

The causative-passive in the Trans-Eurasian languages

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The affiliation question of the Trans-Eurasian languages is among the most controversial issues of historical linguistics. A major difficulty is the distinction between genetic retention and code-copying. The present article studies two causative-passive markers relating Japanese to Korean, Tungusic, Mongolic and Turkic. The decision to concentrate on diathetical suffixes is motivated by the cross-linguistic observation that the positions closest to the verbal stem are resistant to code-copying. As a consequence of their relative conservatism, the causative-passive suffixes compared in this study are no longer productive: they have petrified into verb stems. In spite of the ongoing lexicalization, the suffixes can be reconstructed for the individual languages on the basis of diagrammatic iconicity. In the comparative part of this study, a common causative-passive suffix pTE **-ti-* and an ancillary auxiliary pTE **ki-* ‘make, do’ that grammaticalized into a marker of causativity, are reconstructed. The shared properties are assessed in terms of form, function, combinational behavior and systemic organization. The article concludes that it is more logical to attribute the causative-passive etymologies to genetic retention than to motivate them by code-copying.

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1. Introduction

Trans-Eurasian is used in reference to a vast zone of geographically adjacent languages stretching from the Pacific in the East to the Black Sea in the West. At most the label covers five linguistic families: Japanese, Korean, Tungusic, Mongolic and Turkic. At least it constitutes a single linguistic family by itself. The very question of genealogical relationship of the Trans-Eurasian languages is among the most disputed issues of linguistic history. The controversy does not involve any paucity of linguistic similarities; it rather lies in how to account for them. Whatever stance they take on the scale of support of common ancestorship, historical linguists agree on at least one point: there are a considerable number of shared properties between the languages of Trans-Eurasia.

Among the many structural features that these languages have in common is the frequent use of multiple causative formations and the polysemy for causative and passive united in a single suffix (Kulikov 1993, Malchukov 1993, Solntseva & Solntsev 2001). Such shared structural properties, however, are not very telling in

matters of genealogical relationship. They can be the result of inheritance, but they are not necessarily so. Other possible motivations for structural parallelism are diffusion, universal principles in linguistic structuring, implicational tendencies or sheer coincidence.

If we intend to advance the correlation between the causative-passive in Japanese and the other Trans-Eurasian languages in support of genetic continuity, the shared properties must go beyond structural features. Cognates are convincing only when they represent global form-function matches. Genealogical evidence must reflect systematic phonological correspondences among morphemes with similar semantics; it is expected to exhibit congruent combinational patterns and to tend towards paradigmatic cohesion.

The present article is a comparative study of two causative-passive markers relating Japanese to the other languages of the Trans-Eurasian linguistic continuum. On the basis of internal analysis the relevant suffixes and auxiliaries are reconstructed for the individual proto-languages. In the comparative part of this study the shared properties are assessed in terms of form, function, combinational behavior and systemic organization. This study proposes the reconstruction of a common causative-passive suffix pTE **-ti-* and of a shared ancillary auxiliary pTE **ki-* that developed into a marker of causativity.

2. Methodological framework

2.1. Theoretical prerequisites

This study treats the causative-passive as a member of the inflectional category of diathesis. The diathesis or valency of a verb is the correspondence between its semantic and its syntactic actants. Diathetical suffixes modify the meaning of the preceding segment and alter the diathesis of the base verb. They change the syntactic environment of the verb in placing certain requirements on the surrounding constituents. Causative suffixes transform the initial subject of the corresponding active construction into the object, the referent who is made to act, of the causative construction. Passive suffixes produce a diathesis converse with respect to the active construction. There is a mutual permutation of the syntactic actants: the subject is demoted to undergo the action, the object is promoted to execute the action.

