

How the actional suffix chain connects Japanese to Altaic

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In the much debated Japanese-Altaic affiliation question linguists seem to agree on at least one point: comparative morphology can contribute to unravelling the problem. The present paper studies verbal morphology. The aim is to relate Japanese derivational and actional suffixes to Altaic equivalents. The observation made in Johanson (1992: 2002) about the conservatism of the positions close to the primary stem is taken as a methodological prerequisite. By undoing the lexicalization that took place in the verbs of Old Japanese, an actional suffix chain is reconstructed. In the body of the article Altaic cognates are proposed for the reconstructed suffixes. The stability of the proposed cognates is assessed in terms of general cohesion and systematics, parallelism of combinational patterns, equivalence of the basic parts of speech, phonological correspondences and semantic latitude.

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1. Introduction

The linguistic origin of the Japanese language is among the most disputed questions of language history. Attempts have been made to establish a genetic relationship between Japanese and a vast variety of languages and language families. In fact, there is no other language in the world which could claim a wider range of attempts in this matter. Hypotheses have been presented, connecting Japanese to Sumerian, Indo-European, the Papua languages, Austro-Asiatic, Sino-Tibetan, Tamil, Ainu, Austronesian, Altaic. In the past decades, interdisciplinary research, joining the forces of archaeology, genetics, physical anthropology and general linguistics, has advanced serious support for setting up an Altaic hypothesis of Japanese language origin. The Altaic hypothesis for Japanese refers to the idea that Japanese is related to Korean and to the Tungusic, Mongolic and Turkic languages. The cover term 'Altaic' can be used in reference to this large group of adjacent languages, stretching from the Pacific in the East to the Black Sea in the West, because they share a number of properties. Using the term 'Altaic' does not necessarily presuppose that the shared properties are attributable to common ancestorship.

Linguistic literature reflects a wide range of opinions on the Altaic question for Japanese, ranging from a negative stance over a neutral or agnostic attitude to a posi-

tive stance.¹ Given the lack of consensus in the field, Robbeets (2005a) presents a state of the art for the etymological evidence relating Japanese to Korean, Tungusic, Mongolic and Turkic. The different Altaic etymologies proposed in the scholarly literature are assessed in terms of phonological and semantic regularity and plausibility. The investigation of the lexical evidence roughs out Japanese as a member of the Altaic family. However, very few cognate morphemes withstand the sifting process. The morphological evidence is severely underrepresented vis-à-vis the lexical evidence. And yet, in well-established language families like Indo-European shared morphology is particularly telling. Safe comparative historical linguistics requires intercourse between stems and suffixes, it requires lexical evidence to be confirmed by morphological evidence.

The fact that morphology yields poor results in the Japanese-Altaic case can partly be attributed to a number of structural features, such as the agglutinative nature of the languages involved, frequent processes of grammaticalization, the monosyllabicity of the morphemes. But it is also a consequence of our over-emphasis on lexical research during the last century. Exceptions are Ramstedt 1912, 1952, Poppe 1972, Baskakov 1981, Kormušin 1984, but these studies do not include Japanese data. Particularly in Ramstedt's work some of the proposals are outdated in the light of more recent contributions to the description and reconstruction of the individual languages and language families.

Comparative studies of Altaic morphology including Japanese are rather limited, either by the scope of the study or by the number of branches under comparison. Even in a massive collection of Altaic look-alikes like Starostin, Dybo & Mudrak (2003), the main focus is on lexical etymologies, and only peripheral attention is paid to morphological evidence. The most extensive treatment of Japanese morphology in relation to Altaic can be found in Miller's work with a study of deverbal verb suffixes (1981), denominal verb suffixes (1982), negation (1971: 245-284, 1985), gerunds (1971: 285-291) and case (1993). Menges treats transitivity pairs (1975: 32-35), negation (1975: 96-109, 1984: 262-263), gerunds (1975: 110-111) and case (1960, 1975: 111-121, 1984: 245-247). Vovin (1998) provides a sketch of comparative Altaic morphology for Japanese, but in a later article (2001) he restricts the same evidence to an exclusively Korean and Tungusic context. Finally (2005) he claims to end the Altaic controversy, implying a wholesale rejection of his former contribu-

¹ Doerfer (1963-1975, 1974), Unger (1990), Nichols (1992), Janhunen (1992, 1994), Kiyose (2002), Shōgaito (2002), Vovin (2005) argue against the hypothesis that Japanese is an Altaic language. Lewin (1989: 114), Shibatani (1990: 118), Comrie (1990: 856), Lyovin (1997: 114), Johanson (1999: 2), Trask (2000: 16), Lee & Ramsey (2000: 5) remain undecided. Ramstedt (1924), Murayama (1975), Miller (1971), Menges (1975), Miller & Street (1975), Street (1977), Finch (1987), Starostin (1991), Vovin (1994), Kortlandt (1997), Ramer, Vovin & Sidwell (1997), Sohn (1999: 22), Wang & Ogura (1999), Itabashi (2001), Starostin (2003) argue in favor of the hypothesis.

tions. Finch reconstructs Altaic verb classes (1987) and deals with case (1985, 1999). Case is by far the most exploited area of Japanese-Altaic comparative morphology, including an early study by Murayama (1957) and a number of contributions by Itabashi (1988, 1989, 1990, 1991). Binary comparisons of Japanese and Korean morphemes are found in Whitman (1985) and Martin (1968, 1990, 1991a).

Among the articles centered on Japanese morphology in relation to Altaic, many are restricted to a certain subproblem or to a preliminary exploration of the matter. Others are partial or small-scale investigations including binary comparisons between Japanese and Korean, eventually adding Tungusic to the initial set-up of the hypothesis. Genetic divergence can be pictured as the rings formed when a stone is thrown into the water. Innovations start in the centre of a linguistic area and push the older forms towards the periphery. Therefore we expect to find traces of conservative elements in geographically and linguistically remote areas, for instance in Japanese and Turkic, but not in the other Altaic languages. This observation urges for a global, holistic approach to the matter.

Although valuable work has been carried out by scholarship in the past, in-depth and broad-scale research that systematically compares Japanese morphemes to Altaic is still lacking. Even if the Altaic field is known for its -at times heated- debates, many scholars seem to agree at least on one point, namely that morphology is a topic which could contribute to unravelling the Altaic question.

2. Theoretical prerequisites

2.1. Why actionality?

A genetic argument follows a negative argumentation. It works by elimination (Harrison 2003: 215). Arguing for or against a linguistic unity consists in the presentation of a set of similarities holding between the languages compared. If the similarities are significantly regular we can, with a certain degree of probability, exclude sheer chance as their motivation. A genetic argument further consists in the demonstration that the shared properties are not the result of universal tendencies in linguistic structuring or language contact. The elimination of universals and borrowings is based on the tendency of some parts of the language to be more stable and conservative than others.

Morphemes are more resistant to borrowing than lexemes. Unbound morphemes are more readily copied than bound morphemes. Verbal morphology is more stable than nominal morphology. The description of borrowability as a relative tendency leads to the assumption that bound, verbal morphemes provide rather reliable evidence to demonstrate common ancestorship. Johanson (1992, 1999, 2002) has further refined our notion about borrowability -and hence genetic stability- defining a restricted core of verbal inflectional affixes that is highly telling in matters of genetic

relatedness. Johanson (1999: 8) finds that “In the verbal flexion, suffixes closest to the primary stem, markers of actionality and diathesis, seem relatively little susceptible to copying. It would be a strong clue to a common origin if this ‘intimate’ part of verbal morphology exhibited systematic correspondences of materially and semantically similar morphemes with congruent combinational patterns.”

In his foreword to Johanson (2002), Comrie (2002: xi) highlights that “... in particular the extreme resistance to copying of the positions closest to the verbal stem might provide a more reliable tool than many of those used in the past to whether there are indeed shared elements that testify to genetic relatedness, ..., among the groups of languages that constitute Altaic.” Using Johanson’s findings as a methodological guideline I am confident that actional suffixes provide a reliable starting point to study verbal morphology relating Japanese to Altaic.

The convincing power of morphological evidence is a matter of competing forces. A major weakness is the fact that the compared units are monosyllabic, if not monophonemic. This raises the chance of accidental similarity. Another reservation is that the number of actionality morphemes in use is low. The formal correspondences will not be recurrent enough to establish phonological correspondences. A morphological study like the one I intend to undertake is ideally preceded by the establishment of regular sound correspondences on the basis of lexical data. For this purpose I refer to Robbeets 2005a. A third point of issue is that lexicalization in progress can obscure the original meaning of the morpheme under inspection. This can lead to inaccurate semantic reconstruction.

The weaknesses of the evidence are overpowered by the strengths. The occasional monophonemic structure makes it more difficult to pronounce the morpheme in isolation. The low number of applicable units increases the frequency of use. The lexicalization in progress leads to mapping intransparency. When the relationship between form and meaning becomes less clear, the suffix is not easily perceivable as a distinct unit. These factors make the actional suffixes more resistant to borrowing. The stability of the evidence is also interrelated with boundness, the internal position, occasional variant allomorphy and low semantic redundancy. These factors decrease the perceptibility of the actional suffix and its susceptibility to phonological erosion.

The power of shared morphology is less in the individualism of a single match than in the determinism of the system of matches as a whole. A convincing argument for genetic continuity is when several elements known to be quite unsusceptible to borrowing are retained together. Hence, the strength of the evidence also lies in its overall cohesion within a paradigm.

2.2. What is actionality?

Actional suffixes derive verbs from lexical stems and modify the basic meaning of this stem. Morphological derivation and semantic modification characterize actional-

ity. German, for instance, is particularly rich in actionality, such as verbal diminutive (e.g. *lächeln* ‘laugh a little’ from *lachen* ‘laugh’), intensive (e.g. *verspüren* ‘feel consciously’ from *spüren* ‘feel, sense’), inchoative (e.g. *abfahren* ‘start the action of driving’ from *fahren* ‘drive’), resultative (e.g. *aufessen* ‘conclude the action of eating’ from *essen* ‘eat’), iterative (e.g. *Heulerei* ‘constant bawling’ from *heulen* ‘bawl, howl’), momentaneous (e.g. *aufschreien* ‘cry out, cry loudly and shortly’ from *schreien* ‘cry’), durative (e.g. *fliegen* ‘fly’ vs. *durchfliegen* ‘fly nonstop’). On the basis of semantic criteria we can distinguish between three types of actionality, according to (1) the degree of intensity of the event (e.g. low in *lächeln* vs. high in *verspüren*), (2) the frequency of occurrence of the event (e.g. once in *abfahren* vs. multiple in *Heulerei*), (3) the development of the event in the course of time (e.g. limited in *aufschreien* vs. delimited in *durchfliegen*).

Can we refer to the suffix class under inspection as actionality? For deverbal verb derivation the answer is positive in reference to Steinitz (1981: 41): “... das Vorhandensein einer grammatischen Beziehung zwischen einfachem und abgeleitetem Verb, die mit der semantischen Beziehung zwischen aktionsartneutraler Grundbedeutung und zusätzlicher Aktionsartmodifizierung korreliert, [ist] konstitutiv für die Annahme einer Kategorie ‘Aktionsart’ in dem System einer Sprache”. Is it also justified to include derivational suffixes, suffixes that derive verbs from nouns, adjectives and adverbs in the present study? In the Japanese verb derivation below, it is observed that a number of deverbal actional suffixes have counterparts in denominal, deadjectival or deadverbial derivation. They are formally, semantically and combinationally equivalent. Actional suffixes such as the processive pJ **-na-*, the inclinational pJ **-ma-* and the inchoative pJ **-ka-* also function as derivational suffixes. The same tendency is perceptible in the other Altaic languages. For the present purpose it is relevant to treat these derivational suffixes under the denominator of actionality, regardless of the word class of the derivational base.

Actionality can be distinguished from diathesis. Diathetical suffixes do not only modify the meaning of the preceding segment, they also alter the valency of the base verb. They can predetermine the syntactic environment of the verb in placing certain requirements on the surrounding constituents. Diathetical suffixes are suffixes of voice such as medial, reflexive, reciprocal, cooperative, passive, causative, intransitive, etc. They logically occupy a position following the actional suffixes in the suffix chain.

Actionality contrasts with aspect. Where actionality is the difference between *work* ‘spend time and energy’ and *work out* ‘successfully spend time and energy’, aspect is the difference between *I worked on morphology* and *I was working on morphology as Lars entered*. Actionality derives verbs from any lexical stem, whereas aspect operates exclusively on verbs. Actionality modifies the base semantically on word level, whereas aspect gives a different viewpoint on the expression on sentence level. The semantic modification characteristic for actionality can relate to the tem-

poral development of the event, but it can also characterize the degree of intensity or the frequency of occurrence. Aspect only refers to the internal temporal structure of the sentence. Actional suffixes logically precede markers of voice and negation, whereas aspect markers follow them. Actionality is usually expressed by affixes, i.e. morphological means, as opposed to aspect, which is expressed by verb forms, i.e. lexical means. Actionality is lexicalization in progress. It gradually converts separate morphemes into lexical distinctions in verbal meaning. Aspect, on the other hand, is grammaticalization in progress. It systematically develops a grammatical status for formerly independent lexemes.

Lexicalization in progress explains why the actionality suffixes are meagerly represented and are lacking productive members in the contemporary Altaic languages, while they are somewhat better distinguishable in the oldest written stages. If we are able to undo the lexicalization, the actional suffixes should be reconstructable as separate morphemes for the individual proto-languages. The reconstruction of the actional morphemes in the individual proto-languages will be based on internal data alone. For well-established language families like Indo-European, it is methodologically sound to switch back and forth between internal and external evidence. However, for language families like Altaic, where the actual genetic relationship is still a matter of debate, the two-way traffic of external and internal evidence becomes a methodological paradox. Since presupposing an Altaic genetic unity would be methodologically circular, I do not reconstruct actional suffixes in reference to external comparative evidence.

2.3. Noun, adjective, verb

In Altaic literature we find a misconception relating to the distinction between nouns and verbs. In my opinion this misunderstanding curbs progress in the comparative study of derivational and actional suffixes. Miller (1982: 391) contends that “Japanese does not invariably exhibit the same rigid distinction between nominal and verbal roots, stems and suffixes that is seen e.g., in Turkic and Mongolian. In this respect, then, Japanese of all historical periods is significantly closer to Tungusic...”. This viewpoint elaborates on Menges’ (1978: 289) observation about Tungusic that “there is a relatively great number of stems which basically are neither exclusively verbal, nor exclusively nominal, so that they can function in either capacity”. The idea that there is an interface between nouns and verbs is incorrect. Japanese, Korean and Tungusic reference grammars clearly distinguish nouns and verbs as distinct parts of speech, and there is no reason to suppose that the distinction worked in a different way in earlier periods. Verbs indicate phenomena which take place during time: activities, processes, states. They are morphologically marked by categories of voice, aspect, mood, tense and person. Grammatically they are the center of the sentence because of valency. Nouns refer to entities such as animates, body parts, physical objects, and natural phenomena. They take specific inflectional morphology for

number, case and possessive and they are characterized by typical derivational patterns. Grammatically, they serve as the heads of noun phrases.

However, studies on individual Altaic languages do not systematically describe adjectives as a discrete word class. The Japanese adjective is sometimes called a quality verb (Vovin 2003: 187) because it is like the verb in attaching endings to mark syntactic function. Adjectives such as J *aka-* ‘(be) red’, OJ *aka-* ‘(be) clear, bright, red’, J *taka-*, OJ *taka-* ‘(be) high’, J *kata-*, OJ *kata-* ‘(be) hard, tough’ have a conjunctive form J, OJ *aka-ku*, *taka-ku*, *kata-ku*, a conclusive form J *aka-i*, *taka-i*, *kata-i*, OJ *aka-si*, *taka-si*, *kata-si* and an attributive form J *aka-i*, *taka-i*, *kata-i*, OJ *aka-ki*, *taka-ki*, *kata-ki*. The adjective can enter nominal compounds as an uninflected stem, e.g. J *akatonbo* ‘red dragonfly’ (< *aka-* ‘(be) red’ + *tonbo* ‘dragonfly’), OJ *takayama* ‘high mountain’ (< OJ *taka-* ‘(be) high’ + *yama* ‘mountain’). A common view (Unger 1977: 55, Unger & Tomita 1983, Martin 1987: 802, 807) is that the Japanese adjective inflection is a relatively young phenomenon. This viewpoint does not exclude the possibility that the quality verbs were originally a subclass of verbs. Martin (1987: 802) remarks that “The adjective stem is not so free as the noun (you don’t name things with it), but it is more independent than the verb stem.” However, quality verbs can be kept clearly distinct from nouns. They are semantically different because they describe properties of entities whereas nouns refer to entities. They are also morphosyntactically distinct. A number of quality verbs have nominal counterparts which refer to entities that bear the property or to abstract concepts that express the property, but they are derived by morphological means, e.g. J *take*, OJ *take₂* ‘stature; height’ (< **taka-* ‘(be) high’ +-(C)*i* nominalizer). In case of zero-derivation, when stems of Japanese quality verbs are used as nouns, there is a difference in accent register (e.g. J *aka-* A ‘(be) red’ and *aka* 2.5. ‘redness’). This has led to the reconstruction of an original denominal suffix *-*m* that became abraded, e.g. *aka* 2.5. < pJ **aka-m*. (Polivanov 1924: 146, Vovin 1994: 250, 2001: 187).

Quality verbs can be distinguished on the basis of their morphosyntactic behavior from another class of adjectives that does not take inflectional morphology and that follows different derivational patterns. Adjectives such as J *sizuka na*, OJ *siduka nar-* ‘quiet’ are defined by some Japanese linguists as *keiyoudousi* ‘adjectival verbs’, by some western scholars as adjectival nouns (Martin 1991b: 176-77, Kaiser 2001: 5, Vovin 2003: 93) and by others as *na*-adjectives (Takeuchi 1999: 81, Backhouse 1984). They are modifiers that require the modifying form *na* or the adverbial form *ni* of the copula in contemporary Japanese. In Old Japanese they are followed by various forms of the copula *nar-* ‘be’ or by *ni*, an adverbial form of the defective verb *n-* ‘be’. Some *na*-adjectives have underived nominal counterparts that refer to entities that bear the property or to abstract concepts that express the property (e.g. J *heiwa na* ‘peaceful’, *heiwa* ‘peace’). The nominal counterpart can take nominal inflectional morphology, such as for instance the genitive case *no* in *heiwa no sisyā* ‘messenger of peace’ in comparison to the adnominal form *na* in *heiwa na kuni*

‘peaceful country’. On the basis of semantics (description of properties vs. reference to entities), grammatical position (modifier vs. head) morphosyntax (adjectival vs. nominal morphology) *na*-adjectives can be distinguished from nouns. In what follows I will refer to quality verbs (e.g. OJ *kata-* ‘(be) hard’) and adjectives (e.g. OJ *siduka* ‘quiet’). Semantically, quality verbs are a subclass of adjectives.

The Korean adjective is inflected and it is considered a subclass of the verb (Martin 1992: 89). In Korean linguistic terminology, ‘adjective’ is used in reference to a quality verb, a descriptive intransitive verb (e.g. K *pwulk-*, MK *pulk-* ‘be(come) red’, K *kwut-*, MK *kwut-* ‘be(come) hard’, K *noph-*, MK *nwoph-* ‘be high’). The stem of a quality verb cannot stand alone. Some of the descriptive verbs can be traced back to derived nominal roots (e.g. K *mwulk-*, MK *mulk-* ‘be watery, be thin’ < MK *mul* ‘water’) or to derived verbal roots (e.g. K *wusup-* ‘be comical’ < K *wus-* ‘laugh’). Others are original quality verbs or descriptive extensions from originally processive intransitive verbs (e.g. K *cala-*, MK *cola-* ‘reach, grow; be sufficient, be enough’).

Among the descriptive verbs, there is a subclass of adjectives such as K *kanan ha-* ‘be poor’, *phikon ha-* ‘be tired’, *ttattus-ha-* ‘be warm’, *kkaykkus-ha-* ‘be clean’, *kattuk-ha-* ‘be full’. Only by combining the auxiliary *ha-* ‘do, be’ can they be inflected. Their roots are called ‘adjectival nouns’ (Martin 1992: 189, 190; Sohn 1999: 206). In general no case suffix can be inserted between the root and the auxiliary *ha-* ‘do, be’. Only a few roots such as K *kanan* ‘poor; poverty’ or *phikon* ‘tired; tiredness’ can serve also as free nouns referring to an abstract concept and are separable from *ha-* by the particle *to* ‘also’. The so-called ‘adjectival nouns’ describe properties of entities such as dimension, value and color. They occupy a modifier position and they rarely take nominal morphology. Therefore, and for reason of uniformity in the comparative context, I will use the term ‘adjective’ in reference to forms like K *kanan* ‘poor; poverty’ and I will refer to forms like K *kwut-* ‘be(come) hard’ as quality verbs.

