency and causative increases it, the resulting construction does not change the quantity of arguments (valency), but differs semantically from an unmarked clause as it implies coercion or persuasion in passive voice. (Nitta 2009: 248)

2.1.3 Reciprocal

In general, prototypical reciprocal constructions describe situations with at least two participants which *are in the identical reverse relation to each other* and *they perform two identical semantic roles (e.g. of agent and patient) each*. There are two main types of reciprocal - grammatical and lexical. Grammatical reciprocals cover morphological derivation but also a combination of a verb with words denoting 'each other' or 'mutually'.

[2] In Japanese, it is not grammatical to use the particle *o* more than once in a sentence. (Nitta 2009: 260-261)

This also includes syntactic reciprocals, for example a doubling of clauses, or clitic reciprocals - reflexive pronouns. (Nedjalkov 2007: 6-12)

In Japanese, a reciprocal may be denoted in different ways. Muraki (1991: 23-24) proposes that some verbs, such as *au,* 'meet', *niru,* 'resemble', *tatakau*, 'fight', or *kekkon suru,* 'marry', already imply reciprocation. Another way of expressing reciprocal, according to Nakao (2003: 17-23), is the adverb *otagai ni*, which roughly corresponds to the English 'each other'. This also does not change verbal valency since it may be taking the position of both indirect and direct object and also of (embedded or matrix) subject.

Another way of expressing reflexive in Japanese is the verb *au*, 'meet', used as a suffix or a final component. Reciprocal constructions require only one conjoined or plural argument, which is marker of the nominative case (the particle *ga*) or the topic marker *wa*, and it is possible to include the adverb *otagai ni*, see (6). (König and Kokutani 2006: 19-22)

(6) *Karera wa otagai ni tasuke-at-ta*.
they-TOP each.other-DAT save-REC-PST
They helped each other.

According to König and Kokutani (2006: 21), those constructions *do not only require a plural subject but also a gap in the relevant sentence. This gap indicates that the entities denoted by the subject participate in the relevant situation not only as agents, but also as patients or recipients, etc.* This gap may be filled by *otagai*. Also, the *fusion of* au *and other basic verbs and the concomitant semantic change show that the symmetric predicate* au *'meet, fit' has developed into a kind of derivational affix or reciprocal marker as a result of grammaticalization*.

Nitta (2009: 288-289) proposes classification of reciprocal constructions based on the nature of the participants. The participants may either be expressed as a singular subject and an adjunct marked by comitative (the particle *to*), e.g. (7), or as a plural subject, e.g. (6).

(7) *Tarō ga Jirō to tataki-a-u.*
Tarō-NOM Jirō-COM fight-REC-PRS
Tarō and Jirō fight (together).

Does the reciprocal suffix decrease valency? Nakao (2003: 24-42) gives examples of reciprocal constructions with verbs that retained their valency, such as (8):

(8) *Tarō to Jirō ga seki o yuzuriatta.*
Tarō and Jirō-NOM seat-ACC give-REC-PST
Tarō and Jirō gave up their seat (for each other).

The verb *yuzuru*, 'yield/give up' is transitive and retains its object, and the subject is in plural and the reciprocal meaning applies to the two subjects, Tarō and Jirō, and there is no change in valency. However, there are instances when a transitive verb marked with a reciprocal only takes a plural subject, e.g. (9).

(9) *Karera ga mitsume-atte-i-ta*.
They-NOM stare-REC-PROG-PST
They were staring at each other.

It would seem that there are semantic restrictions and verb marked by a reciprocal retains its valency more often than not. However, in some circumstances, a decrease in valency may occur. The verb *mitsumeru,* 'stare', is intransitive as well as *yuzuru*, however, *mitsumeru* in (9) without the reciprocal would take an animate object, which is here a part of *they*. It is possible to say that marking a transitive verb with animate object with reciprocal *au* may result in decrease in valency.

2.1.4 Noun incorporation

Noun incorporation is *a construction in which an argument of a transitive clause becomes "attached to" or "incorporated into" the verb*. (Payne 2006: 256) According to Kageyama (2016: 242-243), noun incorporation in Japanese is not considered a productive word formation because the number of cases detected is relatively small (65 verbs in total) and *it is difficult to form new ones*.

Also, a number of N-V compounds are fully lexicalised and treated as single verbs, such as *unazuku*, 'nod', which is also written with a single *kanji* character (頷く), and some have lost their original meaning, such as *me-zasu*, 'aim'.

According to Kageyama's (2016: 243-245) data, internal arguments are predominantly incorporated in Japanese - direct objects of transitive verbs, such as

toshitoru, ‘age’, or subjects of unaccusative verbs, such as *mezameru*, ‘wake up’. Other complements (dative complements or adjuncts) may also be incorporated, such as *medatsu*, ‘be conspicuous’, may be incorporated as well. All of them may be *roughly paraphrased by using clausal structure with appropriate case particles on the nouns*, such as *mezameru* and *me ga sameru*, ‘wake up’. On the other hand, no evidence has been found of incorporation of a transitive subject or dative subjects.

Kageyama (2016: 245-248) also points out that while *the compounding does not affect the grammatical relations of the “unincorporated” arguments* and *the nouns, once incorporated into verbs, cannot show up in duplicate in the sentence*, which seem to be comparable to the conditions of noun incorporation in polysynthetic languages (such as Ainu), there are exceptions to this rule. In contrast with noun incorporation in polysynthetic languages, the incorporated noun in Japanese is non-referential, may be an adjunct and doubling (such as *na o nanoru*, lit. ‘name name-tell’) is allowed, but only in some cases.

2.1.5 Potential

The potential suffix in Japanese is realized as *-(r)e* on consonant-stem verbs, such as *yom-e-ru*, ‘be able to read’, and as *-(r)are* on vowel-stem verbs, such as *tabe-rare-ru*, ‘be able to eat’. The irregular verb *kuru* is realized as *ko-rare-ru*. The verb *suru*, ‘do’, is realized as *dekiru*. (Nitta 2009: 277)

The potential suffix does not change the number of arguments, but affects their case depending on whether the verb is transitive or intransitive. *With intransitive verbs, their subject argument must be marked in the nominative while excluding the dative*. In the case of transitive verbs, the first argument may be marked by nominative or dative case and the second argument may be marked by nominative or accusative case, e.g. (10). However, it is not possible to mark the first argument with dative and second argument with accusative. *Regardless of whether it is marked by the dative or the nominative, the first argument (i.e. the possessor of ability) qualifies as the subject in transitive potential constructions*. (Kishimoto et al. 2015: 777-778)

(10) a. *Tarō wa eigo ga hanas-e-ru.*
Tarō-TOP English-NOM speak-POT-PRS
Tarō can speak English.
b. *Tarō wa eigo o hanas-e-ru.*

Tarō-TOP English-ACC speak-POT-PRS

Tarō can speak English.

c. *Tarō ga eigo o hanas-e-ru*.

Tarō-NOM English-ACC speak-POT-PST

Tarō can speak English.

The examples above show that the same verb, in this case the transitive verb 'speak', may take differently marked arguments where the first argument, the possessor of ability, is marked by topic or nominative particles (the dative particle is also possible). The second argument may be a subject, or an object marked by an accusative particle.