An active construction such as 'X loves Y' (X V-es Y) has a passive counterpart 'Y is loved by X' (Y is V-ed by X) and can be changed into the causative construction 'Y makes/ lets X love [someone]' (Y did/did not do sth. and X does V because of that). Syntactically, the causative and passive demote the initial subject X in a different way. The functions are almost opposite: in the causative an agent is added, while in the passive an agent is removed. But, the difference between the causative and the passive also lies in their semantic modification. The passive only changes the communicative organization of the message and leaves the situational content intact. The causative modifies the situational meaning. Whereas the passive denotes a single

situation, the causative denotes two situations in a causal relation. The semantics of causation add stimulus and transition from one state into another. The addition of situational meaning has led to the exclusion of causatives from the category of diathesis (Mel'čuk 1993: 11). However, the correlation between causative and passive in individual markers is cross-linguistically attested. And, passive and causative share a common logical base, namely the modification of basic diathesis. Therefore, it is legitimate to treat them as members of the same inflectional category for the present purpose.

The decision to concentrate on diathetical suffixes is motivated by the empirical observation that bound diathetical suffixes are relatively stable in language and therefore diagnostic of genetic retention. Cross-linguistically it is observed that languages tend to copy nouns more easily than verbs, free lexemes are more copiable than bound morphemes, and derivational morphology is less stable than inflectional morphology. The description of copiability as a relative tendency leads to the assumption that bound, inflectional, verbal morphology provides rather reliable evidence to demonstrate common ancestorship. Johanson (1992, 1999, 2002) has further refined our notion about copiability -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." Comrie (1995: 394; foreword to Johanson 2002: xi) confirms Johanson's findings: "... 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."

The relative stability of diathetical suffixes is dependent on three parameters: first, the difficulty to perceive the suffix as a distinct unit, second, the difficulty to pronounce it separately and third, the resistance of the item to phonological erosion. A suffix is difficult to perceive as a distinct unit when it displays a high degree of semantic abstraction or when it is firmly bound to the preceding segment. Morphemes with variant allomorphy or with a monophonemic structure are difficult to pronounce because the phonetic shape of the morpheme can change in various environments or because it is not easy to produce a single sound in isolation. The resistance to phonological erosion is interrelated with a number of factors such as the low number of applicable units, which increases their frequency of use, the proximity of the suffix vis-a-vis the primary stem and its firm incorporation in larger paradigms.

As a consequence of their relative conservatism, the causative-passive suffixes compared in this study are no longer productive: they lexicalized into verb stems. In the morphological systems of human languages, we find many cases of asymmetric relationships between a basic word and a formally derived counterpart (Bybee 1985a:

50-58, 1985b; Haspelmath 1993: 87). The German verbs *führen*, *fällen*, *senken*, *setzen*, *stellen*, *tränken* and *wecken*, for instance, are derived from neutral bases *fahren*, *fallen*, *senken*, *sitzen*, *stehen*, *trinken*, *wachen*. The additional formal element *-j-*, which leaves a trace in the umlaut of the derived verb stem, is expected to be semantically mirrored. Indeed, the formal umlaut relationship correlates with a functional one, namely causativity. Although the causative suffix is no longer productive in German, it can be reconstructed for proto-Germanic on the basis of diagrammatic iconicity. The same principle underlies in the internal reconstruction of the causative-passive suffixes in the languages below. Where one verb is formally basic and the other is derived from it, semantic correlations are sought. The correlation usually is more transparent than in the case of the fusional Indo-European languages. The languages of Trans-Eurasia are synthetic languages of the agglutinative type. Syntactic relations in the sentence are marked by morphological means. There is a one on one relationship between the morpheme and its function, and the morphemes are connected linearly. The linear connection and the absence of phonological fusion with the preceding segment, such as umlaut in Germanic, make it easier to reconstruct suffixes that are no longer productive. The polysemy of causative and passive for a single suffix, however, makes it clear that the one on one relationship between the expression and the content should not be confused with monofunctionality (Johanson 2002: 21).