A common conception is that adjectives cannot be distinguished in Tungusic. Gorelova (2002: 145) finds that “Since their main function, which is the attributive one, is not manifested morphologically, the nouns of quality cannot be opposed to other nouns and be defined as adjectives as a part of speech”. However, following the semantic, distributional and morphosyntactic criteria described in Dixon (1982) and Johanson (2006), the Tungusic adjectives constitute a distinct word class. Tungusic adjectives describe properties of entities, such as dimension, value, color. They can secondarily refer to entities that bear the property or to abstract concepts expressing the property, e.g. Ma. *ajige* ‘little, small, younger; the little one’, Ma. *den* ‘high, tall; height’, Ev. *gugda* ‘high, height’, Ev. *aya* ‘good, well; kindness; the good one’. The adjectives occur in a modifier position, although they can sporadically function as a head and take nominal morphology. Adjectives make use of intensifying and deintensifying elements and they can enter comparative constructions. Some adjectives

govern case, taking a second argument apart from the subject (e.g. Ud. *xoyto* (+ablative) ‘different (from)’).

A number of Tungusic verbs such as Ma. *aka-* ‘be sad, grieve’, Ma. *bere-* ‘be dumbfounded by fright or anger, be lame’, Ma. *fere-* ‘become old, become deaf, become dizzy’, Evk. *tila-* ‘become exhausted’, Ma. *tuli-* ‘be overdue, run over a deadline, expire’, Evk. *obdo-* ‘become spoiled (of meat)’, Even *obda-* ‘become tired, weaken’, Neg. *obolo-* ‘become poor’, Ma. *obdo-* ‘become tasteless’ denote properties of entities. I will specify them as quality verbs and use the cover term ‘adjective’ for parts of speech such as Ev. *gugda* ‘high, height’.²

With the exception of Moghol and Mangghuer, which clearly distinguish adjectives as a separate part of speech, probably due to the impact of foreign influence, adjectives are generally thought to be undefinable as a distinct word class in the majority of the Mongolic languages. It is commonplace to describe the adjective as a subgroup of nouns in Mongolic linguistic literature. This viewpoint is, among others, found in Poppe (1954: 40) “There is no morphological difference between substantives and adjectives; all adjectives occur in only one constant form. All words expressing things can function as adjectives and all words expressing qualities can function as substantives, e.g. *modun* ‘tree’ and ‘wooden’, *mayu* ‘bad’ and ‘evil’” and in Janhunen (2003:10) “There [in Proto-Mongolic] were two major parts of speech which may be identified as nouns (nominals) and verbs (verbals), combined with two separate sets of suffixes, respectively. ... Adjectival words were also basically nominal, though their derivatives could function as verbs, ...” In what follows, however, I will distinguish between nouns and adjectives on the basis of their semantic, distributional and morphosyntactic behavior. Although they can secondarily refer to entities bearing a property or to abstract concepts denoting the property, adjectives mainly describe properties of entities, such as e.g. WMo. *gün* ‘deep; depth’, WMo. *öndür* ‘high, tall, height’, WMo. *ulayan*, Khal. *ulān* ‘red; redness, the red one’. In the noun phrase, adjective-plus-noun constructions are not exclusively, but typically found. Certain derivational patterns are specific to adjectives.

Mongolic has a separate class of adjectives that grammatically behave like verbs such as WMo. *ayu-* ‘be(come) frightened, fear (intr.)’, WMo. *bayas-* ‘be happy, content, rejoice (intr.)’, WMo. *cad-* ‘be(come) saturated, be ripe’, WMo. *ice-* ‘be/feel ashamed’, WMo. *qata-* ‘become hard, dry (intr.)’, WMo. *qala-* ‘be(come)/feel warm’, WMo. *soyta-* ‘be(come) drunk, intoxicated, be in a rut’. In the comparative

² Apart from the quality verbs, there are a number of contemporary adjectives that may be of verbal origin as well. On these adjectives, Benzing (1955a: 1037) remarks: “Bei den von den Verben abgeleiteten Formen finden wir einige, die auf das Vorhandensein ehemaliger Zustandsverben hinweisen, wie wir sie z.B. im Koreanischen und im Giljakischen finden: lam. *gel.sa.n* ‘(es) ist kalt’ (Aorist, nur prädikativ gebraucht) ~ lam. *gel.sī* (=udh. *gili.hi*) ‘kalt’ (< ‘kalt seiend’, Part. aor., nur attributiv verwendet), ...”

approach below, I will distinguish between quality verbs (e.g. WMo. *qata-* ‘become hard, dry’) and adjectives (e.g. WMo. *öndür* ‘high, tall, height’).

Similar to the analysis of the parts of speech in Tungusic and Mongolic, the adjectives in Turkic are often considered a subclass of nouns. Erdal (2004: 143) remarks: “The term [nominals] covers nouns (including proper nouns), adjectives, pronouns and numerals. We speak of ‘adjectives’ as a special sub-class because there is an (admittedly fuzzy) semantic distinction between the two classes: Adjectives tend to denote qualities and are used for referring less frequently than nouns.” Another rejection of the distinction between noun and adjective is found in Grønbech (1936: 24, 26-27). The borderline between the two word classes, roughed out by Gabain (1950: 64, 148), is specified by Johanson (2006). He defines the adjective as a distinct word class with respect to semantic and distributional features, morpho-syntactic behavior and certain derivational characteristics. Adjectives primarily describe properties of entities, while their secondary and tertiary semantic function is to refer to entities that bear the property and to abstract concepts, e.g. OTk. *kizil* ‘red’, MTK. *kizil* ‘red, intense; a kind of red bird’, OTk. *täriñ* ‘deep; depth’, OTk. *bädük* ‘big, great; greatness’. They typically occupy the modifier position and take specific adjectival morphology. They are modified by adverbs and may be used as adverbs, can govern case, are marked for comparative degrees, take (de)intensifying elements and reduplicate as intensives.

Turkic has a separate class of adjectives that are similar to verbs in their grammatical behavior, e.g. OTk. *bädü-* ‘be(come) big, great’, OTk. *isi-* ‘be hot’, OTk. *kat-* ‘be hard, firm, tough’, OTk. *kiz-* ‘be red’, OTk. *tumli-* ‘be cold’, OTk. *tinči-* ‘be(come) putrid, smell foul’, OTk. *us-* ‘be thirsty’, OTk. *yeni-* ‘be(come) light’. It can be remarked that a number of adjectives can ultimately be derived from quality verbs, e.g. OTk. *kizil* ‘red’ from OTk. *kiz-* ‘be red’, OTk. *bädük* ‘big, great; greatness’ from OTk. *bädü-* ‘be(come) big, great’. In what follows I will distinguish between quality verbs (e.g. OTk. *kat-* ‘be hard, firm, tough’) and adjectives (e.g. OTk. *täriñ* ‘deep; depth’).

The derivational and actional suffixes studied in this article are devices for morphological derivation and semantic modification. A clear-cut definition of the part of speech to which the derivational base belongs is essential for their reconstruction and comparison. On the basis of the criteria discussed here, nouns, adjectives and verbs can be distinguished anywhere in Altaic. Although quality verbs form a subclass of verbs from a morphosyntactic point of view, semantically they are a subclass of adjectives. The semantic reconstruction of the actional suffixes will be more accurate if we treat the quality verbs along with the other adjectives.

3. Reconstructing actionality in Japanese

Many Japanese verbs appear to be simplex at first glance, but internal analysis reveals that they are covert complex verbs resulting from adding one or more suffixes

to lexical roots. Due to processes of lexicalization, the meaning that an individual suffix adds to the neutral base is often obscured. This can account for the reason why analyses of the Japanese verbal inventory such as Martin (1987: 665-800) reconstruct the suffixes formally and combinationally but leave the semantics open. Unger (1977: 127-142) provides a material reconstruction and adds a broad semantic tag, i.e. *-ra-* spontaneous action, *-ya-* passive, *-na-* ‘be the same as’, *-ma-* seemingness or attempt to achieve, *-ka-* punctual or iterative action. The reconstruction of actional suffixes in this section formally confirms Martin’s and Unger’s previous findings. The approach differs from the previous ones because it separates the suffixes according to the word class of the base before an attempt is made to pinpoint the meaning. The resulting semantic description refines Unger’s former reconstruction. The present analysis accounts for formal, semantic, combinational and derivational characteristics. Due to the simple phonological structure of the Japanese language, there are many homophonous forms in the lexicon. The same tendency is expected in the morphology. Homophony in one stage of the language may have been polysemy in another. Taking into account derivational and combinational characteristics can prevent us from lumping together homophonous morphemes.

The four most common formants are found at the end of the lexicalized suffix chain, in a position following the actional formants. They have to do with valency: pJ **-ta-* causative-passive, pJ **-pa-* reciprocal, passive, intensive-iterative, pJ **-sa-* exoactive, pJ **-ra-* endoactive and pJ **(C)i-* which reverses the transitivity of the verb base. Diathesis provides an interesting topic for future comparative studies, but it will not be treated in this article. Here I will restrict myself to actional suffixes. In the first subsection the relative suffix order of the derivational and actional suffixes is analyzed. In the second part, I attempt to undo the lexicalization in order to reconstruct the form, the meaning and the derivational behavior of the suffixes. The verbs underlying the reconstruction are taken from an exhaustive inventory of 1963 Old Japanese verbs listed in Unger (1977: 83-126). The verbs are double-checked in Martin 1987 and Omodaka et al. 1967. The pairs underlying the reconstruction consist of a lexeme of neutral actionality, along with its derived counterpart. The counterpart is preceded by the symbol (>). If there is no neutral base attested, I provide different derivations of the same base.

3.1. The actional suffix chain

Martin (1987: 796) lists the shape-populations of suffix strings lexicalized in 2200 contemporary and historic Japanese verb stems. If an actional suffix appears in a string, it is usually followed by a diathesis suffix. Strings consisting of two actional suffixes are rare. With the exception of *-n(a)-ka₍₂₎-* for which I count 24 instances, other combinations of two actional suffixes are uncommon: *-ra-na-ka₍₂₎-* 1, *-ra-ka₍₁₎-* 4, *-ra-ka₍₂₎-* 4, *-ra-ma-* 1, *-na-ma-* 2, *-n(a)-ka₍₁₎-* 3, *-ya-ka₍₁₎-* 5, *-ya-ka₍₂₎-* 1, *-ma-ka₍₂₎-* 1. The (unless otherwise indicated) contemporary Japanese verbs underlying the

given number of suffix strings are the following. I only count instances of strings that derive distinct roots. The verbs *hutagu* ‘put a lid on, stop up’ / *hutagaru* ‘be lidded, stopped up’ / *hutageru* ‘put a lid on, stop up’ (<**puta* ‘lid’-*n(a)-ka*₍₂₎-*Ö*), for instance, are counted as one instance of the suffix string *-na-ka*₍₂₎-.

- ra-na-ka*₍₂₎- (1): 1. *usuragu* ‘get thin, pale, abate’
-ra-ka₍₁₎- (4): 1. *hiiragu*, OJ *pipirak-* ‘smart with pain’, 2. *hagurakasu* ‘parry, dodge’, 3. *odoroku* ‘get surprised, be horror-struck’, 4. *todoroku* ‘roar, rumble, throb’
-ra-ka₍₂₎- (4): 1. *kawaragu* ‘get dry’, 2. *midarakasu* ‘disorder, disturb’, 3. *sabiraku* ‘run’, 4. *suberakasu* ‘let it slip’
-ra-ma- (1): 1. *hukuramu* ‘swell, bulge’
-na-ma- (2): 1. *itonamu* ‘perform, conduct, carry on’, 2. *ubenamu* ‘comply’
-n(a)-ka₍₁₎- (3): 1. *korogaru* ‘roll, tumble’, 2. *sayagu* ‘rustle’, 3. *soyogu* ‘rustle, stir, sway’
-n(a)-ka₍₂₎- (24): 1. *aogu* ‘fan’, 2. *aragau* ‘dispute, argue, wager’, 3. *hirogeru* ‘spread, extend, widen’, 4. *husagu* ‘obstruct, close’, 5. *hutagu* ‘put a lid on, stop up’, 6. *isogu* ‘rush, vie to get ahead’, 7. *kagu* ‘smell’, 8. *kasegu* ‘work, earn (by work)’, 9. *katugu* ‘shoulder, carry on one’s shoulder’, 10. *matagu* ‘bestride, straddle’, 11. *muragaru* ‘flock together’, 12. *sirageru* ‘polish rice’, 13. *sinogu* ‘endure, stand, find shelter from’, 14. *sitagau* ‘follow, obey’, 15. *sogu* ‘chop off, diminish’, 16. *tairagu* ‘get flat, become peaceful’, 17. *togu* ‘whet, sharpen, polish’, 18. *tugu* ‘poor [pour?]’ (tr.), succeed, be next (intr.)’, 19. *tunagu* ‘tie, connect’, 20. *tumugu* ‘spin, make into yarn’, 21. *uragasu* ‘de-light’, 22. *unagu* ‘hang around one’s neck’, 23. *yabusagaru* ‘be stingy’, 24. *yurugu* ‘shake, waver’
-ya-ka₍₁₎- (5): 1. *kagayaku*, OJ *kakayak-* ‘shine, glisten’, 2. *sasayaku* ‘whisper’, 3. *sosoyaku* ‘whisper’, 4. *tubuyaku* ‘mutter, grumble’, 5. *tutuyaku* ‘murmur, whisper’
-ya-ka₍₂₎- (1): 1. *amayakasu* ‘indulge, pamper’
-ma-ka₍₂₎- (1): 1. OJ *okumake-* ‘anticipate’

The shape of the attested strings makes it possible to motivate the following suffix order.

base +	1	2	3	4	5
	<i>-ra-</i>	<i>-ya-</i>	<i>-ka</i> ₍₁₎ -	<i>-ma-</i>	<i>-ka</i> ₍₂₎ -
		<i>-n(a)-</i>			
	effort	transformat. process	iconic	inclination	inchoative

This suffix chain slightly differs from the order proposed in Martin (1987: 795). The first position after the base is occupied by a formant **-ra-* that derives actions which

are carried out with effort on the base. For reasons explained in section 3.2.1. below, this suffix is distinguished from the diathesis suffix **-ra-* that marks endoactivity. Contrary to Martin's analysis, I distinguish between an iconic **-ka₍₁₎-* and an inchoative **-ka₍₂₎-*. Semantic and derivational criteria for the distinction are found in the sections 3.2.4. and 3.2.6. below. The inclinational **-ma-* occupies a position preceding inchoative **-ka₍₂₎-* and causative-passive **-ta-*. It is repositioned before **-ka₍₂₎-* because we find one instance of *-ma-ka₍₂₎-* in the derivation of OJ *okumake-* 'anticipate' from OJ *ok-* 'put' (compare also OJ *okumape-* 'anticipate'), but there are no unambiguous examples of *-ka₍₂₎-ma-*. The verb *kazikamu* 'get numb, weak, wither' can at best be derived from a root **kasika-*, because the only attested alternant is J *kazikeru*, OJ *kasike₂-* 'get numb, weak, wither'. Contrary to Martin's analysis the suffix **-ma-* is in a position before **-ta-* because we find two instances of *-ma-ta-*, i.e. *ayamatu* 'err, mistake', *ugomotu*, *uguromotu* 'bulge up', while no instances of *-ta-ma-* are found. Working along these lines, the overall chain order confirms a logic principle in linguistic structuring, namely that actionality is expected to precede diathesis in the chain order.

3.2. Undoing lexicalization

3.2.1. OJ -r- < pJ *-ra-

1. 'attempt to achieve the base noun', 2. 'execute an action with effort on the base noun', 3. 'make use of the base noun', 'sound or behave like the base onomatopoeia', 'behave like the base adjective'

denominal

1. OJ *ki₁pa* 'limit, brink' > OJ *ki₁pa-r-* 'come to an end, wear out (intr.)', OJ *kubi₁* 'neck' > J *kubi-r-* 'strangle (tr.)', Miyako (dial.): Uechi *kū*, Nakasuji *cū* 'fog' (Thorpe 1983: 288-89) > OJ *ki₂-r-* 'fog up, get foggy', OJ *kumo₁* 'cloud' > OJ *kumo₁-r-* 'get cloudy, cloud (intr.)', OJ *sima* 'piece of marked-off land, territory, quarters, island' > J *sima-r-* 'bind, restrict, shut tight; be shut, be tight (tr. / intr.)', OJ *se* 'narrow place, valley, narrows/rapids (in a river)' > J *ser-* 'narrow the gap, press for quick action', OJ *take₂* 'height, stature' > J *take-r-* 'get excited, show spirit/courage', J *tuka* 'bundle' > OJ *tuga-r-* 'attach, connect, join on, chain on (tr.)', OJ *mo₂to₂* 'root, origin, base' > J *modo-r-* 'return, revert', OJ *kaki₁* 'fence, hedge' > OJ *kagi₁-r-* 'set limits', 2. OJ *saka* 'incline, slope' > OJ *saga-r-* 'descend, go down, sink, hang down', J *tuka* 'hilt, handle, haft' > J *tuka-ra-s-* 'tire, make one weary, use up (tr.)', OJ *wata* 'sea' > OJ *wata-r-* 'cross over, span, get transferred (tr./ intr.)', 3. OJ *ipo* 'hut' > OJ *ipo-r-* 'lodge in a hut', OJ *ko₂to₂* 'word, speech, statement' > OJ *kata-r-* 'tell', OJ *te₂ ~ ta-* 'hand' > OJ *to₁-r- ~ to₂-r-* 'take, hold in hand' (Unger 1977: 111).

The denominal suffix pJ **-ra-* is found petrified in many Japanese verbal stems, but it maintains a certain productivity in contemporary Japanese. Japanese verbal

stems are essentially resistant to borrowing. Empirically we observe that very few simplex verbs were copied from Chinese or other foreign languages as such. If the need for borrowing a verb does arise, there is a clear preference to borrow a nominalized form such as *zyogingu* ‘jogging’ and add a native pro-verb covering all purposes such as *suru* or *yaru* ‘to do’ instead. There are a small number of foreign loanwords that have supplied a nominal base for a Japanese verb stem derived with J -*r(a)*-. Examples include J *demor*- ‘demonstrate’ derived from J *demo* ‘demonstration’ which is a borrowing from English, J *sabor*- ‘cut class’ derived from the French donor noun *sabotage*, J *azir*- ‘agitate’ which is probably a borrowing from English *agitation*, J *gebar*- ‘engage in strong-arm tactics’, derived from J *gebaruto* ‘strong-arm tactics’, borrowed from German *Gewalt*, J *gyuuzir*- ‘take the lead, boss’ derived from a Chinese borrowing *gyuuzi* ‘ears of an ox’. More examples can be found in Martin (1987: 673).

onomatopoeitic

**pipi* (mimetic for quick, light up and down movement) > OJ *pipi-r*- ‘flutter up’, **pipi* (mimetic for tingling sensation) > OJ *pipi-ra-k*- ‘smart with pain, produce a sharp stinging pain’, J *pika-pika* ‘sparkling, glittering, shining (mimetic)’ > OJ *pi₁ka-r*- ‘shine’, **we* ~ **wa* (emotional exclamation) that occurs in the lamenting OJ *we*, in OJ *we-warap*- ‘laugh out loud’, and in J *wa-meku* ‘scream, shriek’ > OJ *we-ra-k*- ‘laugh with joy’, OJ *wa-ra-p*- ‘laugh’, **susu* (mimetic for slurping sound) > OJ *susu-ro-p*- ‘slurp’,³ OJ *ne* ‘sound, crying, weeping’ > OJ *na-r*- ‘make a sound, ring’, **no* (mimetic for scolding, cursing) > OJ *no-r*- ‘scold’, OJ *no₂-ro₂-p*- ‘curse’, **kisi* (mimetic for high-pitched, unpleasant sounds) > J *kisi-r*- ‘creak, rasp’, **soso* (mimetic for nervous motion) in OJ *soso-mek*- ‘fidget, move nervously, rush’,⁴ OJ *sosog*- ‘ruffle, move back and forth’ > J *soso-r*- ‘excite, incite, stimulate, stir up’

deadjectival

quality verbs: OJ *aka*- ‘(be) clear, bright, red’ > OJ *aka-r*- ‘brighten, redden’, OJ *naga*- ‘(be) long’ > OJ *naga-re*- ‘flow’, OJ *nagarape₂*- ‘live on, live long’, OJ *usu*- ‘(be) thin’ > OJ *usu-re*- ‘get thin’, OJ *usurag*- ‘get thin’, OJ *kusa*- ‘(be) stinky’ > OJ *kusa-r*- ‘rot’, OJ *taka*- ‘(be) high’ > OJ *taka-r*- ‘be high, elevated’, OJ *pi₁ro₂*- ‘(be)

³ The assimilation of *-*ra*- to *-*ro*- in agreement with the quality of the preceding vowels in OJ *susu-ro-p*- ‘slurp’ and in OJ *no₂-ro₂-p*- ‘curse’ is probably triggered by mimesis.