2.2 Valency adjusting operations in Ainu

The Ainu language exhibits various ways of both increasing and decreasing valency usually through affixes. There are two different devices for increasing valency - applicative and causative affixes, and five for decreasing valency - anticausative, antipassive, reciprocal and reflexive affixes, and also noun incorporation. All of them will be discussed in this chapter. In the last section, passive will be introduced, and it will be explained why it is not considered a valency adjusting operation by some linguists.

Tamura (1956: 51) proposed a model of verbal morphological structure (Table 1) which shows possible combinations of valency increasing and decreasing markers with five slots in total. The first, the second and the third slots are prefixes, the fourth and the fifth slots are suffixes. According to Tamura, only one marker can occupy each slot. It is possible to combine markers from different slots, but no verb has been documented that would have all slots filled.

Slot 1	Slot 2	Slot 3	Verb Stem	Slot 4	Slot 5
Applicative	Reflexive	Applicative		pl./sg.	Causative
	Reciprocal			tr./intr.	
	Antipassive				

Table 1: Tamura's (1956) model of verb morphological structure

As we can see, it is possible to combine different valency increasing operations, such as causative and applicative, but never valency decreasing operations which all

occupy the same slot. Later, a sixth slot was proposed (Bugaeva 2015: 445-446), based on the fact that there are productive and non-productive causatives, which can be combined with each other (see 1.2.2).

2.2.1 Applicative

Applicative is a valency increasing operation in which a peripheral participant is promoted to a direct object, which may then be referred to as an applied object. (Payne 2006: 264) In Ainu, applicative is expressed by prefixes *ko-, e-* and *o-*. Usually, an oblique object is promoted to a direct object, which results in a change in valency (this is most apparent in the change of person affixes). (Shibatani 2006: 64-67)

Some verbs do not allow applicative prefixes, such as intransitive verbs describing a change of state, for example the verb *sat*, 'dry'. On the other hand, it should be pointed out that there are even some verbs of existence and appearance which allow applicatives in Ainu, for example the verb ***e-an***, 'to live/exist **somewhere**'. The meaning of each applicative may differ depending on the base verb - they usually express location, goal, instrument, cause or purpose, manner, beneficiary, or recipient, comitative co-agent, source, instrument, path, theme or content, e.g. (11). (Bugaeva 2017: 822-823)

(11) a. ***ko-****sirepa* 'to arrive **at**'
b. ***ko-****yairayke* 'to be grateful **to sb.**'

Applicative prefixes may be paraphrased by means of dative, locative, allative, ablative, instrumental or comitative case markers, For example, 'go to' may be expressed by the particle *ta*, 'to' and the verb 'go', *arpa* (*ta arpa*), or as a single word - verb 'go' marked by applicative (*o-arpa*). The former is an intransitive verb whereas the latter is a transitive verb. Case markers are, in fact, preferred in spoken language (in contrast to what is called Classical Ainu - language of oral folklore). (Bugaeva 2004: 41-45)

There is no clear-cut difference in semantics between the three prefixes, they are usually not interchangeable on the same verbal stem and their meanings partially overlap. Additionally, different prefixes attached to the same stem may express different meanings. Between prefixes *e-* and *ko-*, the prefix *ko-* seems to predominantly express dative and comitative (with) whereas more common meanings of the prefix *e-* are reference (about), instrumental and spatial/locative, however, as stated above, meanings of prefixes overlap partially and there is also a considerable amount of exceptions. (Bugaeva 2004: 41 - 44)

It is possible to see a pattern in terms of which affix attaches to which verbs. According to Bugaeva's (2017: 822 - 824) analysis, the *e-* prefix usually connects to verbs of existence or appearance, motion, interaction/communication, emotion or creation/transformation, the *-ko* prefix to verb of motion, perception/cognition, ingesting, interaction/communication, caused motion/removal or transfer/attaching, and *o-* prefix to verb of existence or appearance, motion and caused motion or removal.

2.2.2 Causative

Ainu possesses four types of morphological or lexical valency-increasing causative suffixes. Morphological markers are productive suffix *-re* (with allomorphs *-e* and *-te*), valency retaining productive suffix *-yar* (with allomorph *-ar*) and non-productive suffixes *-ka*, *-ke* and *-V* (a vowel; its distribution depends on each verb or verb stem and is also referred to as a lexical causative, see 2.2). (Bugaeva 2015: 448)

Productive causative allomorphic suffix *-re/-te/-e* is realized as *-re* after /y/ and all vowels, *-e* after /r/ and *-te* after all consonants except /r/ and /y/. It may be applied to both transitive and intransitive verbs as either direct causative (more often) or indirect causative. Causativised transitive verbs retain its original object while their original subject becomes a second object, resulting in a double-object construction. There is also a tendency for omission of the causee object when it is clear from the context. (Bugaeva 2015: 453-462)

The majority of direct causatives are derived from intransitive verbs; more than a half of indirect causatives are derived from transitives. Some causatives derived with this suffix may be interpreted as direct or indirect depending on the nature of the causee. For example, the verb *re-e* may imply not only coercive, but also permissive causative meaning - it can then be interpreted as both 'make/let somebody eat' or 'feed somebody'. (Bugaeva 2015: 453-462)

Usually, direct causatives are derived from unmarked intransitive verbs that denote some internal or external states or processes, as shown in (12a), or intransitive verbs marked, for example, by a reflexive prefix (12b). Indirect causatives marked with *-re/-e/-te* are less common than direct causatives. They are derived either from transitive verbs or from what is called „active intransitives", such as verbs 'run' or 'dance', e.g. (12c). (Bugaeva 2015: 454-463)

(12) a. *ci-**re*** 'boil **sth**'

b. *i*-mi-**re** ‘dress **sb**’ (lit. **make sb** put on *clothes*)
c. *ray-ke-**re*** ‘**make sb** kill sb’

Less productive *-ke* and *-ka* suffixes and lexical markers *-V* may also be applied to both transitive and intransitive verbs. Causatives derived with non-productive suffixes or *-V* from transitive verbs are far less common, and typically denote some sort of connection or conjoining, such as ‘attach to’ or ‘put on’ and are non-agentive in its base form. The majority of those causatives are derived from intransitive base verbs, with the exception of *-V*, which is usually attached to a base verb root (but may also be attached to an intransitive base verb). Although those verb roots cannot stand as free morphemes, they can enter, for example, the anticausative, see (13); that is, according to Bugaeva, the reason why all derivations in *-V* should be regarded as lexical causatives. (Bugaeva 2015: 448-453)

(13) a. *mak-**ke*** (intr.) *mak-**a*** (tr.) ‘open’
b. *per-**ke*** (intr.) *per-**e*** (tr.) ‘break’
c. *kom-**ke*** (intr.) *kom-**o*** (tr.) ‘bend’

The examples given above are usually considered transitivity pairs (Kobayashi 2015, Shibatani 2006) and will be described in depth in section 3.2.

The distribution of lexical causatives *-V* and suffixes *-ke* and *-ka* differs depending on the semantics of the base verb or verb stem rather than phonetics as in the case of the *-re/-te/-e* suffix. *-V* may be attached to verbs denoting a change of state, *-ka* to verbs denoting spontaneous action, processes or states, and some emotion verbs. The suffix *-ke* is then mostly used for verbs denoting motion or some change of state verbs. (Bugaeva 2017: 826-828)

The *-yar/-ar* suffix is highly productive and can be affixed to most verbs. Unlike other causatives, it does not increase overt verbal valency, so the number of arguments stays the same and the causee is not specified but only implied. It is often used in a specific context - when a causee’s social status is perceived higher than a causer’s - as an honorific to avoid being impolite by directly mentioning the causee. (Fukuda 1956: 59-60) Fukuda (1956: 59-60) gives the following example: an old woman asked her in Ainu to write a letter, she used the verb *ka=nuye-yar rusuy*. *Rusuy* is an auxiliary verb, ‘want’, the prefix *ka=* is a personal pronoun ‘I’ realized by a prefix, *nuye* means ‘write’.