What can be considered a match, when comparing diathetical suffixes between the languages that constitute Trans-Eurasian? The shared properties are expected to correspond in form, function, combinational patterns and paradigmatic behavior. Formally, 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). However, when the functional freedom permitted 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, diathetical suffixes should only be compared to suffixes belonging to the same inflectional category. Comparisons with suffixes that belong to other inflectional categories, such as for instance actional suffixes, can only be permitted to the extent that they can be motivated by reference to similar changes across the languages of the world. Third, there is a combinational criterion. The part of speech to which the neutral base belongs is expected to be equivalent, and the same expectation exists for the target of derivation. The relative position that a certain diathetical suffix occupies in the suffix chain in terms of its distance to the primary stem or in terms of its distance to other diathetical suffixes can also be taken into account. 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 code-copying are retained together. Hence, the strength of the evidence also lies in its tendency towards paradigmatic systemacy.

2.2. Conventions

For Japanese, Korean, Mongolic and Turkic I use material from the eldest 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. The majority of Old Japanese writing represents the language spoken in the Nara-period (710-794) in central Japan. It is the language of the literary monuments of Japanese: the poetry of the *Man'yo:shu*, the cultural and geographical records of the *Fudoki*, the dynastic chronicles of the *Nihonshoki*. Some of these texts offer evidence for an Eastern Old Japanese language, sometimes referred to as the *Azuma* dialect. Eastern Old Japanese forms will be indicated as such. For the historical study of Tungusic languages it is unfortunate that written records are rather scarce 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, and Udehe.

In the following discussion the references between brackets refer to a secondary source or grammar that makes reference to the suffix under inspection. The reconstruction of suffixes is supported by verb pairs consisting of a verb of neutral diathesis, 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 naked base. The asterisk * is used for reconstructed forms.

For the transliteration of linguistic forms, the present paper uses the Yale system for Japanese and Korean. In Old Japanese the use of Chinese characters for phonetic value was such as to indicate two values for later *e*, *i*, *o* in certain syllables. These vowel distinctions are referred to as *il* versus *i2*, *e1* versus *e2* and *o1* versus *o2*. The

phonological interpretation underlying the distinction probably is preglided for subscript 1 and postglided or neutral for subscript 2, i.e. *yi* vs. *iy*, *ye* vs. *ey* and *wo* vs. *o* respectively.

The Middle Korean unrounded vowels [ə] and [i] are represented by *o* and *u* respectively, while *wo* and *wu* are used for rounded [o] and [u]. The notation *ẓ* is used to represent the now obsolete Middle Korean triangle grapheme Δ.¹ The capitals *W* and *G* are used for two other obsolete consonants for which the phonological interpretation is probably [β] and [ɣ] respectively. 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, ñ, i* for Nedjalkov's notations *ch, d', j, n', y* respectively), Benzing (1955b) for Even (with the modifications *j, y, ñ, i* for Benzing's notations *ɟ, j, ŋ, ə* 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 *ñ* 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 *č, ĵ*. For Middle Mongolian Rybatzki (2003) is followed with the exception of *š, ɣ* for Rybatzki's notations *sh* and *gh*.

The transcription of the Turkic forms follows Johanson & Csató (1998) except for the probably reduced vowel type ^o for which the notation *X* is used. It represents an Old Turkic vowel type that is not written explicitly in runiform texts. The viewpoint that the vowels serving as realizations of *X* were reduced (Johanson 1998: 107-108; 2001: 1725) is controversial (Erdal 2004: 59). I do not reconstruct vowel length for the Old Turkic forms. Several modern languages such as Yakut, Turkmen, Khaladj reflect original vowel-length in proto-Turkic, but the evidence for Old Turkic is uncertain. For all languages a colon placed after a vowel is used to indicate length.

3. Comparative evidence for pTE *-ti- causative-passive

3.1. Previous proposals

Ramstedt (1912: 21-23), in an early study of shared verbal morphology between the Turkic and Mongolic languages, first mentions the parallel between the causative

¹ Robbeets 2005a: 61-62 explains why it is unlikely that the MK Δ grapheme represents a mere voiced /z/ and argues that an extra feature such as palatalization to /ẓ/ is probably involved.