⁴ J -*meku* is an auxiliary that derives verbs from iconic expression, such as J *hatameku* ‘flutter, flap’, J *kirameku* ‘glitter, sparkle’, J *ugomeku* ‘wriggle, squirm’, OJ *sosomek*- ‘fidget, rush; whisper’, OJ *sabame₁k*- ‘murmur, buzz, clamor’, J *sasameku* ‘whisper, murmur’, J *sazameku* ‘make an uproar’, OJ *sosomek*- ‘fidget, move nervously, rush’, J *sosomeku* ‘whisper’, J *tutumek*- ‘murmur’, J *wameku* ‘scream, shriek’, J *zawameku* ‘be noisy, rustle’, etc. The auxiliary indicates that the preceding segment is mimetic.

wide, broad, vast' > OJ *pi₁ro₂-r-* 'be widespread', OJ *omo-* 'heavy' > MJ *omo-r-* 'become heavy, serious'

On the basis of the following observations, the above suffix pJ **-ra₍₁₎-* can be distinguished from a diathetical suffix pJ **-ra₍₂₎-* marking endoactivity.⁵ The latter derives for instance OJ *kakar-* 'hang (intr.)' from OJ *kak-* 'hang (tr.)' and OJ *okor-* 'arise, happen (intr.)' from OJ *ok-* 'put (tr.)'. Unger (1977: 140) refers to it as a marker of "spontaneous action, endo-activity", Martin (1987: 672) calls it "endoactive (intransitive or passive)".

The first distinction is that pJ **-ra₍₁₎-* derives verbs from nouns, adjectives and onomatopoeia, while pJ **-ra₍₂₎-* is a deverbal verb suffix.

Second, there is a difference in meaning between pJ **-ra₍₁₎-* and pJ **-ra₍₂₎-*. Whereas pJ **-ra₍₁₎-* modifies the lexical base adding the semantics described above, pJ **-ra₍₂₎-* marks a verb base as endoactive. It not only modifies the preceding segment semantically, but also predetermines its syntactic environment. Placing requirements on the relation of the subject to the predicate, pJ **-ra₍₂₎-* affects the valency of the preceding verb.

Third, pJ **-ra₍₁₎-* occupies the first position in the suffix chain, closest to the lexical stem, while pJ **-ra₍₂₎-* occurs in more outer ranks. Whereas pJ **-ra₍₁₎-* can be followed by other actional suffixes such as *-ra₍₁₎-ka-* in e.g. OJ *werak-* 'laugh with joy', pJ **-ra₍₂₎-* is always preceded by them, such as *-ka-ra₍₂₎-* in e.g. OJ *tir-* 'scatter, get scattered' > MJ *tirakas-* 'scatter (tr.)' vs. MJ *tirakar-* 'get scattered (intr.)'. The actional suffix pJ **-ra₍₁₎-* can be followed by the exoactive pJ **-sa-*, as in OJ *tukare-* 'tire, get weary, get used up' vs. J *tukaras-* 'tire, make one weary, use up', OJ *nar-* 'make a sound, ring' vs. OJ *naras-* 'sound, ring (tr.)', OJ *ki₂r-* 'fog up, get foggy', OJ *ki₂ras-* 'cause to fog, make cloudy'. On the contrary, the endoactive pJ **-ra₍₂₎-* is logically exclusive with the exoactive pJ **-sa-*.

This is connected with the fourth distinction, namely that pJ **-ra₍₁₎-* is of neutral transitivity as opposed to pJ **-ra₍₂₎-*. We find examples where it derives endoactive verbs, but also examples where it derives exoactive verbs (e.g. J *kubir-* 'strangle (tr.)', OJ *simar-* 'bind, restrict, shut tight/ be shut, be tight (tr. / intr.)', OJ *sibar-* 'bind, tie, restrict (tr.)', OJ *watar-* 'cross over, span, get transferred (tr./intr.)'). pJ **-ra₍₂₎-* only derives endoactive verbs and it commonly alternates with an exoactive counterpart derived with the suffix pJ **-sa-*. Examples of such transitivity pairs include MJ *itas-* 'bring about, achieve' and OJ *itar-* 'reach, come to', OJ *kudas-* 'take down, put down' and OJ *kudar-* 'go down, OJ *no₂ko₂s-* 'leave' and OJ *nokor-* 'remain, be left', OJ *no₂se-* 'load, carry, let ride' and OJ *no₂r-* 'ride, be carried', OJ *oko₂s-* 'raise, arouse' and OJ *oko₂r-* 'arise, occur', OJ *sugus-* 'let pass' and OJ *sugur-* 'pass', OJ *tas-* 'add up' and OJ *tar-* 'suffice'.

⁵ The subscripts (1) and (2) are used to indicate that we are dealing with two different morphemes.

Next, suffixation of pJ **-ra₍₁₎-* sporadically triggers voicing of the preceding voiceless obstruent, while derivations with pJ **-ra₍₂₎-* show no secondary voicing in the preceding segment. Examples involving voicing are J *tuka* ‘bundle’ vs. OJ *tugar-* ‘attach, connect, join on, chain on (tr.)’, OJ *mo₂to₂* ‘root, origin, base’ vs. J *modor-* ‘return, revert’, OJ *kaki₁* ‘fence, hedge’ vs. OJ *kagi₁r-* ‘set limits’, OJ *saka* ‘incline, slope’ vs. OJ *sagar-* ‘descend, go down, sink, hang down’. This voicing phenomenon is described in Miller (1981: 853). It could be triggered by the original phonological environment: pJ **-ra₍₁₎-* derives from the lateral liquid suffix pA **-la-*, while pJ **-ra₍₂₎-* derives from pA **-ra-*.

This leads us to an etymological argument. Whereas pJ **-ra₍₁₎-* finds a strong parallel in the etymology given under section 4.1., pJ **-ra₍₂₎-* probably goes back to a middle voice suffix in Altaic. In a number of Korean defective infinitives we find a petrified marker of middle voice K *-ul-*, such as in K *nwukul-e* ‘calm down, loosen up, get milder, become soft (by itself)’ from K *nwuk-* ‘be soft, be loose (intr.)’ and K *nelpul-e* ‘spread/scatter out widely, become wide (by itself)’ from K *nelp-* ‘be wide, broad, spacious (intr.)’. Evenki preserves traces of a Tungusic middle voice suffix in verb pairs as Evk. *lamba-* ‘stick to, adhere to (intr.)’ and *lamba-rā-* ‘hold on, stick (intr.)’, Evk. *ñumu-* ‘weaken, grow weak (of arms and legs) (intr.)’ and *ñumu-rā-* ‘be bloated, be ailing (of arms and legs) (intr.)’. Written Mongolian has a middle voice marker WMo. *-rA-*, deriving e.g. WMo. *alda-ra-* ‘come loose, come off, be freed from (intr.)’ from WMo. *alda-* ‘lose, let go, drop (tr.)’ or WMo. *ebde-re-* ‘break down, fall to pieces (intr.)’ from WMo. *ebde-* ‘break, destroy (tr.)’. A relic of middle voice is also present in OTk. *-(I)r-*. It generates verbs like OTk. *adīr-* ‘separate (tr./intr.), part from (people)’ from pTk **ad-* ‘be(come) different (intr.)’ in OTk. *adīn* ‘other, another’, Karah. *aDna-* ‘become different, change’ and OTk. *ūrper-* ‘bristle, stand on end (of hair)’ from pTk **ūrpe-* ‘be shaggy’ in OTk. *ūrpek* ‘shaggy, disheveled’.

3.2.2. OJ *-y-* < pJ **-ya-*

1. ‘reach the state expressed by the base noun’, 2. ‘make use of the base noun’, ‘gradually acquire the property expressed by the adjective base, become the adjective base’

denominal

1. OJ *me₂* ‘sprout, bud’ > OJ *moye-* ‘sprout’, OJ *moyas-* ‘make it sprout’, OJ *tupīl* (M 4508) ‘(at the) end’ > OJ *tupīye-* ‘be spent, wasted, routed’, OJ *tupīyas-* ‘spend, waste’, 2. OJ *obi₁* ‘belt, girdle’ > OJ *obiyakas-* ‘intimidate, threaten’, OJ *obiye-* ‘take fright at’ (cf. J *obik-* ‘gird, inveigle’), OJ *ya* ‘arrow’ > OJ *i-* (<**i-ya-*) ‘shoot’, OJ *iye-* (<**i-ya-(C)i-*) ‘get shot’

deadjektival

OJ *wo(-)* ‘little (bound)’ > OJ *woyas-* ‘weaken (tr.)’, OJ *woye-* ‘get weakened, be enfeebled’, OJ *nipoye-* ‘become red, beautiful, fragrant’ (cfr. OJ *nipop-* ‘get red, shine beautifully, be fragrant’)

quality verbs: OJ *waka-* ‘young’ > OJ *wakaye-* ‘get younger, be rejuvenated’, OJ *ko₁-* ‘saturated’ > OJ *ko₁ye-* ‘grow fertile, get fat’, J *koyas-* ‘fertilize, fatten, enrich’, OJ *ama-* ‘sweet’ > OJ *amaye-* ‘seek favor, fawn’

It is inviting to treat the deverbal formant pJ **-ya₍₂₎-*, that Unger (1977: 130) describes as a passive, as a distinct suffix. The passive suffix is reflected in verb pairs such as OJ *omop-* ‘think, feel’ and OJ *omopoye-* ‘remember, learn, know’, OJ *ki₁k-* ‘hear’ and OJ *ki₁ko₂ye-* ‘be heard, be audible’, OJ *mi₁-* ‘see’ and OJ *mi₁ye-* ‘be seen, seem, be visible’, OJ *mi₁yar-* ‘view the distance, overlook, survey’, OJ *sakar-* ‘flourish, be in high spirits’ and OJ *sakaye-* ‘flourish, prosper’, pJ **ta-* ‘reach’ in *itaru* ‘arrive, reach, attain’, *itasu* ‘do, cause, bring about’ and OJ *taye-* ‘come to an end (intr.)’, OJ *tayas-* ‘end, put an end to, let come to an end (tr.)’, pJ **ka-* ‘go’ in OJ *ik-* ‘go’, OJ *kayo₁p-* ‘ply between, commute, frequent, go regularly’, OJ *kare₂-* ‘get apart, cease, go away’ and OJ *kaye-* ‘be parted, get apart’. From the examples it seems that some verbs denoting bodily and mental activities are formed with this suffix. Martin (1987: 741) analyzes OJ *omop-* ‘think, feel’ as a compound of *omo-*, perhaps reflecting the quality verb *omo-* ‘be heavy’, and the diathetical suffix pJ **-pa-*. If this analysis is correct, the suffix pJ **-ya-* follows a diathetical suffix in OJ *omopoye-* ‘remember, learn, know’. This distributional order supports the description of pJ **-ya-* as a passive suffix. The label ‘passive’ cannot account for the instances of denominal and deadjectival derivation above. The suffix pJ **-ya-* can be polarized as exoactive (e.g. OJ *tayas-* ‘let come to an end (tr.)’ < **ta-* ‘reach’ + **-ya-* + **-sa-* exoactive) and as endoactive (e.g. OJ *mi₁yar-* ‘view the distance’ < **mi-* ‘see’ + **-ya-* + **-ra-* endoactive), which would place it to the left in the diathetical suffix chain.

Besides the internal evidence to treat pJ **-ya₍₂₎-* separately, there is comparative evidence that can shed more light on the problem. Whereas pJ **-ya₍₁₎-* fits into the etymology proposed in section 4.2., the suffix pJ **-ya₍₂₎-* could be related to an Altaic passive. Mongolic has an obsolete *-d-* and a productive *-da-* passive (Street 1957: 65, Poppe 1954: 62, 1955: 253), deriving for instance WMo. *dugul-da-* ‘be heard, be audible’ from *dugul-* ‘hear’ and WMo. *ol-da-* ‘be found’ from *ol-* ‘find’. Some verbs denoting bodily and mental activities in Turkic are derived with an obsolete medial suffix OTk *-(X)d-* (Erdal 1991: 642-644, Gabain 1950: 80). This suffix derives verbs such as OTk. *uya-d-* ‘be ashamed’ from *uya-* ‘put to shame’ and OTk. *tod-* ‘be full, satiated’ from *to-* ‘close, block’. Diathetical suffixes relating Japanese to Altaic form an interesting topic for future research.

3.2.3. OJ *-n-* < pJ **-na-*

‘develop or process the concept denoted by the base noun’, ‘develop the property denoted by the base adjective’, ‘develop the state or action denoted by the base verb’

denominal

OJ *ata* ‘enemy, hostility’ > OJ *atanap-* ‘harm, injure’, OJ *aki*₁ ‘barter, trade, peddling’ > *aki*₁*nap-* ‘deal in, sell, trade’, J *kasa* ‘bulk’ > J *kasantar-* ‘grow in bulk’, OJ *kasane-* ‘pile up, layer (tr.)’, OJ *kura* ‘position established on a higher level’ (JDB 272), OJ *kurawi* ‘level, rank’ > OJ *kurabe-* ‘compare’ (< **kura-n(a)-pa-*), OJ *mapi*₁ ‘gift, offering’ > OJ *mapi*₁*nap-* ‘bribe’, J *ni* ‘burden’ > OJ *ninap-* ‘shoulder, bear, carry on one’s shoulder’, OJ *oto*₂ ‘sound’ > OJ *oto*₂*nap-* ‘make a noise’, OJ *pusa* ‘bunch’ > OJ *pusanar-* ‘form a bunch, bunch out (intr.)’, OJ *pusane*₂₋ ‘bunch together, make into a bunch’, J *tuka* ‘bundle’ > OJ *tukane-* ‘bundle (into one) (tr.)’, OJ *tumi*₁ ‘crime, sin’ > OJ *tuminap-* ‘punish’, OJ *tura* ‘row, line’ > OJ *turanar-* ‘form a line, stand in a row’, OJ *turane-* ‘put in a row, line up, link’, OJ *to*₂*mo*₂ ‘companion’ > OJ *to*₂*monap-* ‘accompany, go with’, OJ *tomonape*₂₋ ‘let accompany, take along’, OJ *udu* ‘treasure, precious (thing)’ > OJ *udunap-* ‘prize, value’, OJ *ura* ‘divination, foretelling’ > OJ *uranap-* ‘divine, foretell’

deadjectival

OJ *maro*₂ ‘round (thing), circle’ > OJ *maro*₂*b-* ‘tumble’ (< **maro-n(a)-pa-*)
quality verbs: OJ *ama-* ‘sweet’ > OJ *amanap-* ‘cooperate, be nice/friendly to’, OJ *kata-* ‘hard’ > OJ *katane-* ‘lump/bunch together, summarize’, MJ *katanas-* ‘summarize’

deverbal

OJ *ok-* ‘put’, OJ *oko*₂*r-* ‘arise, happen’ ~ *oko*₂*s-* ‘raise’ > OJ *oko*₂*nap-* ‘handle’, OJ *tat-* ‘stand, be built’ > OJ *tatanapar-* ‘get piled up’, OJ *tatanaduk-* ‘pile up (tr.)’, OJ *tatane-* ‘fold up, pile up (tr.)’, OJ *uk-* ‘float’ > OJ *ukab-* ‘float (intr.)’, OJ *ukabe*₂₋ ‘let float, let rise to the surface (tr.)’

3.2.4. OJ -k- < pJ *-ka₍₁₎-

‘produce a sound or a sensation like the base onomatopoeia’

onomatopoeic

**kororo* (mimetic for animal sounds) > *ko*₂*ro*₂*ro*₂*k-* ‘bark (in a hoarse voice), neigh, chirp’, OJ *ne* ‘sound, crying, weeping’ > OJ *nak-* ‘cry’, **parara* (mimetic for quick up and down motion) > OJ *pararakas-* ‘make flutter’, **pipi* (mimetic for tingling sensation) > OJ *pi*₁*pi*₁*k-* ‘smart, be pungent, give a tingling sensation’, **soso* (mimetic for a gurgling sound) > OJ *so*₂*so*₂*k-* ‘pour a liquid with a gurgling sound’, OJ *sawa-sawa ni* ‘noisily, turbulently (mimetic)’ > OJ *sawak-* ‘cause commotion, disturbance, create a fuss’, OJ *to*₂*do*₂ (mimetic expression for knocking on a door or for the trampling of horse hoofs) > OJ *to*₂*do*₂*ro*₂*k-* ‘roar, rumble, throb’, **toyo* (mimetic for reverberation) > OJ *toyok-* ‘clamor, resound, say loudly’, J *ugo-meku* ‘wriggle’ >

OJ *ugok-* ‘move (intr.)’, OJ *ugokas-* ‘move (tr.)’, **uta* (mimetic for a loud sound) > OJ *utak-* ‘roar’

3.2.5. OJ *-m-* < pJ **-ma-*

1. ‘consider as the base noun’, 2. ‘attempt to reach the position expressed by the base noun, tend to acquire dimensional properties similar to the base noun’, ‘give the impression of the base onomatopoea’, 1. ‘regard as or experience the emotional property expressed by the base adjective’, 2. ‘tend to acquire the property expressed by the base adjective’, ‘intend or attempt to achieve the state or to carry out the action expressed by the verb base’

denominal

1. OJ *ata* ‘enemy, hostility’ > OJ *atam-* ‘regard as enemy, hate’ (JLTT 678), OJ *to₂ga* ‘blame, offence’ > OJ *to₂game₂₋* ‘censure, find fault with’, J *tuka* ‘hilt, handle, haft’ > J *tukam-* ‘grasp, grip’,
 2. OJ *api₁da* ‘interval’ > OJ *api₁dam-* ‘take a break, rest’, OJ *ki₁pa* ‘limit, brink’ > OJ *ki₁pam-* ‘reach the limit, reach an extreme’, OJ *kubo* ‘hollow (place), depression’ > OJ *kubom-* ‘become hollow, cave in, be dented, have a hollow area’, OJ *mo₂to₂* ‘root, origin, base’ > OJ *moto₂me₂₋* ‘seek’, OJ *siwa* ‘wrinkle’ > OJ *siwam-* ‘get wrinkled’, OJ *se* ‘narrow place, valley, rapids (in a river)’ > OJ *semar-* ‘get narrow, draw near’, OJ *yo₂do₂* ‘stagnant place (in a river)’ > OJ *yo₂do₂m-* ‘stagnate, be stagnant’.

onomatopoetic

J *koro-koro* ‘rolling, over and over’, J *kuru-kuru* ‘round and round, twirling’ > OJ *karam-* ‘twine round, entwine, entangle’, J *kurum-* ‘wrap in, lap in’, **toyo* ~ **doyo* (mimetic for reverberation), *doyomeku* ‘resound, reverberate’ > OJ *to₂yo₂m-* ~ MJ *doyom-* ‘resound’, *ugo-meku* ‘wriggle, squirm’ > OJ *ugumot-*, J *ugomor-*, J *ugumot-* ‘(earth) bulge up’, J *suu suu* ‘smoothly (mimetic)’ > J *susum-* ‘advance, go forward’

adjectives

2. OJ *arata* ‘new’ > OJ *aratame₂₋* ‘renew, improve (tr.)’, OJ *sidu* ‘poor, miserable’, ‘quiet’ > OJ *sidum-* ‘submerge, sink (intr.), get quiet’
 quality verbs: 1. OJ *kurusi-* ‘painful, bitter’ > OJ *kurusime₂₋* ‘suffer (intr.)’, OJ *niku-* ‘hateful’ > OJ *nikum-* ‘hate, dislike, reprove (tr.)’, OJ *padukasi-* ‘ashamed’ > *padukasime₂₋* ‘shame, disgrace, humiliate (tr.)’, OJ *yasu-* ‘easy’ > OJ *yasum-* ‘rest, sleep (intr.)’, OJ *wosi-* ‘regrettable; lovable, cute’ > OJ *wosim-* ‘grudge, regret; prize, value (tr.)’
 2. OJ *ita-* ‘painful, extreme’ > OJ *itam-* ‘get hurt, damaged, spoiled’ (JDB 78-79), OJ *kata-* ‘hard’ > OJ *katame₂₋* ‘make hard, lump together, mass together’, OJ *ki₁yo₁₋* ‘pure’ > OJ *ki₁yo₁me₂₋* ‘purify’, OJ *niko₁₋* ‘gentle, soft’ > *niko₁m-* ‘soften, get gentle,

calm down’, OJ *naga-* ‘long’ > OJ *nagame₂₋* ‘prolong voice, recite, drone’, OJ *pi₁ro₂₋* ‘broad’ > OJ *pi₁ro₂me₂₋* ‘spread (tr.)’, OJ *puka-* ‘deep’ > OJ *pukame₂₋* ‘make deep’, OJ *sayake₂₋* ‘cool, clear, pure’ > *sayame₂₋* ‘purify’