2.2.3 Anticausative

There are two anticausative affixes in Ainu, the suffix *-ke* and the prefix *si-*, however, there is very little data on this prefix. (Bugaeva 2017: 841) There is very little research into anticausatives. The *-ke suffix* appears frequently as an anticausative suffix of intransitive verbs with a transitive counterpart in mostly equipollent transitivity pairs but also as a (lexicalised) causative suffix of transitive verbs in transitivity pairs, which will be described in greater detail in section 3.2.

2.2.4 Antipassive

Antipassives are usually defined as a construction in which the object of a transitive verb is not a direct object, but a *non-core argument which is unexpressed but presupposed* instead. Morphological realization varies across languages. The antipassive and the passive are mostly not mutually exclusive. (Polinsky 2017: 1-3)

In the Ainu language, the antipassive marker, also referred to as the marker of a generalised object, is realized through the prefix *i-*, and causes an absorption of a generalized object by a verb, or it simply refers to the activity itself without an overtly expressed object (e.g. *ske*, 'knit' (tr.) becomes *i-ske*, 'do knitting'), resulting in an intransitive verb. (Shibatani 2006: 45-46)

Antipassives from both transitive and ditransitive verbs are possible, e.g. (9). Antipassives are usually derived from transitive verbs denoting either perception/interaction (for example verbs such as 'see', 'eat', 'help'), or verbs described by Bugaeva as „grooming/traditional activities" (verbs such as 'have a haircut' or 'grind'. (Bugaeva 2017: 830-831)

Antipassivized ditransitive verbs usually describe some sort of transfer, mental or physical, such as helping, and their objects are either a theme or a recipient. Usually, the theme argument is antipassivised as shown in (14). In the case of ditransitive verbs, antipassivization causes not intransitivisation but a valency decrease. (Bugaeva 2017: 830-831)

(14) a. ***i-ku*** 'to drink **alcohol**'
b. ***i-mi*** 'to wear **clothes**'

2.2.5 Reciprocal

In Ainu, reciprocal is expressed by the prefix *u-*, which can be attached to verbs and even nouns (denoting a body part or locative). Combined with *ko-* or *e-*, the applicative prefixes, they may be interpreted as mostly sociative markers. It is a widely held view that *uko-* (or *ue-*) actually functions as a single sociative morpheme since in many cases sociative-marked verbs are semantically closer to the base (unmarked) verb than the one marked with an applicative prefix alone. Sociative prefixes mostly do not alter valency in any way, since reciprocal decreases and applicative increases it. There are subject-oriented and also object-oriented reciprocals in the Ainu language. (Alpatov et al. 2007: 1754-1755, 1773)

Subject-oriented reciprocals are constructions in which the reciprocants are subjects, or one subject in plural, while object-oriented reciprocal constructions may contain a singular subject but need an object, or objects, in plural in order to be able to express mutuality. (Nedjalkov 2007: 23-24)

In subject-oriented constructions, reciprocal prefix may mark transitive or ditransitive verbs (which are then referred to as canonical and indirect reciprocals respectively), both marked and unmarked. In canonical reciprocals, the (direct) object is omitted, and the subject is always semantically plural. In indirect reciprocals, there are two objects, direct and indirect; generally, the direct object is retained, and the indirect object is deleted. The majority of canonical reciprocals are derived from unmarked transitive verbs, e.g. (15a), and there is only one documented unmarked ditransitive verb that may enter a reciprocal construction, e.g. (15b). (Alpatov et al. 2007: 1766-1770)

(15) a. ***u-****cotca* ‘shoot **each other**’
b. ***u-****erusa* ‘lend sth to **each other**’

Object-oriented reciprocals may be derived from verbs marked by causative or applicative affixes, e.g. (16). They often describe an event of joining or mixing together or comparing something, which is *typical cross-linguistically*. (Alpatov et al. 2007: 1775-1780)

(16) a. ***u-****kotuk-ka* ‘stick sth **together’**
b. ***u-****ko-tama* ‘add everything **together**’

2.2.6 Reflexive

Reflexives are described as constructions in which the subject and the object are the same entity fulfilling two semantic roles or grammatical relations. (Payne 2006: 241) There are two reflexive prefixes in Ainu, *yay-* and *si-*, e.g. (17). They are generally described as intentional and unintentional reflexive respectively, however, it has been shown that there are quite a few exceptions and that the difference between the two prefixes may not be an issue of the level of intention, but some other factors. (Sato 2007: 31-35)

(17) a. ***yay-****huymampa* 'to examine **oneself**'
b. ***si-****moye* 'to move **oneself**'

Sato (2007: 31-35) describes them as direct and indirect reflexives[3]. According to his theory, these two suffixes differ semantically based on whether or not the subject is directly involved. In many languages, reflexive is usually used to stress the direct participant, which is how *yay-* is used. However, in Ainu language, it is also possible to stress a subject that is not directly involved through the prefix *si-*. (Sato 2007: 35-38)

Kobayashi proposed a different theory based on a morphological analysis of transitivity pairs (see 2.2) and their possible markedness. Kobayashi found that while all types of verbs may be marked by *yay-*, only three groups allow *si-*, there were no confirmed cases of a possible use of *si-* in other groups. These three groups mostly include verbs describing events where the subject is affecting the object, or where the object is undergoing some kind of change. Many of these verbs are a part of a transitivity pair. It is possible that *si-* prefix distribution is not solely based on semantics, but also on morphology. However, the exact meaning and rules for distribution still remain unclear. (Kobayashi 2010: 140-154)

2.2.7 Noun incorporation

In Ainu, it is possible to incorporate either a direct object (18a), or a subject of transitive verbs (18b), or a subject of intransitive verbs (18c). In the case of an incorporation of an object, a transitive verb becomes intransitive, which also changes its

[3] 「直接的再帰接辞」and「間接的再帰接辞」

person affixes. An oblique object, usually locative or instrumental, may also be incorporated through applicative prefixes, e.g. (17d). The verb is always preceded by the incorporated noun. (Kobayashi 2008: 199-204)

(18)	a. **kam**-tuye	'to cut **meat** (intr.)'
	b. **koy**-yanke	'to be washed up by **waves** (intr.)'
	c. **kema**-pase	'to have heavy **legs** (intr.)'
	d. **nepki**-*e*-arpa	'to go *to* **work** (intr., sg.)'