suffixes in Mongolic and Turkic. In his Korean grammar (1939: 136) he adds a Korean and Tungusic cognate: “But it is clear that the N.Kor. suffix **-thi-*, used in the forming of causatives, is an old suffix by itself, and corresponds to Turk. *-t-*, Mong. *-čī-*, Tung. *-ti-*, *čī-*, the ending for transferred or transitive action.” The Tungusic cognate, however, is not clarified. Unambiguous evidence underlying the Tungusic suffix is also missing from Ramstedt’s (1952: 175-176) treatment of the same suffix in his morphological study of the Altaic languages. Ramstedt’s comparisons do not include Japanese data. Besides, some of his proposals are outdated in the light of more recent contributions to the morphological description and reconstruction of the individual languages and language families. Although Poppe (1972) and Baskakov (1981) contribute to the comparison of verbal morphology between the Tungusic, Mongolic and Turkic languages, neither study mentions the suffix under inspection.

Miller (1981: 855) peripherally refers to a dental suffix in Altaic: “pA **-t-* was used in both denominal and deverbal formations, deriving transitive verbs, indicating that an action relating to the original noun or verb was performed in a sudden, jolting or otherwise particularly conclusive fashion.” However, it remains unclear whether he is referring to the causative marker mentioned by Ramstedt. He (1981: 857) describes four of the Japanese verbs analysed below (OJ *panat-* ‘separate, alienate (tr.)’, OJ *sakat-* ‘butcher, kill (tr.)’, OJ *wakat-* ‘break apart, rip open, split, share (tr.)’ and OJ *pagat-* ‘destroy, tear out, peel off (tr.)’) as inherited secondary derivatives in pA **-t-*. There is no attempt to define the meaning of the Japanese suffix. Non-Japanese evidence underlying Miller’s pA **-t-* is missing.

What can the present study contribute? Contrary to Ramstedt (1912, 1952), Poppe (1972) and Baskakov (1981), it starts from the largest reasonable concept of Trans-Eurasian languages. It supports a genealogical hypothesis including Trans-Eurasian languages such as Japanese and Korean that stand in a low-copying relationship to the other groups. In this way the probability that we are dealing with accidental similarities or with copies in disguise is significantly reduced. An attempt is made to define the Japanese and Tungusic cognates more accurately in form and function than in the previous contributions made by Ramstedt (1952) and Miller (1981). The Korean, Mongolic and Turkic internal evidence is viewed in the light of recent studies that appeared after Ramstedt (1952). A closer semantic inspection suggests that in four out of five branches the causative meaning extends to include the passive. The polysemy for causative and passive will be discussed in reference to recent theoretical contributions to the topic. From the methodological viewpoint the present study attempts to provide a more systematic base for the comparison of form and function, including a pre-defined set of formal correspondences as established in Robbeets (2005a).

3.2. Japanese: pJ *-*ta-* causative-passive

OJ *-t-* < pJ *-*t(a)-* causative-passive

Formally, the lexicalized verb suffix OJ *-t-* < pJ *-*t(a)-* is reconstructed by Unger (1977: 140), Miller (1981: 857) and Martin (1987: 665-800). Whereas Miller and Martin leave the semantics open, Unger describes pJ **-ta-* as a causative, adding the meaning ‘cause (obj.) to attain the state of (the preceding root)’. The verb pairs below suggest that the causative suffix extended its meaning to passive. Verb pairs that are marked as degrammaticalized represent cases in which the original functional relation between the base and the derived counterpart is disturbed in the process of lexicalization. Although the causativity correlation is disturbed, the formal element OJ *-t-* still adds a semantic nuance of intensity. In some cases where a neutral base is missing, there are attestations of the base in verb stems derived with a different suffix. The suffixes involved in the derivations below are the passive **-ya-*, the equipollent medial/causatives **-ra-/ -sa-* and the causative-passive **(C)i-*.

Causative

OJ *ke₂-* ‘get extinguished (intr.)’ => OJ *ke₂t-* ‘make vanish (tr.)’