The Old Japanese deadjectival verb formant *-m-* is limited in attestation and it is no longer productive in Old Japanese, but a derived construction is still widely attested and productive in the early records. In the Man’yōshū we frequently find constructions like *tabi₁₋wo kurusi-mi₁* (journey-accusative be painful-gerund) ‘because the journey is painful’ (M 3674) and *pi₁to₂ me₂₋wo opo-mi₁* (person eye-accusative be many-gerund) ‘because there are many eyes’ (Man’yōshū 207). The element OJ *-mi₁* in the construction noun phrase-*wo* adjective-*mi₁* is usually called a gerund. Vovin (2001: 191-192, 198) suggests that the Japanese gerund is cognate to the Korean coordinative gerund *-(u/o)mye* and the Manchu gerund *-me*, Tungusic *-mi*. However, his etymology is contradicted by the internal Japanese evidence. The presence of the accusative case marker *wo* in the Japanese construction calls for a verb and therefore argues for an interpretation of the *-mi₁* gerund as the conjunctive form (on *-i₁*) of a deadjectival verb on *-m-* ‘regard as’. Against this internal analysis, Martin (1987: 805) argues that “most of the *..mu* verbs are intransitive and the transitive counterparts (*..mey-* < **-ma-Ci-*) have an extra counterpart: ...”. In Robbeets (2005a: 92-93), I follow Martin’s argumentation. However, verbs such as OJ *nikum-* ‘hate, dislike, reprove (tr.)’ and OJ *wosim-* ‘grudge, regret; prize, value (tr.)’ above are transitive and illustrate that the actionality suffix *-m-* is of neutral transitivity. In the denominal and deverbal derivation *-m-* can derive intransitives, but also transitive verbs. The transitivity flipper **(C)i-* in OJ *kurusime₂₋* ‘suffer (intr.)’ derives the intransitive counterpart from an original **kurusim-* ‘regard as painful, suffer (tr.)’. The reconstructed transitive is probably the same deadjectival verb as the underlying one in the construction *tabi₁₋wo kurusi-mi₁*. I would like to argue that the source of the Old Japanese *-mi₁* gerund is a deadjectival actionality suffix of the type illustrated above that grammaticalized in its conjunctive form.

deverbal

OJ *agar-* ‘rise’ > OJ *agame₂₋* ‘respect, honor, worship’, OJ *aye-* ‘fall off, spill, drip (intr.)’, OJ *ayas-* ‘drop, spill, shed (tr.)’ > OJ *ayamat-* ‘err, make a mistake’, OJ *ayamar-* ‘err, make a mistake, apologize’, OJ *ok-* ‘put’ > OJ *okumake-* ‘anticipate’, OJ *kakus-* ‘hide, conceal (tr.)’, OJ *kakur-* ‘hide (intr.)’ > OJ *kakum-* ‘surround’, OJ *kitap-* ‘drill, train, forge’ > OJ *ki₁tam-* ‘punish, chastise’, OJ *tat-* ‘stand, be built’ > OJ *tatam-* ‘fold up’, OJ *nade-* ‘pat, stroke’, OJ *nadas-* ‘deign to pat, stroke’ > OJ *nadame₂₋* ‘soothe, placate’, **nonso-* ‘see’ in OJ *nozok-* ‘peek, peer’ > OJ *nozom-* ‘hope for, wish for, look for, look over, view’, OJ *puk-* ‘cover’ > OJ *pukum-* ‘comprise, include (intr.)’, OJ *pukume-* ‘include (tr.)’, OJ *pare-* ‘swell (intr.)’, OJ *paras-* ‘make swell (tr.)’ > OJ *param-* ‘get pregnant, get filled, get swollen’

Besides the deverbal formant for inclination *-m-* that is lexicalized in a position close to the primary stem, we find another suffix, the tentative OJ *-(a)ma-*, that is still productive in Old and Middle Japanese (Martin 1991b: 605-615, Vovin 2003: 273-282). It is a modal suffix that is found in the outer ranks of the verbal suffix chain. A number of Japanese linguists label this suffix as the presumptive mood. Vovin follows Martin in calling it a tentative. OJ *-(a)ma-* denotes a wide range of meanings such as intention, volition, inclination, suggestion, presumption. Form and meaning being similar, the modal suffix is probably internally related to the actional suffix. Perhaps OJ *-(a)ma-* is a composite derivation of the existential auxiliary pJ **a-* ‘be, exist’ and the actional pJ **-ma-*, that later acquired a grammatical status.

3.2.6. OJ *-k-* < pJ **-ka-*

1. ‘put the base noun to use’, 2. ‘come into a new state similar to the base noun’, ‘enter the state expressed by the base adjective’, ‘come into a new state or begin the action expressed by the base verb’

denominal

1. OJ *kadura* ‘crown, hair ornament’ > *kadurak-* ‘use as a crown, as a decoration or ornament in the hair’, OJ *pane* ‘feather’ > OJ *pag-* ‘fletch (an arrow) by fitting a feather to a bamboo shaft’ (< **pan(a)-ka-*), OJ *makura* ‘pillow’ > OJ *makurak-* ‘use as a pillow’, OJ *obi₁* ‘belt, girdle’ > J *obik-* ‘gird, inveigle’, OJ *te ~ ta-* ‘hand’ > OJ *tak-* ‘do something with the hands, use one’s hands (e.g. in order to dress hair, row a boat, pull a net, guide a horse)’, OJ *tuna* ‘rope’ > OJ *tunag-* ‘tie up, fasten, secure with a rope’, OJ *ude* ‘arm’ > OJ *udak-* ‘embrace’, OJ *wana* ‘trap, snare, lasso’ > OJ *wanak-* ‘throttle, strangle, choke off’
 2. *ata* ‘enemy, hostility’ > MJ *atake-* ‘violate, start a tumult’, OJ *mi₁du* ‘water’ > *mi₁duk-* ‘get soaked (in water)’, OJ *se* ‘narrow place, valley, narrows/rapids (in a river)’ > OJ *sek-* ‘dam, obstruct’, *susu* ‘soot’ > J *susuke-* ‘become sooty, soiled’, OJ *se* (~ *so-*) ‘back’ > OJ *so₂k-* ‘get distant, recede’

adjectives

OJ *maro₂* ‘round (thing)’ > *maro₂kas-* ‘make round, make into a lump (tr.)’, OJ *maro₂kar-* ‘form a lump (intr.)’, OJ *sira(-)* ‘white (bound)’ > OJ *sirake₂₋* ‘whiten, get white (intr.)’, OJ *sidu* ‘poor, miserable’, ‘quiet’ (*<‘low’) > OJ *sizuk-* ‘sink (intr.)’, OJ *utu(-)* ‘empty (bound)’ > OJ *utuke₂₋* ‘get empty’
 quality verbs: OJ *pi₁ro₂₋* ‘wide, broad, vast’ > OJ *ta-pi₁ro₂kas-* ‘open the hand and wave’, *pi₁rak-* ‘open (tr.)’, *pi₁rake₂₋* ‘open (intr.)’, OJ *tapasi-* ‘reckless, profligate’ >

OJ *tapake*₂- ‘fool around, misbehave, engage in adultery’, OJ *ara*- ‘rough, course’ > OJ *arake*₂- ‘fall to bits, get scattered’⁶

deverbal

OJ *kudas*- ‘take down, put down, lower, defeat’ ~ OJ *kudar*- ‘go down, descend’ > OJ *kudak*- ‘shatter, break’, OJ *kudake*₂- ‘be shattered, get broken’, **nonso*- ‘see’ in OJ *nozom*- ‘hope for, look for, view’ > OJ *nozok*- ‘peek, peer’, OJ *tir*- ‘scatter, get scattered, disperse (intr.)’ > MJ *tirakas*- ‘scatter (tr.)’, MJ *tirakar*- ‘get scattered (intr.)’, MJ *torobos*- ~ *toromos*- ‘melt, temper (metal)’ > J *torokas*-, MJ *torakas*- ‘melt, scatter (tr.)’, MJ *torake*- ‘melt, dissolve, scatter, get infatuated’, OJ *to₂b*- ‘fly, jump’ (< **ton(a)-pa-*) > OJ *tonakar*- ‘jump up’, OJ *par*- ‘open (ground), clear (land) (tr.)’, OJ *pare*- ‘get clear, open (intr.)’ > OJ *paruk*- ‘clear up, open up, get bright, dispel’, OJ *parukas*- ‘make clear’, OJ *pasir*- ‘run, rush (intr.)’ > OJ *pasirakas*- ‘make run, bring to gallop (tr.)’, OJ *uke*₂- ‘receive’ > OJ *ukakap*- ‘peep through, spy, watch, infer, visit, inquire, hear’, OJ *amaye*- ‘seek favor, fawn’ > OJ *amayakas*- ‘indulge, pamper’.

4. Altaic cognates

What can be considered a match when comparing derivational and actional suffixes between the languages that constitute Altaic? First, there is a formal criterion. The subsequent consonant and vowel of the reconstructed Japanese proto-morpheme must correspond regularly with the phonemes of the individual proto-forms. A formal correspondence will be considered regular if it confirms the findings in Robbeets (2005a: 373-377).

Next, there is a semantic criterion. When the measure of freedom for the compared meanings is too large, the formal correspondence can result from pure chance. In order to keep the semantic latitude to a minimum, actionality will be compared to actionality alone. The suffixes under comparison all modify the preceding segment semantically without altering the valency of the primary stem, as opposed to diathetical suffixes. Semantic latitude within the category of actionality itself will be permitted to the extent that the compared suffixes fall into the same semantic subclass: intensity, frequency and temporal development.

Third, there is a morphological criterion. The suffixes under comparison must derive verbs. Besides, we expect a certain congruence between the word class of the bases from which the verb is derived. Distinction is made between nouns, verbs, onomatopoeic expressions and adjectives.

⁶ The register involved in the derivation is incompatible: OJ *ara*- ‘rough, course’ is A, while OJ *arake*₂- ‘fall to bits, get scattered’ is B. The semantic latitude is also considerable. Only later did the verb *arake*- develop the meaning ‘get rough’ in Japanese.

Finally, there is a combinational criterion. The relative position that a suffix occupies in the suffix chain in terms of its distance to the primary stem is taken into account. Aspectual and modal suffixes that occur in the outer ranks of the suffix chain and often go back to a lexical origin are unconvincing as evidence. The combinational criterion gains relevance within the larger context of comparative verbal morphology. The actional paradigm must once have fitted into an ordered original grammar, which is expected to reflect system properties of a real natural language.

For Japanese, Korean, Mongolic and Turkic I use material from the oldest unambiguously written stages: Old Japanese, Middle Korean, Middle Mongolian, Written Mongolian and Old Turkic. Old Turkic covers the period from the eighth to the fourteenth century. The examples consist of some old runic data, but mainly of Old Uighur and peripherally of Karakhanid. The Middle Mongolian forms are taken from the Secret History of the Mongols, the genealogy and biography of Chingis Khan, dating back to the thirteenth century. Written Mongolian refers to the literary tradition of Mongolic from the thirteenth century up to present, but it can be considered as a conservative Mongolic language in itself. Middle Korean mainly refers to Late Middle Korean. It is the language written down after the invention of the Korean script (1446), represented in the alphabetic texts of the fifteenth and sixteenth centuries. Before that time no systematic transcription of the Korean language existed. Early Middle Korean (918-1446) records are all in Chinese characters. They are phonologically speculative because every sound value must be reconstructed, and they are only fragmentarily documented. Old Japanese is the language spoken in the Nara-period (710-794). It is the language of the literary moments of Japanese: the poetry of the *Man'yōshū*, the cultural and geographical records of the *Fudoki*, the dynastic chronicles of the *Nihonshoki*. For the historical study of Tungusic languages it is unfortunate that written records are nonexistent for most of the languages. The oldest records are written in Jurchen, dating back to the period when a confederacy of Tungusic tribes ruled over North China under the dynastic name Jin (1115-1234). However, Jurchen writing has not been completely deciphered yet, and our knowledge about the Jurchen language is fragmentary and speculative. Much more extensive is the literature that is written in Manchu, when the Manchus were in power in China during the Qing dynasty (1644-1911). However, this language is highly sinicized. Because it does not always preserve crucial parts of morphology, I make additional reference to the contemporary Tungusic languages: Evenki, Even, Solon, Negidal, Nanai, Ulcha, Oroch, Oroch, and Udehe. In the following discussion the references between brackets refer to the secondary source that makes reference to the morphological data. The semantic analysis of the morphemes is mine. The lexical stems and their derived counterparts are individually checked in the dictionaries listed in the bibliography. Occasionally reference is made to primary sources, texts with examples of the morpheme in question.

For the transliteration of linguistic forms, the present paper uses the Yale system for Japanese and Korean. As far as the vowel distinctions attested for Old Japanese are concerned, it employs i_1 versus i_2 , e_1 versus e_2 and o_1 versus o_2 for the pre- and postglided variants. The Middle Korean unrounded vowels [ə] and [i] are represented by o and u respectively, while wo and wu is used for rounded [o] and [u]. A triangle Δ is used to represent the now obsolete Middle Korean triangle grapheme. The dots in the Middle Korean words represent the distinctive pitch of the following syllable: one dot for high, two dots for rising, and unmarked syllables are treated as low. The transliteration rules for transcribing the individual Tungusic languages follow the romanization proposed by Gorelova (2002) for Manchu, Nedjalkov (1997) for Evenki (with the modifications c, j, y, \tilde{n}, i for Nedjalkov's notations ch, d', j, n', y respectively), Nikolaeva (1999) for Udehe (with the modifications j, y for Nikolaeva's notations z, j respectively) and a romanization based on Avrorin's (1961) Cyrillic transcription of Nanai. The logic that underlies the modifications is a consistent use of c, j for the palatal fricatives, y for the palatal glide and \tilde{n} for the palatal nasal. The transliteration of the Written Mongolian forms follows Poppe's (1954) conventions with the modifications c, j for Poppe's notations \check{c}, \check{j} . For Middle Mongolian Rybatzki (2003) is followed with the exception of \check{s}, γ for Rybatzki's notations sh and gh . The transcription of the Turkic forms follows Johanson & Csató 1998. For all languages a macron placed over a vowel is used to indicate length. I do not reconstruct vowel length for the Old Turkic forms.

4.1. pJ **-ra-* < pA **-la-* effort (denominal, deadjectival, onomatopoeic)

The Japanese suffix analyzed in section 3.2.1. has been compared by Miller (1981: 853) to a different set of Altaic forms, which he derives from a factitive pA **-l-*. Starostin, Dybo & Mudrak (2003: 186-190) reconstruct pA **-l-* but leave the semantics open and do not include the Japanese suffix treated here. Ramstedt (1912: 80, 1957: 195-196) and Baskakov (1981: 68) propose the comparison discussed below for Tungusic, Mongolic and Turkic, not including a Japanese cognate. Schönig (2003: 416) explains the parallel between the Mongolic and the Turkic suffix as a case of morphological borrowing. In my opinion it is difficult to attribute the following similarity to borrowing since we are dealing with a denominal verb suffix very close to the primary stem. Moreover, the shared properties are spread over four branches, including linguistically and geographically remote groups such as Japanese and Turkic. The proposed correspondences are global. Phonologically they obey the lateral liquid correspondence (Robbeets 2005a: 91). The semantic latitude is kept to an absolute minimum. Except for Tungusic, where the suffix does not operate on onomatopoeia, the derivational bases are the same: nouns, onomatopoeia and adjectives.

Tungusic

pTg *-*lĀ*- (Benzing 1955a: 1064): Ma. -*lA*-, Evk. -*la*-, Even -*lĀ*-, Ud. -*lA*-, Na. -*lA*-
 1. ‘attempt to achieve the base noun’, 2. ‘execute a difficult action on the base noun’,
 3. ‘behave like the base noun’, 4. ‘make use of the base noun’, ‘make like or behave
 like the adjective base’

denominal

Ma. -*lA*- (Gorelova 2002, 235): 1. *oron* ‘vacant post, vacancy’ > *oro-lo*- ‘fill in, fill a
 vacancy’, *songko* ‘trace, track, footprint’ > *songko-lo*- ‘follow in the tracks of, imi-
 tate’, 3. *bata* ‘enemy’ > *bata-la*- ‘be an enemy, oppose’, *gucu* ‘friend’ > *gucu-le*- ‘be
 friends with, make friends’, *sadun* ‘relative by marriage’ > *sadu-la*- ‘form an inlaw
 relationship’, *ejen* ‘ruler, master’ > *eje-le*- ‘rule, master, occupy by force, establish
 control over’, 4. *suhe* ‘ax’ > *suhe-le*- ‘split with an ax’, *kobto(n)* ‘respect, reverence’
 > *kobto-lo*- ‘treat respectfully’

Evk. -*la*- (Benzing 1955a: 1064, Nedjalkov 1997: 301): 1. *mū*- ‘water’ > *mū-le*-
 ‘gather water’, *dikte* ‘berries’ > *dikte-le*- ‘gather berries’, *mō* ‘firewood’ > *mō-la*-
 ‘gather firewood’, 4. *auun* ‘hat’ > *au-la*- ‘put on a hat’

Ud. -*lA*- (Nikolaeva 1999: 170-71): 1. *sita* ‘child’ > *sita-la*- ‘adopt’, *aŋa* ‘night shel-
 ter’ > *aŋa-la*- ‘make a night shelter’, *iŋme* ‘needle’ > *iŋme-le*- ‘put a thread in a nee-
 dle’, *mamasa* ‘wife’ > *mamasa-la*- ‘marry, take a wife’, *anda* ‘friend’ > *anda-la*-
 ‘make friends’, 3. *jangā* ‘boss, leader’ > *jangā-la*- ‘behave like a boss’, 4. *kusige*
 ‘knife’ > *kusige-le*- ‘stab with a knife’, *māusa* ‘gun’ > *māusa-la*- ‘shoot’, *uniŋa*
 ‘spoon’ > *uniŋa-la*- ‘scoop with a spoon’, *santu* ‘fist’ > *santu-le*- ‘hit with one’s fist’,
cob’o ‘handful’ > *cob’o-lo*- ‘scoop with one’s hand’, *aisi* ‘gold’ > *aisi-le*- ‘gild’

Nikolaeva (1999: 13, 171) observes that the suffix Ud. -*lA*- regularly attaches to
 verbal stems borrowed from Russian in order to adjust the Russian verb to the Udihe
 derivational system. Examples are Ud. *jawoni-la*- ‘ring up’ from Russian *zvonī-* ‘id.’,
 Ud. *tancewa-la*- [meaning?] from Russian *tancewa-* ‘id.’. This function is reminis-
 cent of the way in which J -*ra*- adapts foreign loanwords to the Japanese morpho-
 syntactic frame.