Sato proposed a classification of noun incorporation into four categories – 1) incorporation of an object, 2) incorporation of a subject of an intransitive verb in the case of a natural force/phenomenon, 3) incorporation of a possessor-requiring subject of an intransitive verb or 4) incorporation of a subject of a transitive verb in the case of a natural force/phenomenon. His analysis suggests that in the Chitose dialect of Ainu, object noun incorporation is the most common whereas the three other types are comparatively rare. The least common type is the incorporation of a subject by a transitive verb expressing a natural force/phenomenon. (Sato 2016: 83-84)

According to Sato, there are some restrictions to noun incorporation - *subject restriction*, *stranding restriction,* and *ambiguity restriction*. In a sentence without an incorporated noun, the possessive affix would usually mark the noun, not the verb, whereas the person affix would mark the verb. In a sentence with an incorporated noun, on the other hand, the person affix marks the subject of the whole sentence and there is no possessive affix because the noun is incorporated. For that reason, the personal prefix must always mark a subject that is also the possessor. Sentences where personal prefix does not denote the possessor are not grammatical. (Sato 2016: 85-86)

Ambiguity restriction then probably accounts for the low frequency of transitive subject incorporation - in some cases, an incorporated noun can be interpreted as both subject and object, although it is usually clear from the context. All these restrictions affect the subject and it may be a plausible explanation for low frequency of subject incorporation described above. (Sato 2016: 86-87)

Subject incorporation is possible because of the *rescue principles*, certain conditions that need to be fulfilled for the sentence to be grammatical, *backgrounding,* and *reflexive interpretation*. For example, natural forces or body parts tend to be backgrounded *because of their lower discourse relevance compared to that of their*

possessor. Possessors of incorporated nouns are then always co-referential with the subject, so the possessor is always interpreted as reflexive. (Sato 2016: 83-84)

2.2.8 Passive

In Ainu, passive is expressed by means of a prefix *a*=, which may be traced back to the indefinite transitive subject prefix *a*=, which also exists in Ainu today. It might have developed from the indefinite intransitive subject suffix =*an*, which, according to Bugaeva, might have come from the verb *an*, 'exist'. She notes that it cannot be regarded as personal passive since the reanalysis of object to subject is incomplete, while in turn the possibility of the inclusion of an oblique actor rules out impersonal passive. However, linguists generally tend to lean towards the impersonal passive theory. (Bugaeva 2011: 517-524) For example, Satō (1995) states that Ainu passive is most similar to Russian impersonal passive.

Shibatani explains that passives in Ainu share the primary function of a prototypical passive that is the agent defocusing function - as it is either demoted or expressed as an oblique object. In addition, even though the patient is marked on the verb by means of the object affixes, Shibatani suggests that it is, in fact, a subject (because of, for example, word order) and that Ainu passive has, in fact, developed from the indefinite-person construction, but the development occurred on the semantic and syntactic level and verbal morphology remained unchanged. (Shibatani 2006: 58-60)

The reason why passive voice in Ainu is not considered a valency reducing operation by some linguists is apparent when we focus on person affixes. As previously mentioned, Ainu possesses a set of person affixes for both transitive and intransitive verbs. In (19a), a transitive verb 'see', is marked by a first person prefix referencing transitive verb object also modified by causative. In (19b), the transitive verb 'hit' is modified by a passive prefix, but the personal prefix is the same as in (19a).

(19) a. ***en***=*nukar-e* 'show sth **to me**' (lit. let me see sth)
b. *a*=***en***=*kik* '**I** was hit.'

In this case, the translation of the second example (18b) may be misleading - the *en* in both of those sentences marks a first person object, and while it is translated as a passive sentence, we can see that the verb *kik* morphologically retains its valency.

3 Valency alternations

Valency alternations or transitivity pairs are lexicalized pairs of verbs where one is transitive and the other intransitive, or, less commonly, one is transitive, and the other is ditransitive. Both verbs may be semantically similar (in most cases), but a participant is added or deleted in the valency frame. They also usually share a common morphological root. (Narrog 2016: 249) Generally, transitivity pairs can be divided into three groups - causative, anticausative, and non-directed alternations, which may be further subdivided into equipollent, labile, and suppletive alternations. (Haspelmath 1993: 91)

Causative verb pairs are pairs in which the intransitive verb is unmarked, and transitive verb is derived and may be marked by an affix, a causative auxiliary or by stem modification. Anticausative verb pairs have the transitive verb as basic and intransitive as derived and also may be marked by an affix, an anticausative auxiliary, or by stem modification. Together, they are referred to as directed alternations. (Haspelmath 1993: 91)

There are also verb pairs where neither verb is derived from the other - they are called non-directed alternations (further divided into equipollent, suppletive, and labile). In an equipollent pair, both are derived from the same verbal stem and are differently marked, suppletive verb pairs are those in which both verbs have different roots and labile verb pairs use the same verb as both transitive and intransitive. (Haspelmath 1993: 91-92)

But why are certain verb pairs derived in a certain direction? According to the semantic markedness hypothesis discussed in chapter one, simpler linguistic forms tend to be used when expressing situations that are relatively more normal or usual whereas longer, more complex forms tend to be used when expressing situations that are less so. (Jacobsen 2016: 24)

Previous studies have shown that some languages may differ in terms of preference toward either causativisation or decausativisation. (Nichols et al. 2004) In addition, there may be a semantic correlation to the morphological markedness - this may be, for example, a choice of a specific marker based on whether a given process is affected by an external or internal force or on whether the causee is animate or not. Another approach is measuring the number of particular affixes - so-called type frequency. (Matsumoto 2016: 59 - 66)

Verbs that express natural processes, such as sinking, boiling, etc., are “normally” perceived to be limited to the entity undergoing the change in question - primarily

causative. In contrast, verbs such as tear or break (intransitive marked) are events normally seen as involving an outside force and not occurring spontaneously - primarily anticausative. (Jacobsen 2016: 24)

3.1 Valency alternations in Japanese

In Japanese, the difference in transitivity in a verb pair is usually manifested formally, by affixes or other markers that distinguish transitive and intransitive members of the pair. (Kageyama and Jacobsen 2016: 3) With a few exceptions, transitive-intransitive verb pairs in Japanese also share a common morphological stem. (Jacobsen 2016: 21-50) Generally, they can be categorised as causative, e.g. (20a), anticausative, e.g. (20b), or equipollent, e.g. (20c), and most of them are semantically similar. (Nitta 2009: 23-24)

(20)	a. *ak-u* (intr.)	*ak-e-ru* (tr.)	'open'
	b. *war-e-ru* (intr.)	*war-u* (tr.)	'break'
	c. *hirak-u* (intr.)	*hirak-u* (tr.)	'open

It has been shown in the case of Japanese that synchronic and diachronic approaches to transitivity pairs produce very different results and that it is important to take historical development into consideration. In his article from 1993, Haspelmath (1993: 96 - 102) presented a list of 31 verb pairs, "*all verbs with a rather basic meaning that can be easily identified by means of a dictionary*", such as break, burn, open, gather, or melt. He then used dictionaries to gather data from 21 languages, including Japanese. According to the results, the majority of 31 pairs would be equipollent and labile alternations would be the least common ones.

However, Narrog (2016: 252) points out that Haspelmath's results may not be correct and that many of the pairs labelled as equipollent may not, in fact, be equipollent at all. As stated by Narrog, transitivity pairs in Japanese are not the result of productive morphological processes in the modern language but were already lexicalized *in the earliest historically documented stage of Japanese*. Therefore, it is difficult to explain the morphological processes by which they were formed based on the modern language.