(Eastern) OJ *panar-* ‘get distant, be expelled (intr.)’, OJ *pane-* ‘exclude (tr.)’ => OJ *panat-* ‘separate, alienate (tr.)’

pJ **ta-* ‘reach an end’ in OJ *itar-* ‘arrive, reach, attain (intr.)’, OJ *itas-* ‘do, cause, bring about’, *-(i)te-* perfective auxiliary, OJ *taye-* ‘come to an end (intr.)’, OJ *tayas-* ‘end, put an end to, let come to an end (tr.)’ => OJ *tat-* ‘cut off, exterminate (tr.)’

OJ *uke₂-* ‘(hole) open up, be bored (intr.)’ => OJ *ukat-* ‘dig, bore (tr.)’

Degrammaticalized causative

OJ *pag-* ‘peel, strip (tr.)’ => OJ *pagat-* ‘destroy, tear out, peel off (tr.)’

OJ *sak-* ‘rip, split (tr.)’ => OJ *sakat-* ‘butcher, kill (tr.)’

OJ *wak-* ‘divide (tr.)’ => OJ *wakat-* ‘break apart, rip open, split, share (tr.)’, OJ *akat-* ‘disperse, divide, separate, wean (tr.)’

Passive

pJ **ayama-* ‘mistake (tr.)’ in OJ *ayamar-* ‘err, make a mistake, apologize (intr.)’ => OJ *ayamat-* ‘err, make a mistake (intr.)’

pJ **kunta-* ‘lower’ in OJ *kudas-* ‘take down, put down, lower, defeat (tr.)’ ~ OJ *kudar-* ‘go down, descend (intr.)’ => OJ *kutat-* ‘come down, end, deteriorate (intr.)’

pJ **wo-* ‘exist’ in OJ *wor-* ‘be, exist (intr.)’ ~ OJ *wos-* ‘deign to control, deign to rule, deign to eat/drink, deign to wear (tr.)’ => OJ *wot-* ‘come back to life (intr.)’

pJ **ina-* ‘go away’ in OJ *in-* ‘go away (intr.)’ => pJ **ina-ta-* in OJ *id-* ‘emerge (intr.)’ and pJ **ina-ta-sa-* in OJ *idas-* ‘put out (tr.)’ (Martin 1995: 147)

Degrammaticalized passive

J *sober-* ‘sprawl, spread, (dial.) fall down (intr.)’, J *sobo-hur-*, OJ *sopo-pur-* ‘drizzle, rain (intr.)’ => OJ *so₂pot-* ‘get drenched (intr.)’

3.3. Korean: pK *-ti- causative-passive

K -chi- 1. causative-passive [~ K -ki- causative-passive], 2. intensive (Martin 1992: 450, 623) < MK -chi- < pK *ti-ki double causative

K -chwu- 1. causative [~ K -kwu- causative], 2. intensive (Martin 1992: 452, 669) < MK - . *chwu-* < pK *ti-kwu double causative

K -t- < MK -t- petrified causative-passive in small number of alternations < pK *-ti- causative-passive

Kulikov (1993: 127-136) studies the semantics of double causative constructions. Next to double causation as in Tk. *öl-dür-t-* (die-caus.-caus.) ‘to have somebody killed’, the most frequent meaning is an intensive to the first causative. The fact that the suffixes K -chi- and K -chu- are used to derive both causatives and intensives raises the possibility of double causation. Interestingly the suffixes alternate with K -ki- and -kwu-, suffixes that derive causatives but not intensives. Both K -chi- and K -ki- extend their causative function to the passive, while both K -chu- and K -kwu- are limited to causative alone. Formally and functionally this leads to the reconstruction of an original causative pK *-ti- that in combination with a second causative *-ki- or *-kwu palatalized to K -chi- or K -chu- respectively. The palatalization is supported by Ramstedt’s (1939: 133) observation that North Korean dialects preserve -thi- for the suffix. Some standard Korean verbs like *kelchi-* ‘put a thing over another (tr.)’, extend, spread (intr.)’, a passive and intensive derivation from *kel-* ‘put on (tr.)’, preserve the unpalatalized form of the suffix in compounds like *kelthe anc-* ‘sit astraddle’ or *kelthe tha-* ‘ride astride’. From internal and external comparison it can be understood that velar lenition (*k > *h) and the loss of *-i- leading to the contraction of two syllables into one cluster initial syllable took place at an early stage in Korean.² Additional support for the reconstruction of an original causative pK *-ti- comes from a small number of alternating verb pairs that may preserve traces of the petrified suffix. They are referred to as causative-passive relics below.