Na. -*lA*- (Benzing 1955a: 1064, Avrorin 1961: 16, 44-45, Menges 1968: 201): 1.
mue ‘water’ > *mue-le*- ‘get water’, *asi* ‘wife’ > *asi-la*- ‘marry, take a wife’, *anda*
 ‘friend’ > *anda-la*- ‘make friends’, 2. *usin* ‘garden, field’ > *usi-le*- ‘grow vegetables,
 work in the garden’, 3. *amin* ‘father’ > *ami-la*- ‘be like a father to somebody, behave
 like a father’, *enin* ‘mother’ > *eni-le*- ‘be like a mother to somebody, behave like a
 mother’ 4. *ilga* ‘ornament’ > *ilga-la*- ‘decorate’, *epu* ‘torture, torment’ > *epu-le*-
 ‘torment, harass’, *paloa* ‘hammer’ > *paloa-la*- ‘hit with a hammer’, *pao* ‘cannon,
 gun’ > *pao-la*- ‘fire a gun’, *oma* ‘footwear, shoes’ > *oma-la*- ‘put on one’s shoes’,
apun ‘hat’ > *apo-la*- ‘put on a hat’

deadjectival

Ma. *-lA-* (Gorelova 2002: 235): *genggiyen* ‘bright, clear’ > *genggiye-le-* ‘brighten, make clear’, *beki* ‘firm, strong’ > *beki-le-* ‘make fast, make firm, strengthen’, *akdun* ‘firm, strong’ > *akdu-la-* ‘protect, defend’, *hahi* ‘urgent, hurried’ > *hahi-la-* ‘act quickly or urgently, hurry’, *untuhun* ‘empty; emptiness’ > *untuhu-le-* ‘be empty’

Na. *-lA-* (Avrorin 1961: 16, 44-45): *padi* ‘separate, detached, independent’ > *padi-la-* ‘separate, detach (tr.)’, *dedu* ‘dear, beloved’ > *dedu-le-* ‘love, be fond of, care for (tr.)’, *masi* ‘strong, firm’ > *masi-la-* ‘be(come) strong’, *arkma* ‘angry, malicious’ > *arkma-la-* ‘become angry with’, *manga* ‘strong, fierce’ > *manga-la-* ‘become stronger’

Mongolic

pMo **-lA-* > WMo. *-lA-* ~ WMo. *-nA-* after stem final *-m-*, *-ng-* (Pope 1954: 65), SH MMo. *-lA-* (Street 1957: 63, 65, 66, Rybatzki 2003: 65)

1. ‘search or hunt for the base noun, carry out a difficult action in order to achieve the base noun’, 2. ‘behave like the base noun’, 3. ‘make use of the base noun, spend the span of time denoted by the base noun’,
 ‘sound like the base onomatopoeia’
 ‘behave like the base adjective’

denominal

1. WMo. *šibayun* ‘bird’ > *šibayu-la-* ‘hunt birds’, *ang* ‘game’ > *ang-na-* ‘hunt’, WMo. *ger* ‘house’ > *ger-le-* ‘marry, found a house of one’s own’, SH MMo. *hoi* ‘forest’ > *hoi-la-* ‘go/ flee into the forest’, 2. SH MMo. *aqā* ‘elder brother’ > *aqā-la-* ‘behave like an elder brother, dominate’, SH MMo. *kō’üci* ‘one who deals with a son’ > *kō’üci-le-* ‘act like one who deals with a son, treat like a son’, WMo. *arsi* ‘hermit’ > *arsi-la-* ‘live as a hermit’, 3. WMo. *emegel* ‘saddle’ > *emegel-le-* ‘to saddle’, *usun* ‘water’ > WMo. *usu-la-* ‘to water’, WMo. *altan* ‘gold’ > *alta-la-* ‘gild’, WMo. *em* ‘medicine’ > *em-ne-* ‘cure’, SH MMo. *kelen* ‘tongue, word, speech, statement’ > *kele-le-* ‘say, speak’, SH MMo. *aqta* ‘riding horse’ > *aqta-la-* ‘ride horseback’, SH MMo. *cag* ‘time’ > *cag-la-* ‘spend time, deliberate’

onomatopoetic

WMo. *qai* interjection expressive of grief > *qai-la-* ‘weep, cry, shed tears’, *γoyuu* ‘cry of a rooster’ > *γoyuy-la-* ‘cackle’

deadjectival

WMo. *qurdun* ‘quick’ > *qurdu-la-* ‘rush, be quick’, SH MMo. *öter* ‘quickly’ > *öter-le-* ‘hasten, do quickly’, *soqur* ‘blind (adj.)’ > *soqu-la-* ‘make blind’

Turkic

pTk *-*la-* > OTk. -*la-* (Erdal 1991: 429-455)

1. 'search or hunt for the base noun, attempt to achieve the base noun, give birth to the base noun', 2. 'execute a difficult action on the base noun', 3. 'make use of the base noun, spend the stretch of time denoted by the base noun'
- 'sound like the base onomatopoeia'
- 'consider as the base adjective'

denominal

1. *av* 'wild game' > *av-la-* 'hunt wild game', *yer* 'place, land' > *yer-lä-* 'to settle at a place', *iš* 'work, labor' > *iš-lä-* 'work, do or carry out something', *kagan* 'id.' > *kagan-la-* 'make somebody a *kagan*', *buzagu* 'calf' > *buzagu-la-* 'calve', 2. *boguz* 'throat' > *boguz-la-* 'cut somebody's (or an animal's) throat', *yagi* 'enemy, hostile' > *yagi-la-* 'engage in hostilities with someone', 3. *adut* 'palm of one's hand' > *adut-la-* 'scoop up with the palm of one's hand', *söz* 'word, speech, statement' > *söz-lä-* 'speak, say, talk with somebody', *so* 'chain' > *so-la-* 'to chain, fasten with chains', *at* 'horse' > *at-la-* 'ride a horse', *kış* 'winter' > *kış-la-* 'spend the winter somewhere, go into winter quarters', *yil* 'year' > *yil-la-* 'spend a year'

onomatopoetic

ori 'shout, outcry' > *ori-la-* 'shout', *yigi* 'lament, yammering' > *igla-* ~ *yigla-* 'weep', *tigilä-* 'make a certain sound, perhaps a droning one', *kakila-* 'produce cackling sounds (of birds)'

deadjectival

aduk 'fault, defect; useless, bad, excessively heavy' > *aduk-la-* 'find strange, to be astonished', *agir* 'heavy, important, burdensome' > *agir-la-* 'honor, respect', *yaviz* 'bad' > *yaviz-la-* 'think badly of something'

4.2. pJ *-*ya-* < pA *-*da-* transformation (denominal, deadjectival)

The Japanese transformative *-*ya-* analyzed in section 3.2.2. will be compared with regard to its denominal and deadjectival derivation only. Miller (1981: 869-870) follows Hattori (1959: 396-397) with respect to the Japanese reflex and does not distinguish between the deverbal and the denominal suffix. Ramstedt (1912: 40-43, 1952: 196-197) proposes the comparison discussed below for the Mongolic and Turkic cognates.

Tungusic

pTg *-*dā-* (Benzing 1955a: 1064): Ma. -*da-*, Evk. -*da-* ~ -*ta-*, Even -*dā-*, Ud. -*da-* ~ -*ta-*, Na. -*da-*

1. ‘reach the state expressed by the base noun’, 2. ‘cover with the base noun’, 3. ‘use the base noun for one’s advantage, use as a substitute for the base noun, play with the base noun’

‘gradually acquire the property expressed by the base adjective, become the base adjective (often of human subjects)’

denominal

Ma. *-dA-* (Benzing 1955a: 1064, Gorelova 2002: 236-37): 3. *ceku* ‘swing’ > *ceku-de-* ‘swing in a swing’, *yobo* ‘fun’ > *yobo-do-* ‘have fun, joke’, *faka* ‘wooden stick with a fork at one end’ > *faka-da-* ‘hit a ball with a wooden stick (play a type of game)’

Evk. *-dA-* ~ *-tA-* (Benzing 1955a: 1064, Nedjalkov 1997: 301): 1. *jal* ‘thought’ > *jal-da-* ‘think’, *gerbi* ‘name’ > *gerbi-te-* ‘be named’, *daptu* ‘issue of a river’ > *daptu-ta-* ‘fall into (a river)’ 2. *sekte* ‘branches’ > *sekte-de-* ‘cover with branches’, *juke* ‘ice’ > *juke-te-* ‘become covered with ice’, 3. *suke* ‘ax’ > *suke-de-* ‘hew, hack’, *ju* ‘house, tent’ > *ju-ta-* ‘live in a tent’, *belegē* ‘help’ > *belegē-te-* ‘profit by somebody’s help’, *ilken* ‘doll’ > *ilken-te-* ‘play with a doll’, *amin* ‘father’ > *amin-ta-* ‘consider as one’s father’, *enīn* ‘Mutter’ > *enīn-tē-* ‘consider as one’s mother’

Ud. *-dA-* ~ *-tA-* (Nikolaeva 1999: 170-71): 1. *akan* ‘back’ > *aka-ta-* ‘turn one’s back’, 2. *ñōyo* ‘glue’ > *ñōyo-do-* ‘cover with glue’, 3. *mozoli* ‘beads’ > *mozoli-te-* ‘wear beads’, *tiu* ‘stick’ > *tiu-de-* ‘lean on a stick’, *sina* ‘sack’ > *sina-da-* ‘carry a sack’, *suala* ‘ski’ > *suala-da-* ‘ski’, *uŋtu* ‘tambourine’ > *uŋtu-de-* ‘play the tambourine’

Na. *-dA-* (Benzing 1955a: 1064; Avrorin 1961: 17-18, 45; Menges 1968a: 201): 2. *alman* ‘tin, zinc’ > *alma-da-* ‘fill cracks with tin’, *nute* ‘tar’ > *nute-de-* ‘cover with tar’, 3. *merxe* ‘comb with fine teeth’ > *merxe-de-* ‘comb with a fine comb’, *cokor* ‘chisel’ > *cokor-da-* ‘work with a chisel’, *ciun* ‘flint’ > *ciun-de-* ‘strike fire’, *xiucen* ‘elbow’ > *xiucen-de-* ‘lean one’s elbows’

deadjectival

Although deadjectival derivation with this suffix is frequent in Manchu, it only sporadically occurs in Udehe and Nanai. I was unable to find examples from the other Tungusic languages.

Ma. *-dA-* (Benzing 1955a, 1064, Gorelova 2002, 236-37): *balama* ‘crazy’ > *balama-da-* ‘act crazy’, *goho* ‘elegant, dandy’ > *goho-do-* ‘adorn oneself’, *hūlhi* ‘confused’ > *hūlhi-da-* ‘act in a confused manner, be in a daze’, *jili* ‘anger’ > *jili-da-* ‘get angry’, *oshon* ‘cruel, brutal’ > *osho-do-* ‘be cruel, be brutal’, *bayan* ‘rich’ > *bayan-da-* ‘become rich’

Ud. *-dA-* ~ *-tA-* (Nikolaeva 1999: 173-174): *gē-* ‘bad’ > *gē-de-* ‘feel bad’, *pou-pou* ‘dark’ > *pou-te-gi-* ‘get dark’

Na. *-dA-* (Benzing 1955a: 1064, Avrorin 1961: 17-18, Menges 1968a: 201)
bayan ‘rich’ > *bayan-da-* ‘become rich’, *xele* ‘dumb, mute; stammerer’ > *xele-de-* ‘mutter, mumble, stammer’

Mongolic

In Mongolic we find two suffixes *-dA-* and *-d-* with similar semantics and overlapping derivational behavior. The former suffix frequently, but not exclusively derives verbs from nominal bases; the latter frequently, but not exclusively derives verbs from adjectival bases. We find examples where both suffixes attach to the same nominal base, such as SH MMo. *γodoli-d-* ~ WMo. *γoduli-da-* ‘shoot a horn-tipped arrow (intr.)’. Therefore, it is not unlikely that both suffixes go back to a single suffix, perhaps pMo **-dA-* with a sporadic epenthesis of the final vowel.

pMo **-dA-* > WMo. *-dA-* (Poppe 1954: 64), SH MMo. *-dA-* (Street 1957: 63, Rybatzki 2003: 65)

1. ‘reach the state expressed by the base noun’, 2. ‘make use of the base noun’
 ‘gradually acquire the property expressed by the base adjective, become the base adjective’

denominal

1. WMo. / SH MMo. *cisun* ‘blood’ > *cisu-da-* ‘become bloody, be bloodstained, smear with blood (tr./intr.)’, WMo. *idermeg* ‘fray, chip, score’ > *idermeg-de-* ‘become frayed, chipped or scored (intr.)’, WMo. *nere* ‘name’ > *nere-de-* ‘be known as, give a name (tr. / intr.)’, 2. WMo. *dayun* ‘sound, noise, voice’ > *dayu-da-* ‘call, evoke, read aloud, pronounce (tr.)’, WMo. / SH MMo. *arya* ‘trick, craft, plan’ > *arya-da-* ‘deceive, outwit, cajole (tr.)’, WMo. *γar* ‘hand’ > *γar-da-* ‘do something with one’s own hands, take in the hand (tr.)’, WMo. *buu* ‘gun, firearm’ > *buu-da-* ‘shoot with a firearm (intr.)’, WMo. *ig* ‘spindle’ > *ig-de-* ‘turn the spindle, spin (tr.)’, WMo. *γoduli* ‘horn-tipped arrow’ > *γoduli-da-* ‘shoot a horn-tipped arrow (intr.)’

deadjektival

WMo. *kei* ‘air, wind (n.); empty, idle, in vain (adj./adv.); hysterical, insane (adj.)’ > *kei-de-* ‘be blown away or off by the wind, fly off; become empty; become hysterical or insane (intr.)’, WMo. *γasiγun* ‘bitter(ness), sour (adj./ n.)’ > *γasiγu-da-* ‘grow bitter or rancid, sorrow, mourn (intr.)’

pMo *-d-> WMo. -(X)d- (Poppe 1954: 64), SH MMo. -d- (Street 1957: 63, 64; Rybatzki 2003: 65)

‘make use of the base noun’

‘gradually acquire the property expressed by the base adjective, become the base adjective’

denominal

SH MMo./ WMo. *duran* ‘heart, affection, inclination’ > *dura-d-* ‘mention, quote, invoke, implore (gods) (tr.)’, SH MMo. *γodoli* ‘horn-tipped arrow’ > *γodoli-d-* ‘shoot a horn-tipped arrow (intr.)’

deajectival

SH MMo. *yamtu* ‘together’ > *yamtu-d-* ‘unite, come together (intr.)’, WMo. *urtu* ‘long (in time and space); length (adj./n.)’ > *urtu-d-* ‘become (too) long, last, continue (intr.)’, WMo. *sula* ‘weak, poor, loose (adj.)’ > *sula-d-* ‘weaken, become light, insufficient (intr.)’, WMo. *örge* ‘wide, large, broad, vast, width (adj./n.)’ > *örge-d-* ‘become (too) wide, expand, be too loose (of clothing) (intr.)’, WMo. / SH MMo. *belen* ‘ready, prepared, in readiness (adj./adv.)’ > *bele-d-* ‘prepare, make ready, become ready (tr./ intr.)’, WMo. *cingya* ‘strong, tight, loud’ > *cingya-d-* ‘become too strong, tight, strict (intr.)’, WMo. *ariy* ‘pure, clear’ > *ariy-ud-* ‘become pure, clear, clean, holy (intr.)’

Turkic

pTk * -(A)d- > OTk. -(A)d- (Erdal 1991: 485-492)

‘reach the state expressed by the base noun (often of human subjects)’

‘gradually acquire the property expressed by the base adjective, become the base adjective (often of human subjects)’

denominal

baš ‘head’ > *baš-ad-* ‘be or become a leader’, *og* ‘pause, free time’ > *og-ad-* ‘tarry, fall behind’, *kut* ‘favor of heaven, good fortune’ > *kut-ad-* ‘become a blessing, enjoy divine favor and good fortune’

deadjectival

alp ‘tough, resistant, brave’ > *alp-ad-* ‘be or become a hero’, *kirgıl* ‘grey haired’ > *kirgıl-ad-* ‘turn grey haired’, *yagi* ‘enemy, hostile’ > *yagi-d-* ‘be or become hostile’, *yogun* ‘thick’ > *yogun-ad-* ‘become thicker’

4.3. pJ *-na- < pA *-na- process (deadjectival, deverbal)

Ramstedt (1912: 62-64) compares the Mongolic and Turkic suffixes below. Later (1952: 168-169) he proposes a rather speculative internal analysis of two Tungusic

suffixes and adds a so-called composite element to the etymology. Poppe (1972: 140-41) updates Ramstedt's proposal by adding the Tungusic deverbal suffix discussed below. I am unaware of any contributions advancing the Japanese (cf. section 3.2.3.) and Korean reflexes that are included here.

The proposed etymology is straightforward as far as the deadjectival and deverbal derivation is concerned. Phonologically, the nasal consonant corresponds regularly, and the vowel correspondence is satisfactory. The vowel of pMo **-ni-* is somewhat problematic, but it might be morphologically secondary since pMo **-na-* is attested as well. The absence of the final vowel in the Turkic reflex is consistent with the other Turkic deverbal suffixes compared in the present article. It is probably connected with the observation that verbs with CVC- structure in Turkic had an additional reduced vowel in proto-Turkic which later disappeared. The gradual loss of final reduced vowels in Old Turkic as demonstrated by Johanson (1979) is accepted in Turcological literature (Róna-Tas 1998: 72). Semantically, the common denominator is (spontaneous) development, often of natural phenomena. Therefore, I have tentatively reconstructed pA **-na-* as a processive suffix. The term 'processive' is used as an actional distinction in the sense of process versus action. Processive suffixes derive dynamic events that are not caused by an agent and develop spontaneously such as 'petrify', 'bloom', 'grow'. They are usually intransitive. Actions, on the other hand, are caused by an agent. They can occur in the imperative. The proposed etymology spreads over five branches. All branches display deverbal and deadjectival derivation. The denominal derivation is closely connected in a semantic sense, but it is only attested in Japanese and Tungusic. In all languages under comparison the nasal suffix occupies the leftmost ranks of the actional suffix chain.

Korean

pK **-no-* > MK *-no-* processive (Martin 1992: 261, 716, Yu 1973: 335)

'spontaneously develop and continue the state expressed by the base adjective'
'develop and continue the action expressed by the base verb'

Although the processive suffix MK *-no-* is lexicalized in contemporary Korean, verbs such as K *iss-nun-* 'elapse, stay' which derives from K *iss-* 'exist, be located', it is still productive in Middle Korean grammar. Martin (1992: 261) positions the suffix in the leftmost ranks of the verbal suffix chain. Only occasionally can it be preceded by suffixes expressing status. Other markers of actionality, politeness, mood and aspect follow the suffix. The processive MK *-no-* is mutually exclusive with the resultative MK *-ka-* and with the retrospective MK *-ta-*.

The effective suffix MK *-na-* is probably not directly related in this context. It is likely that MK *-na-* represents a case of internal grammaticalization by incorporation of the auxiliary MK *'na-* 'emerge'. Besides, its occurrence is restricted to a single verb, MK *'wo'na-* 'end up by coming, ultimately come' from MK *'wo-* 'come' (Mar-

tin 1992: 702, 933). Ramstedt (1939: 130) reports other petrified occurrences of the effective *-na-*, but apart from MK *khuna ho-* ‘be big, mighty, powerful’ (Yu 1967: 708) which can be derived from MK *’khu-* ‘be big’, I was unable to trace the forms. In the case of MK *khuna ho-* ‘be big, mighty, powerful’ we are probably dealing with the adversative *-(u)na* that appears in the construction *X-una X-un* ‘that is very X, as X as can be’, e.g. K *khuna khun* ‘ever so big, as big as can be’. I have found Ramstedt’s example *kina-* ‘extend’, which is derived from *kil-* ‘be long’, only in the context of MK *kina kin* ‘ever so long, as long as can be’.

deadjectival

All examples involve adjective stems that can function both as a descriptive intransitive verb (‘be X’) and as a processive intransitive verb (‘become X’). Martin (1992: 217) lists 14 stems that underlie complete paradigms as both processive and descriptive verbs. When MK *-no-* is attached to an adjective stem, it marks the base as a processive intransitive verb (‘become X’). It turns the adjective into a verb that denotes a dynamic process and that is not caused by an agent.

MK *kwut-* ‘be(come) hard’ >

MK *wuh-kwa a lay nung-hi selu kwut-no-n-i i-ta* (1586 *Sohak* 4:53b)⁷

(top-coordinative bottom be proficient-adverb reciprocally be(come) hard-processive-modifier-postmodifier ‘fact’ be-indicative assertive)
‘the top and the bottom, they both become fairly solid’

MK *hoy-* ‘be(come) white, light’ >

etuw-ul-ak twolwo hoy-no-n-i (1481 *Twusi* 7:14b)

(‘be(come) dark-prosp. modifier-postmodifier ‘one of two’ again be(come) light-processive-modifier-postmodifier ‘fact’)
‘It gets dark and then again it gets light.’

MK *’ha-* ‘be(come) big, plentiful’ >

MK *pwulhwuy ki’phu-n nam’k-on kwoc ’tywo-khwo ye-lum ha-no-n-i* (1445 *Yong* 2)

(root be(come) deep-modifier tree-focus flower be(come) good-gerund fruit be(come) big-processive-modifier-postmodifier ‘fact’)
‘The tree with deep roots, its blossoms become good and its fruit becomes plentiful.’

⁷ Between parentheses reference is made to the late Middle Korean (1443-1592) and modern Korean (1592-1900) sources where the sentence can be found. The source is preceded by the date when the work was created or first published. The abbreviations are *Yong* for *Yongpi echen ka*, *Wel* for *Welin sekpo*, *Twusi* for *Twusi enhay*, *Nam* for *Nammyeng-chen kyey-song enhay*, *Sohak* for *Sohak enhay* and *Twusi-cwung* for *Twusi enhay cwung kan*.

deverbal

Mod. *K atok ho-n kono-n pi wo-no-s-ta* (1632 Twusi-cwung 12:25b)
 (be dim-modifier be fine-modifier rain come down-processive-emotive-indicative assertive)
 ‘A dim fine rain sets in.’

MK *ˈmanh-i tut-tolwok ˈetwuk ˈsin-thi aˈni ˈho-no-n-i* (1482 Nam 1:36 b)
 (be many-adverb hear-projective ‘extent’ the more believe-postmodifier ‘the fact that’ negative auxiliary-processive-modifier-postmodifier ‘fact’)
 ‘The more I hear, the less I believe.’