In order to determine the actual relationship between the two verbs, it is crucial to examine them from a diachronic point of view at the time when the underlying pattern was still productive or as close as possible to that. Narrog claims that, while the line

between productive and non-productive morphology may be fluid across languages, in the case of valency alternations *the distinction is clear cut*. (Narrog 2016: 252-254)

To give an example, a theory has been proposed that the *-eru* verb ending is diachronically primal and the *-ar-u* form is derived; therefore, *age-ru*, 'raise', is basic and *ag-ar-u,* 'rise', is derived. Alternations such as *war-u*, 'break' (tr.), and *war-e-ru*, break' (intr.), have been considered productive morphology by some linguists, however, according to Narrog, those are also fully lexicalized in Modern Japanese. (Narrog 2016: 252 - 257)

It should be pointed out that there is a specific group of verb pairs, for instance 'rise' mentioned above or, for example, *oki-ru* (intr.)/*ok-os-u* (traditionally segmented as *okos-u,* tr.), 'wake up/get up', that are treated differently in terms of markedness by different scholars. Some scholars treat those verbs as equipollent with stem-ending alternations, or as equipollent pairs in which both verbs have stems neutral in causativity and take different affixes (in this case, the verb 'rise' would be written as *ag-e-ru*). Others, including Narrog, consider those pairs either causative or anticausative and treat a derived verb (in this case *ag-ar-u* and *ok-os-u*) as derived from the verb stem with the deletion of the final vowel of the root. (Matsumoto 2016: 56)

Occasionally, in some cases, a 'backformation' may occur - where the more complex word which is seemingly derived from its less complex form is, in fact, basic. In the case of non-directed verb pairs, it may also be an issue of which of the two verbs, transitive or intransitive, is historically prior, which would be the case of the verb *hirak-u* (open), where the transitive use is prior to the intransitive use. (Note that in this case, the other verb in the pair is not *hirak-e-ru* (tr.), which would be an anticausative alternation, but also *hirak-u*, which may be used both as transitive and intransitive. However, both of those pairs exist.) (Narrog 2016: 252-257)

Due to historical development, many verb pairs from pre-modern Japanese are no longer used, whereas some new vocabulary appeared. Most of the newcomers date to the 18th and the first half of the 19th century, very few verbs emerged later than that. According to Narrog's research, around 43 verb pairs have emerged in this time, more than half of them following a detransitivising pattern (transitive verb is unmarked and intransitive is derived). (Narrog 2016: 275)

On the other hand, Sino-Japanese vocabulary and Western loanwords increased exponentially. Large portion of Sino-Japanese vocabulary includes verbal nouns, which can be used both as nouns and as verbs. They do not form transitivity pairs and most of

them seem to be limited to either transitive or intransitive usage. Adding or deleting participants is achieved by adding the productive causative or the passive suffixes on the light verb *suru* (‘do’). There are some verbal nouns that, although originally transitive or intransitive, became labile, for example *kansei suru* (‘complete/be completed’). (Narrog 2016: 275 - 278) There are similar instances when Western loanwords become labile, such as in the case of *ōpun suru* (‘open’). (Nitta 2009: 27)

Matsumoto's (2016: 479-488) research, see the appendix, shows that causative verb pairs represent approximately 47.4% of 306 basic pairs from his database (although Matsumoto states that the difference does not reach a level of statistical significance, they are the most common type), with 16 different markedness types and/or affixes. Anticausative pairs represent about 38.2% of all alternations, with 11 different markedness types/affixes. Equipollent pairs are then the least common, making up ca. 14.4%, with 4 distinct markedness types.

Except for the 0/-e markedness (which appears both in causative and anticausative alternations) and -eo/0 markedness (in anticausative alternations), all causative alternations contain /s/ in transitive verbs, as opposed to /r/ in intransitive verbs in anticausative alternations. The most common markedness type in equipollent pairs is also an alternation between /r/ for intransitive and /s/ for transitive verbs. As for 0/-e markedness, it occurs in 38 verb pairs for both causative and anticausative, which accounts for around 26.2% and 32.5% respectively. (Matsumoto 2016: 479-488)

These results suggest that there are more basic intransitive verbs than derived and that derived transitive verbs have a bigger variety of markedness. There is also a clear tendency for /s/ and /r/ distribution between causative and anticausative alternations.

It seems that phonology as well as semantics play a key role in affix distribution and that the choice of a specific affix is phonologically restricted. For example, the decausativising *-e* affix in anticausative verb pairs mostly follows a consonant, or, scarcely, /i/. The *-ar* affix is mostly followed by /e/. In causative verb pairs, the *-e* affix also mostly follows a consonant. Generally, a verbal stem or a base verb final sound seems to contribute significantly. (Matsumoto 2016: 69 - 70)

There are two factors which may contribute to affix distribution - nature of the undergoer and causal nature of the change. A human or animate undergoer is most often associated with causative verb pairs, e.g. (21a), whereas an inanimate or neutral undergoer is more common in anticausative pairs, e.g. (21b). In (21a), the intransitive verb is considered basic. Semantically, waking up is often associated with a human

undergoer and although it is often used in collocation with eyes in Japanese (*me ga sameru*, lit. 'eyes wake up'), the final undergoer is still human. In (21b), on the other hand, the transitive verb is basic, and breaking is often associated with objects. In non-directed pairs, an inanimate or neutral undergoer seems to be more frequent, e.g. (21c). However, all of the alternation types include pairs with both types of undergoers; therefore, it does not seem to be the sole determining factor. (Matsumoto 2016: 60-61)

(21)	a. *same-ru* (intr.)	*sam-as-u* (tr.)	'wake up'
	b. *war-e-ru* (intr.)	*war-u* (tr.)	'break'
	c. *okor-u* (intr.)	*okos-u* (tr.)	'happen/bring about'

Verb pairs denoting a change of state may be classified into the following three groups: *[1] those representing changes that are necessarily brought about by a human being or some other external force or stimulus (inherently caused changes), [2] those representing changes that can occur naturally (naturally occurring changes), and [3] those that are neutral in this respect.* (Matsumoto 2016: 60-61)

The analysis shows that verb pairs with an external force involved are mostly anticausative, and pairs describing naturally occurring changes are mostly causative. However, verb pairs describing an event caused by an external force, for example, can be found among both causative and anticausative alternations, such as *todok-u/todok-e-ru* 'be delivered/deliver'. In any case, Matsumoto suggests that both the undergoer and the causal nature of the change contribute to the choice of markedness. (Matsumoto 2016: 61-67)

To summarise, it is possible to see a certain tendencies in terms of alternation type preference. Like other languages, basic transitive verbs in Japanese typically describe an event where an inanimate or neutral undergoer is in some way altered by an external force and basic intransitive verbs more often than not describe a human or animate undergoer influenced by an external change. It is also apparent that both semantics and phonology affect the choice of an affix and some regularities can be observed not only among the alternation types but also within each type.

3.2 Valency alternations in Ainu

In 2014, NINJAL (National Institute for Japanese Language and Linguistics, 国立国語研究所) launched an online database of (mostly) morphologically related transitivity

pairs, The World Atlas of Transitivity Pairs (WATP; 使役交替言語地図). It is a database of the 31 transitivity pairs proposed by Haspelmath as described in chapter 2, with data from around 50 languages including Ainu contributed by various linguists. The Ainu transitivity pairs list was compiled by Bugaeva and it includes 31 verbs in total (there are 2 verbs for 'open' and none for 'develop'). According to this list, there are 23 causative, 4 anticausative, and 4 equipollent transitivity pairs. (Bugaeva 2014)

However, as Kobayashi (2015: 25-37) pointed out, Bugaeva's (2014) results may not be conclusive in terms of the analysis of transitivity pairs as defined by Kobayashi because Bugaeva includes verbs based on their being marked by causative suffixes. Kobayashi argues that, since causatives marked by *-re/-e/-te* and *-ka* are highly productive and can be attached to virtually any verb, they should be excluded from morphologically related transitivity pairs.