MK *ˈpam-kwa ˈnac-kwa ˈyen-thyang ˈho-no-n-i-ngi-ta* (1459 Wel 7:59 b)
 (night-coordinative day-coordinative lecture auxiliary-processive-modifier-postmodifier ‘fact’-polite-indicative assertive)
 ‘They keep lecturing away night and day.’

Tungusic

pTg **-nA-* (Benzing 1955a: 1064, 1068): Ma. *-nA-*, Evk. *-nA-*, Even *-na-*, Ud. *-nA-*, Na. *-nA-* ‘spontaneously acquire a condition denoted by the base noun, develop natural phenomena denoted by the base noun’
 ‘spontaneously acquire a property denoted by the base adjective’
 ‘spontaneously develop the action denoted by the base verb (often of natural phenomena or bodily activities), carry out the verb base all over oneself’

denominal

Ma. *-nA-* (Ramstedt 1952: 193, Gorelova 2002: 236): *abdaha* ‘leaf’ > *abdaha-na-* ‘leaf, produce leaves’, *bongko* ‘bud of a flower’ > *bongko-no-* ‘bud’, *eifun* ‘pimple, swelling’ > *eifu-ne-* ‘develop a swelling’, *suihe* ‘ear of grain’ > *suihe-ne-* ‘put forth ears of grain’, *umiyaha* ‘worm’ > *umiyaha-na-* ‘to get worms (of fruit)’, *edun* ‘wind’ > *edu-na-* ‘become windy’, *asha-* ‘wing’ > *asha-na-* ‘get wings’, *talin* ‘lightning’ > *tali-no-* ‘flash (of lightning)’

Evk. *-nA-* (Benzing 1955a: 1064): *juseren* ‘lightning’ > *juse-ne-* ‘flash (of lightning)’, *ima-na-* ‘fall (of snow)’

Ud. *-nA-* (Poppe 1972: 140; Nikolaeva 1999: 172): *b’ata* ‘boy, fellow’ > *b’ata-na-* ‘become grown up (of a boy)’, *xatala* ‘girl’ > *xatala-na-* ‘become a girl’, *ute* ‘rotten wood’ > *ute-ne-* ‘molder away, become old’, *lusa* ‘Russian’ > *lusa-na-* ‘become russified’, *mō* ‘tree’ > *mō-no-* ‘become a tree’, *yakpa* ‘canyon’ > *yakpa-na-* ‘appear (of a canyon)’, *edi* ‘wind’ > *edi-ne-* ‘blow (of wind)’, *imā* ‘snow’ > *imā-na-* ‘to snow’, *sogdo* ‘steam’ > *sogdo-no-* ‘appear (of steam)’

Na. *-nA-* (Benzing 1955a: 1064, Avrorin 1961: 18)

saksa ‘frost pattern’ > *saksa-na-* ‘develop frost patterns’, *juke* ‘ice’ > *juke-ne-* ‘ice over, become covered with ice’, *jolo* ‘stone’ > *jolo-na-* ‘turn to stone, petrify’, *sugbin* ‘steam’ > *sugbi-ne-* ‘vaporize, appear (of steam)’, *xuren* ‘mountain, hill’ > *xure-ne-* ‘become mountainous’

deadjectival

Ud. *-nA-* (Nikolaeva 1999: 173): *manğa* ‘strong’ > *manğa-na-* ‘become strong’, *ede* ‘weak’ > *ede-ne-* ‘become weak’, *ñayma* ‘cold’ > *ñayma-na-* ‘freeze’, *sagdi* ‘old’ > *sagdi-ne-gi-* ‘become old’, *xutaligi* ‘red’ > *xutalihi-ne-* ‘become red’, *xoligi* ‘yellow’ > *xoligi-ne-* ‘become yellow’

Na. *-nA-* (Benzing 1955a: 1064, Avrorin 1961: 18): *dai* ‘big’ > *dai-na-* ‘be(come) big’, *masi* ‘strong, firm’ > *masi-na-* ‘become strong’, *egji* ‘many’ > *egji-na-* ‘be(come) many’, *sagji* ‘old’ > *sagji-na-* ‘become old’, *segjen* ‘red’ > *segje-ne-* ‘be(come) red’, *cagjan* ‘white’ > *cagja-na-* ‘be(come) white’

deverbal

Evk. *-nA-* (Pope 1972: 140-141): *dukte-* ‘hit, pond, beat (tr.)’ > *dukte-ne-* ‘beat (of the heart)’, *kiki-* ‘whistle, pipe’ > *kiki-ne-* ‘howl (of wind)’, **nasa-* ‘stretch, wave’ in *nasasō-* ‘wave’ and in *nasaka-* ‘stretch one’s arms sideways’ > *nasa-na-* ‘wave one’s arms, flap its wings’, *belge-* ‘quiver, shudder, startle’ > *belge-ne-* ‘be agitated, fret oneself about something’

Ud. *-nA-* (Pope 1972: 140, Nikolaeva 1999: 183) is a suffix that only applies to intransitive verbs and frequently to inchoative intransitives. It denotes that the action takes place on the whole surface of the subject or that the subject is multiple. Ud. *tijme-* ‘fall down’ > *tijme-ne-* ‘collapse over the whole surface, fall into pieces’, *bukta-ga-* ‘break (inchoative)’ > *bukta-ga-na-* ‘break all over, break in several places’, *kakta-ga-* ‘crack (inchoative)’ > *kakta-ga-na-* ‘crack all over, crack in several places’

Benzing (1955a: 1064, 1068), Avrorin (1961: 18, 49-50) and Pope (1972: 140) treat the deverbal reiterative suffix Na. *-nasi-* as a compound of **-na-* and **-si-*. They relate the former element to the deverbal suffixes discussed above. One should be aware that the insertion of morphological boundaries on the basis of external comparison makes the evidence more speculative and, to a certain extent, circular. However, in this case we dispose of an internal indication for the boundary because Na. *-si-* is attested as a separate actional suffix deriving continuous, multiple or occasional actions (Avrorin 1961: 46). Na. *omi-* ‘drink, smoke’ > *omi-nasi-* ‘take to the bottle,

smoke from time to time', *kalma-* 'crack, burst' > *kalma-nasi-* 'crack all over, chap',
gele- 'ask, request, want' > *gele-nesi-* 'beg, cadge'

Mongolic

pMo *-nA-, -ni- > WMo. -nA-, -ni-

'spontaneously develop the verb base, carry out the verb base on oneself'

deadjectival (quality verbs)

WMo. *meŋde-* 'be or become excited, confused' > *meŋde-ni-* 'be or become excited, confused', WMo. *togta-* 'become stabilized, fixed' > *togta-ni-* 'come to rest, calm down',

deverbal

WMo. *jagatu-lca-* 'rub against each other' > *jagatu-na-* 'itch', WMo. *joba-* 'suffer, worry, grieve' > *joba-ni-* 'feel anxiety, be agitated, fret oneself about something', *toqu-* 'put one thing over another, put on or over' > *toqu-ni-* 'settle down, fall in line, become quiet', WMo. *sibe-r* 'whisper', *sib-si-* 'speak in a low voice, whisper' > *sibe-ne-* 'whisper', WMo. *bada-na-* 'babble, grumble'

As explained in the following section (4.4.), I think that the analysis (Poppe 1972: 141, Tekin 1982: 507) of the onomatopoeic suffix WMo. -*ginA-* as a compound of iconic pMo *-*gi-* and reflexive pMo *-*nA-* is incorrect.

Turkic

pTk *-n-> OTk. -(X)n- (Erdal 1991: 584-639)

'1. spontaneously develop the verb base, 2. carry out the verb base for one's own benefit, 3. carry out the verb base on oneself'

Erdal (1991: 634-637) illustrates cases of -(X)n- derivatives that take a direct object. In this way he demonstrates that although the derived verbs semantically display medial-reflexive behavior, they are not always medial-reflexive in a syntactic sense. Semantic modification without impact on the valency of the verb can serve as an indication that we are dealing with an original actional suffix instead of a diathetical marker.

deadjectival (quality verbs)

ar- 'be tired, exhausted, weak' > *ar-în-* 'tire (intr.)', *ari-* 'be(come) clean, pure' > *ari-n-* 'purify oneself, be pure', *isi-* 'be hot' > *isi-n-* 'have warm feelings towards someone', *kat-* 'be(come) hard' > *kat-în-* 'become hard, tough'

deverbal

1. *bar-* 'go' > *bar-în-* 'flow off from a person's body', *to-* 'close, block' > *to-n-* 'be closed, be blocked', *bašla-* 'begin, lead (tr.)' > *bašla-n-* 'begin (intr.)', *bärt-* 'wound

or break without inflicting visible injury' > *bärt-in-* 'get injured', 2. *bak-* 'look at' > *bak-in-* 'look for one's own benefit, look around', *kör-* 'see' > *kör-ün-* 'become visible, be seen, see for oneself', 3. *alk-* 'destroy, use up, finish' > *alk-in-* 'consume or exhaust oneself', *ač-* 'open (tr.)' > *ač-in-* 'open one's clothes, baring the bosom, disclose one's sins', *yu-* 'wash (tr.)' > *yu-n-* 'wash (intr.), wash oneself'

4.4. pJ *-ka- < pA *-ki- iconic (deadverbial)

Ramstedt (1912: 36-37) compares the Mongolic and Turkic iconic suffixes and devotes an article (1951) to the topic. Erdal (1991: 468) argues in favor of the connection proposed by Ramstedt. Tekin (1982) updates Ramstedt's work and adds Tungusic cognates. Miller (1982: 401) advances the Japanese cognate along with a Korean reflex different from the one proposed here.

Iconic pA *-ki- has a complete etymology, stretching over five branches. Except for Japanese, where all actional suffixes have a final vowel *-a-*, the correspondences are regular for consonant and vowel. The meanings and derivational bases are identical. We cannot exclude that the ultimate origin of this suffix is a common Altaic auxiliary **ki-* 'do, make'. The root may be preserved in WMo./ SH Mmo. *ki-* 'do, make, produce', in OTk *kīl-* 'do, make' and in a number of causative formations throughout Altaic. The etymology of **-ki(-)rA-*, however, is more problematic. Erdal (1991: 465, 468) contends that "they [OTk *-kI-* and *-kIr-*] must have been related in proto-Turkic or in proto-Altaic (if such a language ever existed)." and that "This analysis [OTk *-kIr-* as a composite] is not in contradiction with a connection with Mo. *+kirA-*, as that could also be a composite suffix." Since the so-called composite iconic suffixes are only attested in Turkic and Mongolic, it is not unlikely that we are dealing with code-copying.

Korean

K *-i-* < pK **(k)i* 'produce a sound or a sensation like the base onomatopoeia'

Korean derives sound symbolic verbs from onomatopoeia (= X) using the constructions *X-ha-* 'do X', *X-keli-* 'do X repeatedly or continuously, sound like X' and, less frequently, *X-i-* 'do X repeatedly or continuously, sound like X'. Since the large majority of the onomatopoeia followed by K *-i-* 'do repeatedly, sound like' end in a velar stop *-k*, it is not unlikely that K *-i-* goes back to pK **-ki-*. We find only few cases where K *-i-* 'do repeatedly, sound like' occurs after a final liquid *-l* or velar nasal *-ŋ*. Ramstedt (1939: 140) reports to have found K *-(k)i-* following onomatopoeic expressions, but I am unable to trace the forms with *-ki-*. All make use of *-i-* instead. Martin (1992: 588) is tempted to regard K *-i-* as a reduction from K *(kel)i-*. But given the relative infrequency of the former vis-à-vis the latter and given the large scale of the proposed reduction, I tend to consider K *-i-* (< pK **-ki-*) as a more conservative element. Miller (1982: 401) does not consider K *-i-* and proposes K *keli-* as a cognate. In light of the comparative evidence (Wmo. *-kirA-* < ? pMo **ki-*

rA-, OTk. *-kIr-* < ? pTk **-kI-* + **(-I)r-*) I cannot exclude that K *keli-* is a further derivation of pK **ki* with **-le-* (verba media, cf. section 3.2.1.), but this is speculative, for it requires metathesis of the Korean vowels.

onomatopoeitic

K *wumcik wumcik* ‘budging, stirring, moving’ > *wumcik-i-* ‘move, stir, put in motion’⁸, K *kkancak kkancak* ‘being persistent’ > *kkancak-i-/ kkancak-keli-* ‘stick to, adhere to, cling to, be persistent’, K *kutek, kkutek, kkuttek* ‘nodding, bobbing, making a slight movement’ > K *kutek-i- / kutek-keli-* ‘nod’, MK *kuteki-* ‘nod (one’s head)’, K *tulmek* ‘shaking’ > *tulmek-i- / tulmek-keli-* ‘shake’, K *(s)swuktek (s)swuktek* ‘in whispers, under one’s breath’ > K *(s)swuktek-i- / K (s)swuktek-keli-* ‘whisper’, K *(s)swuktel (s)swuktel* ‘in whispers, under one’s breath’ > K *(s)swuktel-i- / K (s)swuktel-keli-* ‘whisper’, *tallang tallang* ‘frivolously, restlessly’ > *tallang-i- / tallang-keli-* ‘act frivolously, be restless, be always on the move’

Tungusic

pTg **-ki-* is lexicalized in onomatopoeitic verbs: Ma. *-ki- ~ -gi-*, Evk. *-ki- ~ -gi-*, Even *-kī- ~ -gī-*, Na. *-ki- ~ -gi-* ‘produce a sound or a sensation like the base onomatopoeia’

onomatopoeitic

Ma *-ki- ~ -gi-*: *jor* ‘sound of many humans or of screaming animals’ > *jorgi-* ‘chirp, twitter, hum’, *tur* ‘sound of a horse clearing its nose’ > *turgi-* ‘clear the nose (of horses), snort’, *holor* ‘sound of a bell’ > *hōrgi-* ‘ring’, *cargi-* ‘explode’, *kemki-* ‘gnaw, bite (of dogs, geese)’

With the surface exception of Ma. *carki-* ‘rattle together (as belt pendants), create a dissonance, tinkle’, which in reality is a borrowing from WMo. *cargi-* ‘rattle, make a harsh sound, speak harshly’ (Rozycki 1994: 45), the suffix usually undergoes lenition to *-gi-* after the liquid *r*.

Evk. *-ki- ~ -gi-*: *simki-* ‘cough’, *uŋki-* ‘cry, weep’, *ñeki-* ‘gnaw, crunch’, *hēlki-* ‘flash (of lightning)’, *kikī-* ‘whistle, pipe’, *burgī-* ‘flow with a splashing noise’, *cirgi-* ‘chirp, twitter’, *kingī-* ‘sound, ring’, *kergi-* ‘snort’, *sirgi-* ‘make a clattering noise, creak, scream’, *dergi-* ‘shiver, tremble’, *sargi-* ‘splatter (of water, rain)’

Even *-kī- ~ -gī-*: *hiēmki-* ‘cough’, *hargī-* ‘snort, pant’, *jōŋī-* ‘resound, echo; imitate’

⁸ In Korean ***wumcik keli-/ ha-* is not attested, we find *wumcil keli-/ ha-* ‘moving timidly’ from *wumcil, wumccil* ‘moving timidly’ instead. This may serve as an indication that the velar in K *wumcik-i-* originally belonged to the suffix (? < pK **wumci(l)-ki-*).

Na. *-ki-* ~ *-gi-*: *siŋbi-* ~ *simki-* ‘cough’, *nirgi-* ‘thunder’, *xurgi-* ‘make noise’, *dergi-* ‘shiver, tremble’, *fulgi-* ‘blow’

Mongolic

pMo **-ki-* > WMo. *-ki-* (~ *-gi-* following a vowel or *-r-*)

pMo **-ki-* + **-rA-* medial ? > WMo. *-kirA-* (~ *-girA-* ~ *-ginA-* following *-ng-*)
 ‘produce a sound like the base onomatopoeia’

WMo. *-ki-* ~ *-gi-*: *cuu* ‘sound, noise, echo, rumor’ > *cuu-gi-* ‘make noise, shout (of many people), quarrel’, WMo. *ša* ‘sound of a downpour’ > *ša-gi-* ‘pour, rain heavily’, *car* ‘sound of voice, cry, clamour’ > *car-gi-* ‘make a harsh sound, rattle, speak harshly’, *bar-gi-* ‘produce a hoarse sound, speak with a hoarse voice’, *tur-gi-* ‘snort (of horses)’, *cis-ki-* ‘chirrup, chirp, twitter, tweet’, *kürd* ‘sudden explosive noise’ > *kürd-ki-* ‘make noise, shout, talk nonsense’ ~ *kür-ki-* ‘talk nonsense, chatter indiscreetly’, *tüs* ‘sound expressing sudden blow or banging noise’ > *tüs-ki-* ‘make a crashing sound’, *šuu-gi-* ‘whistle, rustle, sing, howl (of wind)’

WMo. *-kirA-*: *qas-kira-* ~ *qaš-kira-* ‘shout, scream, yell, howl’, *bar-kira-* ‘roar, bellow, cry, yell’, *ar-kira-* ‘growl, snarl’, *kür-kire-* ‘grow, grunt, snarl, roar (as a waterfall)’, *or-kira-* ‘roar, bawl, growl, whistle (as an arrow)’

WMo. *-girA-* ~ *-ginA-*: *qang-gina-* ‘sound, ring, resound, whine, creak’ ~ *qang-gira-* ‘rattle’, *qong-gina-* ‘ring, sound resonantly’ ~ *qong-giras-* ‘ring’, *küng-gine-* ‘make a hollow sound’ ~ *küng-gires-* ‘sound, make noise, neigh’, *gang-gina-* ‘yelp, give forth piercing cries, cackle, gaggle (of geese)’, *cing-gine-* ‘ring, resound’, *yang-gina-* ‘emit a sharp, high-pitched sound, ache’, *šuu-gina-* ‘whistle, make noise (of wind, waves)’

Tekin (1982: 507) analyzes WMo. *-ginA-* as a compound of iconic pMo **-gi-* and the reflexive pMo **-nA-*, discussed in section 4.3. However, in the large majority of the examples WMo. *-ginA-* appears after sound symbolic expressions with a final velar nasal. Therefore, the alternant can better be explained by nasal assimilation. This explanation cannot account for WMo. *šuu-gina-* ‘whistle, make noise (of wind, waves)’.

Turkic

pTk **-kI-* > OTk. *-kI-*

pTk **-kI-* + **-(I)r-* medial ? > OTk. *-kIr-*

‘produce a sound or a sensation like the base onomatopoeia’

OTk. *-kI-* (Erdal 1991: 468, Tekin 1982: 508): OTk. *bīrkīr-* ‘snort’, OTk. *bīrkīg* ‘snort (of a horse)’,⁹ OTk. *okī-* ‘call, call out loud, recite’, OTk. *okī-* ‘vomit’, OTk. *tok tok* ‘knocking sound’ (onomat.) > OTk. *tokī-* ‘hit, knock, beat, weave’

OTk. *-kIr-* (Erdal 1991: 466-467; Tekin 1982: 509-510): *ay* ‘oh, hi’(exclamation) > *ay-kīr-* ‘shout out loud’, (Tk. *bar bar* ‘bellowing sound’ >) *ba-kīr-* ‘bellow’, *kī:* ‘hi!’ (exclamation) > *kī:-kīr-* ‘shout’, *sikkīr-* ~ *sikīr-* ‘whistle’, *alakīr-* ‘shout’, *bīrkīr-* ‘snort’, *ūškir-* ‘whistle, hiss’.

4.5. pJ **-ma-* < pA **-ma-* intention/inclination (denominal, deadjectival, deverbal)

Although I am unaware of any etymologies proposed for pJ **-ma-* analyzed as a suffix denoting inclination in section 3.2.5., Martin (1991a: 285), Unger (2000: 664), Vovin (2001: 194) propose various Korean cognates for the modal suffix OJ *-(a)ma-* that is probably internally related to pJ **-ma-*. Vovin further adds the Evenki desiderative suffix *-mu-*. Miller (1985: 68-69) compares a derived complex suffix OJ *-maku* (< **-ma-* + **-ku-* nominalization) to the Turkic infinitives in *-mAk*. Another derived suffix, the subjunctive and desiderative marker *-amasi* (< **-ma-* + **(po)si-* ‘be desired’), is compared to various Tungusic suffixes by Miller (1985: 61) and Vovin (2001: 194-195). I do not support these proposals because they compare forms that are morphologically complex in Japanese to external look-alikes. Ramstedt (1952: 181-182) explains the Tungusic forms as independent verbal forms that underwent grammaticalization.

The phonological and semantic correspondences of the etymologies suggested here are satisfactory. However, the derivational bases do not completely overlap. Mongolic lacks denominal derivation and in Tungusic and Mongolic few examples are found of deadjectival derivation. The deverbal suffixes in Korean and Tungusic are distinct from the denominal and deadjectival suffixes. They have a different vowel. The denominal and deadjectival suffixes are immediately attached to the primary lexical stem, while the deverbal suffixes occur in a relative outer position in the chain. The latter are modal suffixes that are still productive in grammar to denote desiderative or intentional mood. Although similar in form and meaning, their outer position makes them weaker cognate candidates for the Japanese actional suffix.

Korean

pK **-m(u/o)-* > K, MK *-m-* (after *-l-*), K, MK Ø (elsewhere)

⁹ OTk *-g* derives deverbal nouns, as e.g. in OTk. *bilig* ‘mental process’ from *bil-* ‘know’ and in OTk. *bag* ‘bale, bundle’ from OTk. *ba-* ‘bind, tie, fasten’ (Erdal 1991: 182). The derivation of pTk **bīr-kī-* ‘snort’ from **bīr* ‘sound made by a horse’ is further supported by OTk. *bīr-kīr-* ‘snort’.

‘1. attempt to cover the space denoted by the base noun, 2. make use of the base noun’

‘give the impression of the state denoted by the base adjective’

pK *-*ma*- > K, MK -*ma*-

‘intend to carry out the action denoted by the base verb’

The lexicalized suffix *-m-* has left a segmental trace following liquid phonemes (*-l*) only. The derived verbs on *-lm-* all have a rising tone in Middle Korean or length in Korean, suggesting a disyllabic origin. For nouns ending in nasals (*-n/-m*) the same semantic modification is obtained by zero verb derivation. This becomes clear from the example with *-m-* derivation, K *pāl* ‘the span of two arms’ vs. K *pālm-* ‘measure in arm spans’ as compared to the example with zero derivation, K *pyēm* ‘span of a hand’ > K *pyēm-* ‘measure in hand spans’. Although the verbal derivation of nouns ending in *-n*, *-m* is zero segmentally, it does leave a trace suprasegmentally. In contrast to the base nouns, the derived verbs have a rising tone (ˊ) in Middle Korean that corresponds to length in contemporary Korean. The parasegmentals suggest that the derived verbs are disyllabic in origin. It can also be remarked that we find only three simple verb stems ending on *-n* in Middle Korean: MK *ˊsin-/s̄n(u/o)-* ‘wear (shoes)’, MK *ˊan-/ān(o)-* ‘embrace’ and MK *ˊten-/t̄nu-* ‘wager, bet’. Two can be derived from noun bases as in the examples below. These are the verbs of which Martin (1996: 5) invitingly asks: “Why are there so few *..n*-stems to begin with? Were they derived from nouns?”

denominal

1. K *pāl* ‘the span of two arms, unit of length equal to the span of two arms, 2 yards’ > K *pālm-*, MK *palm-* ‘measure off the length in double-arm spans (2 yards)’, K *pyēm* ‘span, span of a hand’ > K *pyēm-* ‘measure by the span, span off with one’s hand’, K *phum*, MK *ˊphum* ‘width of a coat, bosom, space between the chest and clothes’ > K *phum-*, MK *ˊphum-* ‘carry in the bosom, embrace, harbor’,¹⁰ K *an*, MK *ˊanh* ‘interior, inside’ (*-h* place suffix) > K *ān-*, MK *ˊan-* ‘hold in one’s arms, embrace’, 2. K *sal* ‘frame, spoke, teeth (of a comb, etc.), fish spear’ > K *sālm-* ‘harrow (the soil), rake (the soil)’, K *saym*, MK *soym* ‘source, well, spring’ > MK *soym-*

¹⁰ MK *ˊphum* ‘bosom’ may derive as a deverbal noun on *-m* from MK *ˊphu-* ‘bloom, spread, extend’ (Martin 1996: 25, 47). Martin (1996: 47) remarks that the internal derivation of MK *ˊphum-* ‘embrace’ is “at the expense of at least part of the comparison with pJ **pukuma-* L ‘hold in the mouth, harbor, comprise, contain’”. But, if Japanese *hukumu* ‘harbor, contain’ can be derived as pJ **puku-ma-* in reference to the analysis in section 3.2.5., the comparison with MK *ˊphum-* ‘carry in the bosom, embrace, harbor’ (< **puku-m(u)-*) remains possible.

‘spring up, spurt up’,¹¹ K *sin*, MK *ˈsin* ‘footwear, (Korean style) shoes’ > MK *ˈsin-* ‘wear (shoes), use as footwear’

deadjektival

K *kwul* ‘hole, cave, cavity, empty’, K *kwulh-* = *kolh-*, MK *kwolh-* ‘be empty’ > K *kwulm-* ‘starve, skip a meal, go hungry’, MK *ˈkwulm-* ‘hunger, go without food, become empty’, K *kolum* ‘pus, purulent matter’ (K *-m* deverbial noun from **kwol-* ‘be purulent, be rotten’), K *kolh-* ‘go bad, rot, spoil, get stale’, MK *ˈkwolq-* ‘fester (intr.)’¹² > K *kolm-* ‘form pus, fester’, MK *kwolm-* ‘form pus, fester (intr.)’, K *telep-* ~ *talap-*, MK *ˈtelep-* ~ *ˈtalap-*, *ˈteleW-* ~ *ˈtalaW-* ‘be muddy, dirty’ (< **tele-* ‘be dirty’ + pK **-·po-* adjective suffix¹³) > MK *ˈtelm-* ‘become dirty, get stained, get dyed’

deverbal

Martin (1991a: 285, 1992: 248) and Vovin (2001: 194) propose an etymology for the modal suffix OJ *-(a)ma-* that is probably internally related to pJ **-ma-*. They relate the Japanese tentative to the Korean modal suffix K/ MK *-ma* ‘will, be willing to, intend to, promise’. The suffix is still productive in Korean and denotes intentions or assumptions. As a modal suffix it occurs relatively to the right in the suffix chain. Its outer position weakens the comparison with the Japanese actional suffix.

K *Nayil ka-ma.*

(Tomorrow go-intentional)

I will come tomorrow

K *Ku kes-un kutay-lo ha-y cwu-ma.*

(That thing-focus that way-manner do-infinitive give-intentional)

‘I’ll do it just as you wish.’

Tungusic

pTg **-mĀ-* (Benzing 1955a: 1064): Evk. *-mA-*, Even *-mĀ-*, Ud. *-mA-*, Na. *-masi-*

¹¹ MK *ˈsoym* ‘source, well, spring’ may derive as a deverbial noun on *-m* from MK *ˈsoy-* ‘leak’.

¹² MK *q* is a morphophonemic symbol, used by the Yale Romanization to represent all instances of noninitial reinforcement. In Middle Korean *q* represents a glottal stop that remains unpronounced when initial, but represents reinforcement when final.

¹³ MK *-W-* ~ *-p-* < pK **-·po-* is a suffix that derives depictive adjectives from adjective stems such as in MK/K *kwut-* ‘be hard, be firm (in belief)’ > K *kwuteW-* ‘be gullible, quick to believe’, MK *te i-* ‘warm up’ > MK *ˈteW-* ‘be warm, hot’. If MK *ˈtelep-* ~ *ˈtalap-*, *ˈteleW-* ~ *ˈtalaW-* ‘be muddy, dirty’ can be derived from the adjective base **tele-* ‘be muddy, dirty’ followed by this suffix, the base is perhaps cognate with J *doro* ‘mud, mire, dirt’.

‘attempt to achieve the base noun, hunt the base noun, incline to the position, state or being denoted by the base noun’

pTg **-mī-* (< **-mā-* + *-gi-* causative) (Benzing 1955a: 1065)

‘make, achieve the base noun, attach to the base noun, hunt the base noun’

‘turn into / reach the adjective base’

pTg **-ma-*, **-mu-* (Benzing 1955a: 1069): Evk. *-mu-*, Even *-m-*, *-mš-*, Neg. *-mu-*, Ud. *-mūi-*, Na. *-mosi-* ~ *-musi-*

‘intend, want, be inclined to carry out the action denoted by the verb base’

denominal

Ma. *-mi-* (Gorelova 2002: 236): *doko* ‘lining of a garment’ > *doko-mi-* ‘line (a garment)’, *tohon* ‘button’ > *toho-mi-* ‘button (up)’, *ture* ‘leg of a boot’ > *ture-mi-* ‘attach the leg of a boot’

Evk. *-mA-* (Benzing 1955a: 1064-65, Nedjalkov 1997: 300): *taman* ‘cost, price’ > *taman-ma-* ‘pay’, *uluki* ‘squirrel’ > *ulu-me-* ‘hunt squirrel’, *ollo* ‘fish’ > *ollo-mo-* ‘to fish’, *mōti* ‘elk’ > *mōti-ma-* ‘hunt elk’

Evk. *-mi-* (Benzing 1955a: 1065, Nedjalkov 1997: 301): *ollo* ‘fish’ > *ollo-mi-* ‘to fish’, *beyun* ‘wild reindeer’ > *beyu-mi-* ‘hunt wild reindeer’, *here* ‘lower part, bottom, sole’ > *her-mi-* ‘sole, attach a sole’, *sen* ‘eye of a needle’ > *sen-mi-* ‘thread a needle’

Even *-mĀ-* (Benzing 1955a: 1065): *ulikī* ‘squirrel’ > *ul-mē-* ‘hunt squirrel’, *tebekī* ‘tobacco’ > *tebekī-mē-* ‘go and get tobacco’, *aman* ‘father’ > *am-mā-* ‘like the father’

Even *-mī-* (Benzing 1955a: 1065): *ulikī* ‘squirrel’ > *ul-mī-* ‘hunt squirrel’, *olra* ‘fish’ > *olra-mī-* ‘fish, catch fish’

Ud. *-mA-* (Nikolaeva 1999: 169-170): *xoton* ‘city’ > *xoto-mo-* ‘go to the city’, *āda* ‘mountain pass’ > *āda-ma-si-* ‘cross the mountain’, *jege* ‘reference point’ > *jege-me-* ‘orientate oneself’, *kakt’a* ‘half’ > *kakt’a-ma-* ‘divide in half’, *tō* ‘fire’ > *to-mo-* ‘warm on a fire’, *ānta* ‘woman’ > *ānta-ma-* ‘womanize’, *ilaka* ‘bast’ > *ila-ma-* ‘bark lime-trees’, *olondo* ‘ginseng’ > *olondo-mo-* ‘collect ginseng’, *oloxi* ‘squirrel’ > *oloxi-me-* ‘hunt for squirrels’, *l’asa* ‘goby fish’ > *l’asa-ma-* ‘catch goby fish’

Benzing (1955a: 1065) and Avrorin (1961: 21) treat the denominal suffix Na. *-masi-* ‘hunt for the base noun’ as a compound of **-ma-* and **-si-*. The second element is suggested to be the deverbial suffix Na. *-si-* for continuous, multiple or occasional actions (Avrorin 1961: 46) that also underlies in the reiterative suffix Na. *-nasi-*, analyzed in section 4.3. above. E.g. *gasa* ‘goose’ > *gasa-masi-* ‘hunt geese’, *giu* ‘deer’ > *giu-mesi-* ‘hunt deer’, *moksa* ‘hare’ > *moksa-si-* ‘hunt for hares’, *sogda* ‘fish’ > *sogda-masi-* ‘fish, catch fish’

deadjectival

Only in Manchu was I able to trace examples of deadjectival derivation.

Ma. *-mi-* (Gorelova 2002: 236): *bolgo* ‘clean, clear’ > *bolgo-mi-* ‘abstain, fast’, *goro* ‘far’ > *goro-mi-* ‘do from afar, go a long distance’

deverbal

Evk. *-mu-* (Nedjalkov 1997: 302): *ā-* ‘sleep’ > *ā-mu-* ~ *ā-me-* ‘want to sleep’, *bu-* ‘die’ > *bu-mu-* ‘be ill’, *jep-* ‘eat’ > *jep-mu-* ‘be hungry’, *um-* ‘drink’ > *um-mu-* ‘want to drink, be thirsty’, *inekte-* ‘laugh’ > *ine-mu-* ‘smile’

Ramstedt (1952: 181-182) and Benzing (1955a: 1069) treat the deverbal desiderative suffixes Even *-mš-*, Ud. *-mūi-*, Na. *-mosi-* ~ *-musi-* as compounds of **-mu-* and **-si-*. The second element is identified as the deverbal suffix for continuous, multiple or occasional actions.

Ud. *-m^oi-* (Nikolaeva 1999: 189): *umi-* ‘drink’ > *umi-mūi-* ‘want to drink’, *iñi-* ‘laugh’ > *iñi-mūi-* ‘want to laugh’, *ηene-* ‘go’ > *ηene-mūi-* ‘want to go’, *tigde-* ‘rain’ > *tigde-mūi-* ‘be going to rain’

Na. *-mosi-* ~ *-musi-* (Avrorin 1961: 64): *jep-* ‘eat, feed’ > *je-musi-* ‘want to eat, be hungry’, *omi-* ‘drink, smoke’ > *omi-mosi-* ‘want to drink, smoke, be thirsty’, *ao-* ‘sleep, lie down’ > *a-masi-* ‘want to sleep, be sleepy’

Mongolic

pMo **-mA-*: WMo. *-mA-* ‘attempt or intend to carry out the verb base, be inclined to carry out the verb base, be able to carry out the verb base’

pMo **-mA-* + **-G* deverbal noun > WMo. *-mAG* deverbal noun denoting inclination (Poppe 1954: 45, 48)

pMo **-mA-* + *-Gai* deverbal noun > WMo. *-mAGAi* deverbal noun denoting inclination or ability to act (Poppe 1954: 45, 48)

pMo **-mA-* + *-l* deverbal noun > WMo. *-mAl* deverbal noun denoting the result of craftsmanship (Poppe 1954: 47, 48)

pMo **-mA-* + *-r* deverbal noun > WMo. *-mAr* deverbal noun denoting suitability or fitness (Poppe 1954: 48, 49)

The intentional suffix pMo. **-mA-* has lexicalized in a number of stems. Although the semantics ‘attempt, intend, be inclined to, be about to’ became obscure in the following examples, they are still clearly reconstructable from the composite suffixes. Apart from WMo. *-Gai*, the individual suffixes forming the second part of

the compound are exclusively deverbal. This suggests that **-ma-* is a suffix that derives verbs.

WMo. *-ma-*: WMo. *cir-* ‘drag, pull along’ > *cir-ma-* ‘strive after, endeavor, make an effort’, WMo. *oi-* ‘rebound, avoid, go away in another direction’ > *oi-ma-* ‘swim (across), ford, fly’, WMo. *kele-* ‘speak, say’ (> **kele-me-*) *keme-* ‘say, be named, intend’,¹⁴ WMo. *üi-* ‘mix’ > *üi-me-* ‘become disturbed, bustle’

WMo. *-mAG-*: *ide-* ‘eat, consume’ > (**ide-me-* ‘want to eat’) > *ide-me-g* ‘having a good appetite, greedy’, *egede-* ‘turn sour, curdle’ > (**egede-me-* ‘be about to turn sour’) > *egede-me-g* ‘curdled milk, mixture of cold milk and hot buttermilk, food for domestic animals’, *jori-* ‘move in the direction of, strive, be resolved’ > (*jori-ma-* ‘intend to move in a certain direction’) > *jori-ma-V* ‘willful, intentional, having a purpose, courageous’

WMo. *-mAGAi-*: *ide-* ‘eat, consume’ > (**ide-me-* ‘want to eat’) > *ide-me-gei* ‘voracious, venal’, *jori-* ‘move in the direction of’ > (*jori-ma-* ‘intend/ be able to move in a certain direction’) > *jori-ma-gai* ‘enterprising, decided, resolute’, *umta-* ‘sleep’ > (**umta-ma-* ‘want to sleep’) > *umta-m-qai* ‘be sleepy’, *sur-* ‘learn, study, ask, inquire’ (> **sur-ma-* ‘be inclined to, be able to learn’) > *sur-ma-γai* ‘be gifted, be trained, be experienced’

WMo. *-mAl-*: *jiru-* ‘draw (a line, a picture)’ (> **jiru-ma-* ‘be able to draw’) > *jiru-ma-l* ‘sketched, painted’, *bici-* ‘write, inscribe’ (> **bici-me-* ‘be able to write’) > *bici-me-l* ‘writing, manuscript, inscription’, *neke-* ‘knit, weave’ (> **neke-me-* ‘be able to weave’) > *neke-me-l* ‘woven, knitted, textile’

WMo. *-mAr-*: *ide-* ‘eat, consume’ > (**ide-me-* ‘want to, be possible to eat’) > *ide-me-r* ‘edible, consumed, eaten, having a keen appetite’, *üje-* ‘see, behold, look at, glance at’ (> **üje-me-* ‘want to, be able/possible to see’) > *üje-me-r* ‘scene, sight, exhibition’

deadjectival (quality verbs)

WMo. *-mAr-*: *γaiqa-* ‘be astonished, surprised’ > *γaiqa-ma-r* ‘astonishing, surprising’, *ayu-* ‘be frightened’ > *ayu-ma-r* ‘horrible, frightening’

¹⁴ The derivation of WMo. *keme-* ‘say, be named, intend’ suggests the same liquid syllable loss as is observed in the alternation of WMo. *kele-* ‘speak, say’ with WMo. *kelele-* ‘say, speak’, derived from from *kelen* ‘word, speech, tongue’.

4.6. pJ **-ka-* < pA **-ga-* inchoative (denominal, deadjectival, deverbal)

Ramstedt (1912: 54-59) compares the denominal and deverbal inchoatives in Mongolic and Turkic. Later (1952: 200-201) he adds the Korean denominal inchoative to the etymology. Although he labels them ‘intensives’, Miller (1981: 867-868) compares the Japanese and Turkic deverbal suffixes. In an article (1982) devoted to this suffix he includes Korean, Tungusic and Mongolic cognates. Poppe (1972: 123-124) reconstructs a Tungusic transitive suffix on the basis of the derived Evenki verbs, but in reference to the Udehe material, the original Tungusic suffix was probably an inchoative.

The etymology discussed here is straightforward as far as the denominal inchoative is concerned. I was unable to find examples of deadjectival derivation in Tungusic. In Korean the evidence for deadjectival and deverbal derivation is rather speculative. From a phonological perspective, the voiced velar correspondence is regular (Robbeets 2005a: 91, 2005b). The front vowel in Mongolic is problematic. The semantic fit is satisfactory.

Korean

pK **-k-* > K, MK *-k-* (Ramstedt 1939: 138, Ramsey 1986, 1991, p.c.¹⁵)

‘1. enter a new state or aim at a concept similar to the base noun, 2. make use of the base noun’

‘acquire the property denoted by the adjective’

‘start the action or process denoted by the base verb, enter the state resulting from the verb base’

denominal

1. K *mwul*, MK *mul* ‘water’ > K *mwulk-*, MK *mulk-*, *mwulk-* ‘be watery, be thin’, K *pwul*, MK *pul* ‘fire’ > K *pwulk-*, MK *pulk-* ‘be red, be crimson’, MK *mwus* ‘sheaf, bundle’ > K *mwukk-*, MK *mwusk-* ‘tie up into a bundle’, MK *kul* ‘writing’ > MK *kulk-* ‘scratch’, MK *pich* ‘light, brilliance, color’ > MK *piΔG-/ piΔu-* ‘embellish, decorate’ (< pK **pisuk-* according to Martin 1996: 29), 2. K *ol*, MK *ol* ‘strand, ply, warp’ > K *olk-* ‘tie up, bind, weave’, MK *naks* ‘fishhook’ > MK *naksk-* ‘fish’, MK *kus* ‘line, limit’ > MK *kuΔG-/kuΔu-* ‘draw a line, delimit’ (< pK **kusuk-* according to Martin 1996: 29)

¹⁵ I would like to express my gratitude to Professor Ramsey for sharing an unpublished list of Middle Korean verbs that he put together a number of years ago. The verbs on the list are sorted according to Ramsey’s form classes. When applicable, the derivational base is given along with the verb. Although the data have been very helpful, I bear full responsibility for their analysis.

deadjectival and deverbal?