It has also been shown that *-ka* does not directly attach to the verb root. For example, the verb *us*, 'go out (fire)', may be marked directly, e.g. *us-ka* 'put out', but when attaching any other morphemes, *-ka* will come last, e.g. *yar-us-tek-ka*, 'make sb destroy sth'. That would also be the case with the reflexive prefix *si-* which appears on the Bugaeva's list. That is the reason why Kobayashi decided to omit causative suffixes *-re/-e/-te* and *-ka*. Since causative suffixes *-V* and *-ke* suffixes are not very productive and do appear in transitivity pairs, Kobayashi refers to them as verb formation suffixes（動詞形成接尾辞, *dōshi keisei setsubiji*) instead. (Kobayashi 2015: 25 - 37)

Kobayashi proposed six possible types of transitivity pairs based of morphological markedness, as shown in Table 2: (Here, *Vs* stands for verbal stem and *-V* for vowel (see 2.2.2).)

	intransitive		**transitive**	
	sg.	pl.	sg.	pl.
Type 1	*-ke (-se)*		*-V*	*-pa*
Type 2	*Vs*		*-V*	*-pa*
Type 3	*Vs*		*-ke*	
Type 4	*-n*	*-p*	*-n-ke*	*-p-te*
Type 5	*-ke*		*-V/-ke*	
Type 6	*-ke*		*-ke*	

Table 2: *Six types of transitivity pairs in Ainu as proposed by Kobayashi (2015: 45)*

First, it is important to note certain variation in Southwestern Hokkaidō dialects. Kobayashi focused on the Saru dialect in her work, however, as she pointed out, there are several differences even among quite closely related dialects. For example, the transitivity pair with the verb stem *rew*, 'bend', would categorise as Type 1 (equipollent pair) in the Saru dialect. In the Urakawa dialect, it would be Type 6 (labile pair), and in the Mukawa dialect, it would be Type 5 (equipollent or labile alternation). Those variations occur only between labile and equipollent pairs, and never between, for example, labile and causative. In other cases (Urakawa dialect), even labile alternation with *-V* markedness is possible. (Kobayashi 2015: 45 - 49)

If we look at Table 2, we can see six different types of markedness - three causative alternations (Type 2, 3 and 4), one equipollent alternation (Type 1), one labile alternation (Type 6) and one equipollent/labile alternation (Type 5). Type 5 includes transitivity pairs in which the transitive verb may take both the *-ke* suffix and *-V*, which probably appear in the Saru dialect of Ainu as well, although they are not very frequent.

It is also worth mentioning that Type 2 is the only type of markedness which includes transitive and ditransitive verb pairs as well and that they follow the same pattern and direction as intransitive/transitive verb pairs. (Kobayashi 2015: 38 - 44) As for frequency, Kobayashi (2015: 38-49) states that most confirmed verb pairs belong to Type 1 (equipollent) with only a few verb pairs of other types (the least frequent type is Type 6 with only one pair).

We can also see that half of the types may present a singular/plural variant. As for markedness types, it is worth mentioning that the *-ke* suffix may mark both transitive and intransitive verbs. What also stands out is the Type 4 suffixes - the transitive suffixes do not attach directly to the verb stem, but rather to the intransitive suffixes. The transitive plural (*p-te*) suffix is particularly interesting - Kobayashi (2015: 40-41) states that it is derived from the singular transitive singular (*n-ke*) suffix, and is also considered a valency alternation for that reason.

It is also difficult to make a semantic distinction between different types, except for Type 4. Kobayashi (2015: 40) lists 5 confirmed verb pairs for this type and all of them denote movement, for example *ahu-n/ahu-n-ke*, 'enter/put in (sg.)' or *sa-n/sa-n-ke*, 'go down/lower (sg.)'.

If we compare the Kobayashi's definition of transitivity pairs with the Bugaeva's WATP list, we find that out of 31 verbs in total, only 9 pairs can be definitely said to be valency alternations. One verb, *rer/rer-e*, 'sink' (intr./tr.), was omitted from this list, since

it is unclear whether it is a valency alternation and not a productive causative, which realises as *-e* after /r/ (see 2.2.2). The rest of the markers are mostly productive causative suffixes realized as *-re/-te* and *-ka*, and anticausative prefix *-si*.

intransitive	**transitive**	**meaning**	**type (Haspelmath)**	**type (Kobayashi)**
sat	sat-ke	dry	causative	Type 3
mos	mos-o	wake up	causative	Type 2
sirkot	sirkot-e	connect	causative	Type 2
mak-ke	mak-a	open	equipollent	Type 1
cak-ke	cak-a	open	equipollent	Type 1
per-ke	per-e	break	equipollent	Type 1
as	as-i	close	causative	Type 2
yas-ke	yas-a	split	equipollent	Type 1
ray	ray-ke	die/kill	causative	Type 3

Table 3: *Transitivity pairs as defined by Kobayashi on the Bugaeva's (2014) list*

We can see that there are 5 causative alternations and 4 equipollent alternations in total. None of them are Type 5 alternations, which is not surprising since Kobayashi stated those types of alternations are rare across all dialects, or Type 6 (labile) alternations.

To see to what extent it is possible to mark verbs in verb pairs with other valency adjusting affixes, I decided to collect data from the Glossed Audio Corpus of Ainu Folklore[4] (Nakagawa et al. 2016), which consist of 30 Ainu folktales (*uepeker* and *kamuy yukar*) in Saru and Chitose dialects and is currently the only glossed corpus of Ainu language available.

The main limitation of the corpus in terms of identifying transitivity pairs is the understanding of transitivity pairs and minor inconsistencies in glossary, especially in the

[4] アイヌ語口承文芸コーパス

case of Type 4 verb pairs. For example, the suffixes of the verb *ra-n-ke*, 'lower (sg.)' are glossed as *INTR.SG-TR*[5], but the suffixes of the verb *sa-n-ke*, 'lower (sg.)', are glossed as *INTR.SG-CAUS*.

It was possible to confirm all valency adjusting suffixes except for the anticausative *si-*, since anticausative does not appear in the glossary at all. Transitive verbs may be marked by all valency adjusting suffixes. Although the fact that the anticausative does not appear in the corpus does not indicate that it cannot be found in Ainu at all, it might indicate that, in comparison to other affixes, it is scarce in Ainu. There are also no confirmed verbs marked by intransitivisers (Type 1 verbs mainly) that are also marked by antipassive.

They may be marked by reciprocal, but only together with applicative, or by reflexive, but only together with causative and applicative affixes or by the sociative suffix (which does not change valency, see 1.2.6). It would appear there are no other restrictions than the fact that valency of intransitive verbs cannot be decreased further. No two valency decreasing affixes also appear on one verb, which is in accordance with Tamura's (1956) table.

[5] INTR stands for intransitiviser, TR stands for transitiviser.

4 Synthesis

The following chapter will provide a comparison of the manifestation of transitivity presented in the previous chapters. First, valency adjusting operations and valency alternations in both languages will be summarised and contrasted. The final part of this chapter will attempt to draw a conclusion in relation to the concepts of the markedness hypothesis and the Ikegami's language typology presented in the introductory part of the thesis.