Traces of deadjectival and deverbal use of the inchoative are fragmentary and rather obscure. The suffix **-k-* may derive adjectives in e.g. pK **kis-* ‘be happy’ (+ pK **-p(u/o)-* derives depictive adjectives from adjective stems) in MK *kispu-* ‘be happy’ > MK *kisk-* ‘rejoice’, pK **polo-* ‘be clear’ (+ pK **-(k)i-* causative) in K *poli-* ‘clear away, make clear’ > MK *polk-* ‘be(come) bright’,¹⁶ pK **cye-* ‘be small’ (+ pK **-m-* inclination) in MK *cyem-* ‘be young’ > MK *cyek-* ‘be small, few’, (pK **kul?*) > MK *kulk-* ‘be thick, big’. The latter two adjectives belong to accent class 5. They are monosyllabic and have a rising tone. A rising tone usually results from the contraction of two syllables. The majority of the members of accent class 5 are derived verbs. Apart from the accent class to which MK *kulk-* ‘be thick, big’ belongs, I do not find internal evidence for the reconstruction of pK **kul-* ‘abundant, thick, big’. However, there is a possible external parallel for the word in pMo **kur ~ kür* ‘abundant, thick, fat’ reflected in WMo. *kür, kür-tei* ‘abundant’, *qur-tai* ‘having accumulated fat’, *qur-la-* ‘accumulate fat, grow thick’ (Lessing 1960: 503, 507, 991). In Turkic we find a root pK **kür* that has the meaning ‘abundant, thick, dense’ in contemporary languages such as in Tk. *gür*, Az. *gür*, Tkm. *gür*, Gag. *gür*, Karaim *kür*. Tuva has *xür* ‘healthy, well fed’. However, in Karakhanide *kür* is only attested as ‘stout-hearted, courageous’ (Clauson 1972: 735). Chuv. *kə^wrə^w* ‘abundant, courageous’, Bash. *kör* ‘well fed, courageous’ and Tat. *kör* ‘well fed, courageous’ preserve both meanings. Although it is attested earlier, the meaning ‘courageous’ appears to be a metaphorical extension of ‘abundant’ in Turkic. Whether this word is to be considered a borrowing or a cognate does not influence the argument put forward here.

Finally the evidence for the inchoative suffix in the deverbal derivation is even fainter. Perhaps we find a trace of the suffix in verb pairs such as MK *kyes-* ‘experience’ > K *kyekk-* ‘experience’ (< **kyesk-*), MK *puΔu-* ‘break’ > MK *psku-* (< **pusuk-*) ‘shell, peel (tr.); hatch (intr.)’, MK *tum-* ‘submerge’ > MK *tumk-* ‘immerse’, but in the latter case we could be dealing with a reduced causative suffix *-ki-*.

The resultative aspect in Middle Korean is marked with the suffix MK *-ke/-ka* (Martin 1992: 263, 466, 595, 601; 1995). It can derive adjectives and verbs.¹⁷ The resultative MK *-ka-* is logically exclusive with the processive MK *-no-* discussed in section 4.3. Martin (1992: 261) positions the suffix to the right of the actional suffixes, but it precedes markers of politeness, mood and aspect. Apart from the seman-

¹⁶ pK **polo-* ‘be clear’ would be a phonologically regular fit for four subsequent phonemes to pJ **para-* ‘be clear’ reflected in *harau* ‘purify, exorcize, clear’, *hareru* ‘clear up, vanish, be refreshed’.

¹⁷ An example of the suffix following an adjective is Mod. K *nep-ke-na nep-un thyenha* (1747 Songkang 1:4a) (wide-result-adversative wide-modifier land beneath heaven) ‘as wide as can be, wide land beneath heaven’. An example of the suffix following a verb is MK *ans-ke-na sye-ke-na* (1447 Sek 19:5b) (sit-result-adversative stand-result-adversative) ‘whether (ultimately) sitting or (ultimately) standing’.

tic difference between inchoative and resultative, there is a second obstacle for comparing the Korean suffix in this context. Internal evidence suggests that the resultative suffix has grammaticalized from the verb MK *'ka-* 'go'. The failure of the resultative suffix MK *-ka-* to occur after the verb stem MK *'ka-* 'go' suggests an unwanted iteration and a verbal origin for the resultative suffix. Although there are a few forms with MK *'woke-*, most of the resultative forms of MK *'wo-* 'come' become MK *'wona-* (cfr. section 4.3). The auxiliary MK *'na-* 'emerge' probably substitutes the auxiliary MK *'ka-* 'go' which would be incompatible with MK *'wo-* 'come'. Besides, many of the monosyllabic high-accent stems that end in a vowel lose the accent in the common paradigmatic forms, but they retain the accent before MK *-ke-* / *-ka* (Martin 1992: 70). The peculiar accentual behavior could indicate that the resultative originally was a bound stem. These observations project the resultative suffix MK *-ka-* / *-ke-* back to the lexical level. Although the Korean suffix is not likely to be cognate with the Altaic inchoative, as an original motional verb it could be related to an Altaic root pA **ka-* 'go'.¹⁸

Tungusic

pTg **-gA-* inchoative : Evk. *-gA-*, Ud. *-gA-*

'begin to move the base noun, change the position of the base noun, bring the base noun into existence'

'begin (of) the action denoted by the base verb'

denominal

Evk. *-gA-* (Konstantinova 1964: 200, Nedjalkov 1997: 301)

iti 'business' > *iti-ga-* 'set things going, organize, plan to do', *kolto* 'fist' > *kolto-go-* 'hit with the fist', *asakī* 'wing' > *asa-ga-* 'flap the wings', *sajar* 'hole, gap' > *sajar-ga-* 'pierce, make a hole, desert, break off (relations)', *usi* 'bridle, curb' > *usi-ge-* 'unharness a reindeer'

deverbal

Evk. *-gA-* (Konstantinova 1964: 161, Nedjalkov 1997: 231) inchoative transitive. It derives transitives from intransitive verb stems with an inchoative nuance.

tati- 'be used to (intr.)' > *tati-ga-* 'get (sb) used to, accustom (sb) to, train, learn (tr.)', *iti-* 'come into being (intr.)' > *iti-ga-* 'set things going, organize, plan to do

¹⁸ The Korean resultative and the verb K *ka-*, MK *'ka-* 'go' reflect pK **ka-* 'go'. The Japanese verbs OJ *ik-* 'go', OJ *kayo,p-* 'ply between, commute, frequent, go regularly', OJ *kare₂-* 'get apart, cease, go away' and OJ *kaye-* 'be parted, get apart' reflect an original motional root pJ **ka-* 'go (away)'. A possible Mongolic cognate is WMo. *γar-*, Khal. *gar-*, Kalm. *γar-*, Dong. *qeri-*, Bao. *xār-*, Dag. *gar-*, Yogh. *Gar-*, Mgr. *Gari-*, Mogh. *γaru-*, pMo **gar-* 'go out'.

(tr.)', *kamñi-* 'defend oneself (intr.)' > *kamñi-ga-* 'attack, tackle (tr.)', *kapu-* 'burst, explode, break, crack (intr.)' > *kapu-ga-* 'break, tear in two (tr.)', Ev. *ada-* 'fly past (intr.)' > *ada-ga-* 'try to escape (tr.)', *bele-* 'help (intr.)' > *bele-ge-* 'help (tr.)'

Ud. *-gA-* (Nikolaeva 1999: 178) inchoative decausative. It derives the decausative counterpart of the transitive verbs with the inchoative suffix *-li-*. It expresses the beginning of a state caused by a transitive base verb.

guza-li- 'tear' > *guza-ga-* 'get torn', *bukta-li-* 'break in two' > *bukta-ga-* 'get broken in two', *xudu-li-* 'dislocate' > *xudu-ge-* 'get dislocated'

Nanai has a denominal inchoative *-go-* ~ *-gu-* that is particularly used for the beginning of a cyclic natural phenomenon (Menges 1968: 202-203; Avrorin 1961: 20-21, 56), e.g. Na. *joa* 'summer' > *joa-go-* 'come (of summer)', Na. *dolbo* 'night' > *dolbo-go-* 'come (of night)', Na. *ñeññe* 'spring' > *ñeññe-gu-* 'come (of spring)', *sikse* 'evening' > *sikse-gu-* 'come (of evening)', *tue* 'winter' > *tue-gu-* 'come (of winter)'. The same suffix occurs following ordinal adjectives such as Na. *juyecie* 'second' > *juyecie-gu-* 'do for the second time', Na. *iliacia* 'third' > *iliaci-gu-* 'do for the third time', Na. *duyecie* 'fourth' > *duyecie-gu-* 'do for the fourth time'. Following verbs it has a repetitive or regressive meaning e.g. Na. *bu-* 'give' > *bu-gu-* 'give back', Na. *uŋ-* 'say, talk' > *uŋ-gu-* 'say again, repeat', Na. *ili-* 'stand up' > *ili-go-* 'stand up again, stand up after sitting'. In Udehe the suffix has a reflex *-gi-*. It is used as a denominal inchoative following nouns, e.g. Ud. *bolo* 'fall' > *bolo-gi-* 'come (of fall)', Ud. *neki* 'spring' > *neki-gi-* 'come (of spring)', Ud. *dogbo* 'night' > *dogbo-gi-* 'come (of night)', Ud. *tue* 'winter' > *tue-gi-* 'come (of winter)'. It also derives repetitives or regressives from verbs, e.g. Ud. *deu-* 'get tired' > *deu-gi-* 'get tired again', Ud. *nodo-* 'lose' > *nodo-gi-* 'lose again', Ud. *jawa-* 'take' > *jawa-gi-* 'take back', Ud. *tama-* 'pay' > Ud. *tama-gi-* 'pay debts', Ud. *pou-pou* 'dark' > *pou-te-gi-* 'get dark', Ud. *bagdi-* 'live' > *bagdi-gi-* 'be born'. Since the common denominator appears to be 'repetitive' rather than 'inchoative', I am reluctant to include this suffix in the comparison.

Mongolic

pMo *-*gi-* > WMo. *-gi-* ~ *-ki-* (sporadic fortition after consonants) / *-i-* (lenition after vowels)

'enter or bring into a new state similar to the base noun'

'acquire the property denoted by the adjective'

'1. start the action or process denoted by the base verb, 2. enter the state resulting from the verb base'

denominal

usun ‘water’ > *usubki-* ‘be watery, liquid, tasteless’, *mösün* ‘strand of rope’ > *musgi-* ~ *muski-* ‘to twist, strand (rope)’, *culcu-i-* ‘become inflated, blown up’ (compare Evk. *cilcun*, Ma. *cilcin*, Na. *cilcu-kte*, Olč. *culcu-kte* ‘swelling, gland’, whether borrowing or cognate to the Mongolic base noun), *gede* ‘nape or back of the neck, occiput’ > *gede-i-* ‘throw back one’s head, bend backwards’.

deadjectival

ca-gan ‘white, light (of color)’, *ca-kir* ‘very white, snow white, white spots on finger nails or on the feathers of a bird’ > *ca-i-* ‘become white, turn pale, turn grey, to dawn, grow light’, *ula* ‘red (adj.)’ > *ula-i-* ‘become red, redden, blush’, *dere-gir* ‘stiff and sticking out’ > *dere-i-* ‘become stiff’, *soqur* ‘blind (adj.)’, *soqu-la-* ‘make blind (tr.)’ > *soqu-i-* ‘be(come) blind (used as an invective)’, *taki-r* ‘crippled, crooked, a cripple’ > *taki-i-* ‘become crippled, bent, oblique (intr.)’

deverbal

1. *ala-* ‘kill, murder, butcher (tr.)’ > *al-ki-* ‘hit, beat (tr.)’, *kel-* ‘to be strung (as pearls), to follow in succession (intr.)’ > *kel-ki-* ‘to string (pearls), to thread, to bring together (tr.)’, *sedü-* ‘think out, work out, invent (tr.)’ > *sedki-* ‘think, reflect, intend (intr. / tr.)’, *alab-ca-* ‘kick or strike with the foot’ > *alab-ki-* ‘jump onto a horse’, *jilu-* ‘flee, run away, avoid (intr.)’ > *jili-i-* ‘flee, take flight (intr.)’, 2. *er-ci-* ‘twist, spin (thread or rope) (tr.)’, *er-cim* ‘torsion, twist, steadfastness’ > *er-gi-* ‘turn or move around, revolve, circumambulate (intr./ tr.)’, *tala-* ‘take away, confiscate, plunder, ruin (tr.)’ > *tali-i-* ‘disappear, get lost, go astray, die (intr.)’ (L 773), *jimu-* ‘sink, go down (intr.)’ > *jimi-i-* ‘become tightened (of lips, eyes) (intr.)’.

Turkic

pTk *-k- > OTk. -(X)k- inchoative (Gabain 1950: 82, Erdal 1991: 492-499, 524, 645-649)

‘enter or bring into a new state similar to the base noun, begin (of a cyclic natural phenomenon)’

‘acquire the property denoted by the adjective’

‘1. start the action or process of the intransitive verb base, 2. come into the state resulting from the transitive verb base’

denominal

ada ‘danger’ > *ada-k-* ‘to be or come into distress’, *ant* ‘oath’ > *ant-ik-* ‘swear an oath’, *bir* ‘one’ > *bir-ik-* ‘get together, join (tr. / intr.), become united’, *šī* ~ *čī* ‘moist’ > *čī-k-* ‘to get moist’, *ät* ‘flesh, meat’ > *ät-ik-* ‘put on flesh’, *tag* ‘mountain’ > *tag-ik-* ‘to go to the mountains’, *uya* ‘animal’s resting place, bird’s nest’ > *uya-k-* ‘set (of

sun, stars), *yer* ‘place, land’ > *yer-ik-* ‘settle’, *yay* ‘spring’ > *yay-ik-* ‘become spring’, *küz* ‘autumn’ > *küz-ük-* ‘turn to autumn, become autumnal’

deadjectival (quality verbs)

**ali-* ‘be bad’ in *aliğ* ‘bad’ > *ali-k-* ‘turn septic, fester, deteriorate’ (EDT 138), **amri-* ‘be peaceful’ in *amrıl-* ‘be at peace, be at ease’ > *amri-k-* ‘acquire peace, become peaceful’, *us-* ‘be thirsty’ > *us-uk-* ‘be thirsty, be overcome with thirst’, *ač-* ‘be hungry’ > *ač-uk-* ‘be famished, be overcome with hunger’

deverbal

1. *čom-* ‘sink (intr.)’ > *čom-uk-* ‘drown (intr.)’, *tal-* ‘lose strength, faint, be sunk (in thought, sleep) (intr.)’ > *tal-ik-* ‘go under (intr.)’, *oη-* ‘turn pale, fade, wilt (intr.)’ > *oη-uk-* ‘become pale, become lean because of illness, wilt’, *öč-* ‘go out, be extinguished (of fire) (intr.)’ > *öč-ük-* ‘fail (of voice), be interrupted (of breathing), die (of embers) (intr.)’, 2. *sor-* ‘ask, inquire about (tr.)’ > *sor-uk-* ‘be inquired about (intr.)’, *tar-* ‘disperse, scatter, do away with (tr.)’ > *tar-ik-* ‘disperse, be driven away, go away (intr.)’

5. Conclusion

The question whether Japanese is related to the Altaic languages has been treated in the literature for nearly two centuries. Lexical comparison yields positive evidence, but comparative morphology remains relatively unexplored. The present paper examines verbal morphology. The focus is on derivational and actional suffixes relating Japanese to Altaic.

The choice of the topic is motivated by Johanson’s (2002) observation that the positions close to the primary stem are particularly diagnostic for genetic continuity. This is an important point of departure that is overlooked in Vovin’s (2001) study of verbal morphology. His article is mainly oriented on the markers in the outer ranks for aspect, mood, tense, final predication. Many of Vovin’s etymologies are in contradiction with the internal analysis of the compared form. They often disregard processes of grammaticalization within Japanese (Robbeets 2005a: 157-173). Discouraged by the weakness of the evidence, Vovin today (2005) rejects the Altaic hypothesis.

The scope of this study is broad in the sense that the comparisons stretch over five branches: Japanese, Korean, Tungusic, Mongolic and Turkic. This approach differs from morphological studies that do not include Japanese such as Ramstedt 1912, 1952, Poppe 1972, Baskakov 1981, Kormušin 1984, or that exclude Turkic and Mongolic such as Vovin (2001), or that compare Japanese and Korean from a binary perspective such as Whitman (1985) and Martin (1968, 1990, 1991a, 1995). Particularly when dealing with morphology, a global approach is more promising because

traces of conservative items are expected in geographically and linguistically remote areas such as Japanese and Turkic.

A premise that underlies this study is that in all the Altaic languages verbs, adjectives and nouns are distinct parts of speech. This assumption goes against the viewpoint taken in Miller (1982) and Menges (1975, 1978). It has consequences for the reconstruction and comparison of the suffixes under investigation. The theoretical base for the distinction is taken from studies such as Dixon (1982) and Johanson (2006).

The argumentation in this article is data-oriented. Recent years have seen a sudden improvement of our access to the data. The present work relies on the comprehensive reconstruction of the proto-Japanese verbal system advanced in Unger 1977 and Martin 1987 and on an analysis of Korean verbs by Ramsey (1986, 1991) and Martin (1992). It further benefits from recent progress in the description of individual Tungusic languages made by Malchukov (1995), Nedjalkov (1997), Nikolaeva (1999) and Gorelova (2002) and from up-to-date contributions to the analysis of Middle and Old Turkic made by Berta (1996) and Erdal (1991, 2004). As far as the evaluation of the phonological correspondences is concerned, I build on the findings in my previous work (Robbeets 2005a).

The conclusions can be summarized in the following table. I use the abbreviations N for denominal, O for onomatopoeic, A for deadjectival and V for deverbal.

pJ	pK	pTg	pMo	pTk	pA
*-ra- effort N-O-A		*-lĀ- effort N-A	*-lA- effort N-O-A	*-lA- effort N-O-A	*-la- effort N-O-A
*-ya- transformation N-A		*-dĀ- transform. N-A	*-d(A)- transform. N-A	*-(A)d- transform. N-A	*-da- transform. N-A
*-na- process N-A-V	*-no- process A-V	*-nA- natural process N-A-V	*-n(A/i)- spontaneity A-V	*-n- spontaneity A-V	*-na- process A-V
*-ka- iconic O	*-ki- iconic O	*-ki- iconic O	*-ki- iconic O	-kI- iconic O	*-ki- iconic O
*-ma- inclination N-O-A-V	*-m(u/o)- inclination N-A(-V?)	*-m(a/u/o)- intention N-A (-V?)	*-mA- intention/ability A-V	intention	*-ma- N-A-V
*-ka- inchoative N-A-V	*-k- inchoative N-A (-V?)	*-gA- inchoative N-V	*-gi- inchoative N-A-V	*-k- inchoative N-A-V	*-ga- inchoative N-A-V

The actional suffix chain reconstructed for Japanese in section 3.1. can be etymologized for every single suffix. The etymologies stretch over at least four branches. The cognates are global in the sense that the correspondences are material, semantic, derivational and combinational. The consonants correspond without exception in accordance with the system established on the basis of the lexical material in Robbeets 2005a. The vowel correspondences are satisfactory because they show few irregularities. The lack of the final vowel in most of the Turkic reflexes is probably connected with the gradual loss of final reduced vowels in Old Turkic (Johanson 1979). The semantic latitude is very limited. The parts of speech to which the derivational bases belong are parallel in a way that a reconstruction of the derivational behavior in Altaic is possible. The order of the suffixes in the table is the relative suffix order as it occurs in the Japanese chain. It roughly overlaps with the distributional characteristics of the suffixes in the other languages.

The regularity and the systematics of the shared properties summarized in the table, taken together with the fact that they confirm the phonological correspondences established in earlier work, exclude coincidence as a possible motivation of the similarities. The etymologies discussed in this article are not the result of sheer chance. Neither can they be explained by universal tendencies in linguistic structuring. The remaining possibilities are either borrowing or common ancestorship. In my opinion it is more difficult to attribute the similarities to borrowing than to attribute them to common ancestorship. The correspondences are global, regular and symmetrical. The etymologies are spread over five branches, which makes it hard to explain copies all the way from Turkic into Japanese. The evidence consists of bound, verbal morphemes in a position close to the primary stem. With all due caution, I cannot but attribute the etymologies presented here to the common ancestorship of the languages under comparison. The actional suffix chain most probably connects Japanese to Altaic in a genealogical sense.

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Abbreviations

Az.	Azerbaijani	MTk.	Middle Turkic
Bao.	Bao'an	Na.	Nanai (Goldi, Ch. Hezhe)
Bash.	Bashkir	Neg.	Negidal
Chuv.	Chuvash	OJ	Old Japanese
Dag.	Dagur	Olč.	Olcha (Ulcha, Ulchi, Olchi)
Dong.	Dongxiang (Santa)	OTk.	Old Turkic
Evk.	Evenki (Tungus, Ch. Elunchun)	pA	proto-Altaic
J	(standard Tokyo) Japanese	pJ	proto-Japanese
Jur.	Jurchen	pK	proto-Korean
K	(standard Seoul) Korean	pMo	proto-Mongolic
Kalm.	Kalmuk	pTg	proto-Tungusic
Khal.	Khalkha	pTk	proto-Turkic
Ma.	Manchu	SH	Secret History of the Mongols
MJ	Middle Japanese	Tat.	(Volga) Tatar
MK	Middle Korean	Tk.	Turkish
MMo.	Middle Mongolian	Tkm.	Turkmen
Mgr.	Monguor	Ud.	Udehe (Ude, Udege)
Mo.	Mongolian	WMo.	written Mongolian
Mogh.	Moghol		

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