4.1 Valency adjusting operations

Two kinds of causative constructions are identified in both Ainu and Japanese - productive causatives and lexical causatives, which manifest as suffixes of verbs in valency alternations. Lexical causatives will be discussed later in this chapter. As for productive causatives, there is one suffix in Japanese, *-sase*, to express indirect causation with coercive or permissive meaning. In Ainu, there are two causative suffixes, if we exclude what Kobayashi (2015) identifies as *verb formation* suffixes (suffixes *-V* and *-ke*) - the productive suffix *-re* and the less productive suffix *-ka*, which is semantically restricted to verbs denoting spontaneous actions, processes or states, and emotion verbs, but differs morphologically from verb formation suffixes in that it does not attach directly to the base verb.

Japanese and Ainu causatives are syntactically similar - a new subject is introduced, whereas the original subject becomes an object. In Japanese, the object of causative constructions is marked by dative. In Ainu, a subject and an object are not marked since Ainu only marks adjuncts. In the case of Japanese transitive verbs, an indirect object of a transitive verb may only be marked by the dative particle *ni*.

The most notable difference semantically is that while the Japanese causative suffix may only denote indirect causative (with permissive or coercive permission), e.g. (22b), the Ainu causative suffix *-re* may denote both direct and indirect causation, and indirect causatives are less common than the direct causatives derived with this suffix, e.g. (22a).

(22) a. oma-**re** 'put in[6]'

b. hai-rase-ru 'make **sth/sb** enter'

[6] lit. ‚make sth/sb' enter

In the example above, both in Japanese and Ainu, the verb ‘enter’ is marked by the causative suffix. However, there is a difference in semantics. An equivallent in Japanese to the Ainu verb ‘put in’ would be *ire-ru*.

Furthermore, there is another causative construction in Ainu, expressed by means of the suffix *-yar*. It is used in honorific expressions where it is desirable to avoid mentioning the causee as a way of expressing respect for them. Japanese passive suffix is used in a similar way - valency also does not change but the suffix denotes expressing respect for the subject.

We can see that passive constructions in the two languages also differ significantly. Japanese passivization may both decrease and increase valency. In both the direct and the indirect passive, the semantic roles of the agent and the patient change - the patient is promoted to a subject, and the agent becomes an adjunct marked by dative. In the indirect passive, there is an additional argument - an object marked by accusative, which is retained from the active sentence. Additionally, indirect passive implies that the subject is negatively influenced.

Opinions on whether the Ainu passive construction changes valency or not differ among linguists. Most often it is considered an impersonal passive close to the Russian (or Polish) impersonal passive construction. A major reason for this is that the person affixes, which differ for transitive and intransitive verbs, do not change. Another major difference between Japanese and Ainu is that in Ainu, there is no explicit way of expressing negative influence on the subject by means of the passive construction.

Another construction common to both Japanese and Ainu is the reciprocal construction. In Japanese, the reciprocal *-au* alters valency in specific context - only if the subject and the object are both animate, and may act as both agent and patient, and are expressed through plural subject. In addition, Japanese may express reciprocation through the adverb *otagai ni*, ‘each other’, which may be combined with the suffix *-au*.

In Ainu, it is possible to express both subject-oriented and object-oriented reciprocals only by the prefix *u-*, and there is always change in valency. The Ainu object-oriented reciprocals are derived from verbs marked by causative or applicative, therefore valency of the base verb and the object-oriented reciprocal constructions remains the same. In subject-oriented reciprocals, the direct object is omitted, and the subject is semantically plural, similar to Japanese.

The Japanese suffix *-au* may also express sociative meaning, such as *yorokobi-au*, ‘rejoice together’. (König and Kokutani 2006: 21-22) By contrast, in Ainu, the sociative

is expressed through lexicalised prefixes *uko-* or *ue-*, which are believed to be a single sociative morpheme and do not alter valency at all.

Noun incorporation is also present both in Ainu and in Japanese. It is possible to incorporate both object of transitive verb and subject of intransitive verb in both of the two languages. In addition, it is also possible to incorporate the subject of a transitive verb in Ainu. The most notable difference is that in Ainu it is also possible to incorporate adjuncts through marking the base verb by applicative prefixes. Noun incorporation seems to be more productive in Ainu - Sato (2016: 84) identified 517 cases of noun incorporation, as opposed to 65 cases detected by Kageyama (2016: 242-243) in Japanese.

Ainu possesses other valency adjusting operations that cannot be found in Japanese, namely applicative, anticausative, reflexive, and antipassive affixes. Since anticausative prefix *-si* is not very well documented, it will be omitted, and the second anticausative suffix *-ke* will be discussed in relation to valency alternations.

Applicative is quite a unique construction, because it enables an adjunct marked by dative, locative, allative, ablative, instrumental, or comitative case to a direct object, which is not possible in Japanese. Antipassive, a valency reducing operation, is also unique to the Ainu language. It is semantically quite close to noun incorporation in that the verb in antipassive form absorbs an object, however, the object is semantically restricted depending on each verb.

The reflexive prefix in Ainu allows for a valency decrease when one (mostly animate) entity fulfils the role of both agent and patient. In contrast, Japanese manifests reflexivity lexically by means of the nouns *jibun* and *jishin*, '(one)self', or is already implied by the verb, such as *jisatsu suru*, 'kill oneself'. (Noguchi 2018) Potential construction by affix, on the other hand, is unique to Japanese, but no change in valency occurs.

Types of valency adjusting operations seem to be more frequent in Ainu than in Japanese. However, it is fundamental to note that not all operations/affixes can be combined with each other. Tamura's table presented in section 2.2 shows that only one valency decreasing prefix can mark a verb at a time and that no verb has been documented that would have all of the six slots filled. Some constructions in Ainu, such as the reflexive constructions, are expressed differently and do not change valency in Japanese. On the other hand, one important feature of the Ainu language which is not present in Japanese is that it is possible to promote an adjunct by means of the applicative prefix to a direct object.

Valency adjusting operations in Japanese and Ainu differ in that that in Japanese, most of the valency adjusting operations are semantically quite specific - the indirect passive implies some type of inconvenience and causative may imply coercion or permission, while in Ainu, there are two types of causatives and a substantial number of other valency adjusting operations.

As was established earlier, passive construction in Ainu does not change verbal valency, however, it is not semantically specific either (it is not possible to express inconvenience at all through passive construction).

Due to the lack of resources, it is difficult to determine the extent of usage of the anticausative prefix *si-*, however, decreasing valency by means of applicative (promotion of adjuncts) or direct causative seems to be more frequent. It is also possible to combine different valency adjusting affixes in Ainu, and the verb may even retain its valency when a valency increasing operation affix and a valency decreasing affix mark one verb. Combining valency adjusting operations is also possible in Japanese by means of combination of the causative and the passive suffixes, however, the resulting construction is semantically different from the direct passive construction and may only imply coercion or permission given by the agent in the position of an oblique object.

4.2 Valency alternations

Chapter 3 shows that Japanese and Ainu differ in terms of direction of derivation of verbs in transitivity pairs. In Japanese, causative, anticausative, and equipollent alternations can be found with slight preference for causation over anticausation. By contrast, Ainu shows preference for equipollent pairs, causative alternations are less common, and there are no anticausative alternations at all.

Similar to Japanese, we can see different markedness types in Ainu transitivity pairs – there are many more markedness types found in Japanese and the most common causative alternations also have the most markedness types. In Ainu, equipollent alternations are most common, however, there in only one equipollent type, in contrast to three causative types, as shown by Kobayashi (2015).

There is also a stark contrast in quantity of transitivity pairs in both languages. While Matsumoto's (2016) data consists of over 300 transitivity pairs for Japanese, Kobayashi (2015) detected far fewer cases for Ainu.

If we compare the Bugaeva's (2014) WATP list from section 3.2 to a list of Japanese valency alternations compiled by Narrog (2014), we can see a similar trend - in

Japanese, there is only one pair derived by productive (indirect) causative suffix. In addition, there are many more markedness types in Japanese that there are in Ainu. However, in Ainu, productive direct causative suffix and antipassive *si-* prefix is used far more often. This may indicate that overall, Ainu tends to have a higher preference for productive morphology.

If we compare the lexicalised transitivity pairs from Bugaeva's list (see 3.2), we can see that while some verbs are derived in the same direction, such as 'dry' or 'wake up', there are some differences. For example, some pairs may be derived in a different direction, such as 'connect', is causative in Ainu and anticausative in Japanese. Some pairs may also differ in that they are derived in one language and not in the other, such as the verb pair 'die/kill' is causative in Ainu and suppletive in Japanese.

It should be pointed out, however, that Narrog's and Kobayashi's approach to transitivity pairs differs. As mentioned in section 3.1, Narrog stresses the importance of diachronic approach to transitivity pairs, as opposed to, for example, Haspelmath, who identified valency alternations in Japanese differently and the majority of the pairs, according to his results, were equipollent.

When Narrog (2016: 249-284) examined transitivity pairs from the historical perspective, he concluded that Japanese as well as other North Asian languages, lean towards transitivisation, but the number of indeterminate (non-directed) alternations increase with time. It might be possible that a similar process occurred in Ainu as well and that verbs in the pairs which are now considered equipollent may in fact be historically derived from transitive or intransitive verbs, such as in the case of the verb 'rise' in Japanese.

It may also be said that Ainu is at a different stage of lexicalisation than Japanese. However, further data collection would be required and, in the case of Ainu, the resources regarding its historical development are extremely limited.

5 Conclusion

The analysis of lexicalised transitivity pairs in Japanese in section 3.1 confirmed the conclusion reached by various linguists (Narrog 2016, Nichols et al. 2004, Ikegami 1991) that Japanese belongs to the group of languages which tend to see intransitive verbs denoting spontaneous actions as basic more often and may be described as a 'become' language. The Ainu language may be said to be similar in this regard.

However, while causative verb pairs are most common in Japanese, followed by anticausative pairs, in Ainu, it is, in fact, equipollent pairs that are the most frequent. Also, previous section showed that pairs that are causative in Japanese are not necessarily derived in the same direction in Ainu and vice versa. However, since there are no lexicalised anticausative pairs, it is still possible to conclude that Ainu is in this respect similar to Japanese and other Asian languages.

In the case of valency adjusting operations, the comparison showed many differences between Ainu and Japanese. Most notably, applicative construction is unique to Ainu since it is not possible to promote an adjunct to a direct object in Japanese. Also, in Ainu, the causative suffix may be used in both permissive/coercive sense but also as a direct causative, semantically similar to causativising suffixes in valency alternations.

On the other hand, in Ainu, the passive construction does not change valency, although it is semantically similar to direct passive in Japanese, and indirect passive or possessive passive is not possible in Ainu. Also, the reflexive and reciprocal constructions are only encoded on verbs by prefixes and always decrease valency.

This indicates that in valency adjusting productive morphology without specific semantic meaning (such as coercion, reciprocation and so on), Japanese seems to incline towards decausitivisation by means of the direct passive whereas in Ainu, the passive construction also exists but does not change the valency and may increase the number of arguments not only by introducing a new object through a direct causative suffix but also promote an adjunct by the means of an applicative prefix.

In conclusion, both languages fall under the same category based on both the markedness hypothesis and the Ikegami's linguistic typology. However, regardless of their general tendency to derive transitive verbs from intransitives, there are many differences, such as the absence of anticausative alternations in Ainu, or the differences in productive morphology, most notable of which is the widely used applicative construction.

There are several limitations to this study. Firstly, it is important to mention that there is quite a small number of studies on the Ainu language, specifically on valency alternation, and judging by the way verb formation suffixes are glossed in the corpus (see section 3.2), it seems that a unified approach has yet not been reached. The lack of resources for diachronic study of Ainu seem to be a major limitation as well since it is not possible to compare historical development of Ainu to that of Japanese.

Also, a greater focus on both productive morphology and the way Japanese and Ainu derive transitivity pairs other than causative could produce interesting findings and could be further explored in future research, as well as, for example, the influence of Japanese on Ainu Another interesting topic, which was briefly mention in my thesis, would be to further contrast transitivity in different dialects of Ainu – specifically, whether different dialects show different preference for the direction of derivation, and whether this difference would be geographical (for example between Hokkaidō dialects and Kurile/Sakhalin dialects).

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Appendix: Summary of Matsumoto's research

Following tables (1-3) show the results of Matsumoto's (2016: 479-488) research – each markedness type for all alternations including an example for each type.

type	affix & stem-final sound	quantity	intransitive V	transitive V
causative	(e)/-as	43	出る	出す
			晴れる	晴らす
	0/-e	38	痛む	痛める
			沈む	沈める
	0/-as	32	動く	動かす
			沸く	沸かす
	(i)/-as	6	生きる	生かす
			閉じる	閉ざす
	0/-se	5	着る	着せる
			見る	見せる
	(i)/-os	5	起きる	起こす
			落ちる	落とす
	0/-ase	3	合う	合わせる
			覗く	覗かせる
	(e)/-akas	3	甘える	甘やかす
			脅える	脅かす
	0/-os	2	滅ぶ	滅ぼす
			及ぶ	及ぼす
	(e)/-ase	2	震える	震わす
			拗れる	拗らせる
	0/-kase	1	寝る	寝かせる
	(e)/-as (irreg.)	1	消える	消す
	(e)/(aw)-as	1	紛れる	紛らわす
	(i)/-us	1	尽きる	尽くす
	(ow)/-os	1	潤う	潤す
	(aw)/-as	1	賑わう	賑わす
	total:	145/306	(47,4%)	

Table 1: Markedness types of causative alternations.

type	affix & stem-final sound	quantity	intransitive V	transitive V
anticausative	-ar/(e)	59	温まる	温める
			教わる	教える
	-e/0	38	開ける	開く
			抜ける	抜く
	-ar/0	8	挟まる	挟む
			繋がる	繋ぐ
	-are/0	2	生まれる	生む
			分かたれる	分かつ
	-are/(e)	2	捕らわれる	捕らえる
			別れる	分ける
	-or/(e)	2	籠る	籠める
			温もる	温める
	-ore/(e)	2	埋もれる	埋める
			埋もれる	埋める
	-or/0	1	積もる	積む
	-eo/0	1	聞こえる	聞く
	-ir/(e)	1	混じる	混ぜる
	-ar/(awe)	1	捕まる	捕まえる
	total:	117/306	(38,2%)	

Table 2: Markedness types of anticausative alternations.

type	affix & stem-final sound	quantity	intransitive V	transitive V
equipollent	r/s	22	転がる	転がす
			回る	回す
	re/s	18	現れる	表す
			隠れる	隠す
	r/se	3	乗る	乗せる
			寄る	寄せる
	ri/s	1	借りる	貸す
	total:	44/306	(14,4%)	

Table 3: Markedness types of equipollent alternations.