² Early velar lenition is supported by Chinese donorwords corresponding to Korean loanwords (e.g. Ch. *cak* ‘foot (measure)’ is borrowed as MK *cah*), phonogram readings in the Kyelim Yusa (e.g. *hwalq-huy* for MK *holk* ‘earth’), elements in Paekche placenames (e.g. *tin-qak* for MK *twolh* ‘stone’), dialectal forms (e.g. dial. *tolk* for MK *twolh* ‘stone’), and internal doublets (MK *siphu-* versus MK *sikpu-* ‘want’). Early *-i- loss may account for the comparison of MK *.ptu-* ‘float’ with OJ *pitar-* ‘get soaked’, OJ *pitās-* ‘soak (tr.)’ and MK *.stah* ‘ground’ with OJ *sita* ‘below, bottom’, whether we are dealing with cognates or copies.

*Causative*K *-chi-*K *kulu-*, MK *kulu-* ~ *kulh-* ‘be wrong (intr.)’ => K *kuluchi-*, MK *kulu . ch(u)-* ‘ruin (tr.)’K *sos-*, MK *swos-* ‘tower up, spring up, rise (intr.)’ => K *soschi-* ‘raise, lift up (tr.)’K *cop-* ‘be narrow, be limited (intr.)’ => K *(c)copchi-* ‘make too narrow, close (tr.)’K *-ki-*, MK *- ki-*

For examples see section 4.3.

K *-chwu-*, MK *- . chwu-*K *kulu-*, MK *kulu-* ~ *kulh-* ‘be wrong (intr.)’ => K *kuluchi-*, MK *kulu . ch(u)-* ‘ruin (tr.)’K *kot-* ‘be straight (intr.)’ => K *kotchwu-* ‘straighten (out) (tr.)’K *yath-* ‘be shallow, low, light (intr.)’ => K *yathchwu-* ‘make shallow etc. (tr.)’K *-kwu-*, MK *- . kwu-*K *tot-*, MK *twot-* ‘rise (intr.)’ => K *totkwu-* ‘raise (tr.)’K *sos-*, MK *swos-* ‘tower up, spring up, rise (intr.)’ => K *soskwu-* ‘make rise (tr.)’MK *. sul-* ‘vanish (intr.)’ => MK *sul . Gwu-* ‘cause to vanish (tr.)’MK *ˆmey-* ‘shoulder (tr.)’ => MK *ˆmey . Gwu-* ‘cause to shoulder (tr.)’*Passive*K *-chi-*, MK *-chi-*ka:*m-* ‘wind, roll, coil (tr.)’ => ka:*mchi-* ‘hem, put a hem in, sew up (tr.); linger in one’s mind (intr.)’K *kunh-*, MK *kunh-* ‘cut, break, stop, give up (tr.)’ => K *kuchi-*, MK *kunchi-* ‘stop, discontinue, put an end to (tr.); stop, end, come to an end (intr.)’K *coch-*, MK *cwos-* ‘follow, go after, pursue (tr.)’ => K *ccochki-*, MK *cwoschi-* ‘be pursued, be driven away (intr.)’

The observation that K *-chi-* can derive both causatives and passives goes against Ramstedt’s (1957: 176) remark that: “Diese Annahme würde auch gut erklären, warum die Endung *-t-* (kor. *-thi-*) immer nur transitiv-kausativ ist, während die oben besprochenen *-bu-*, *-gu-*, *-gi-*, *-l-* eigentlich nur reversiv, d.h. bald kausativ, bald passiv, sind.”

K *-ki-*

For examples see section 4.3.

*Intensive*K *-chi-*K *ci:na-* ‘pass (by), go past/by (tr. / intr.)’ => *ci:nachi-* ‘exceed, go beyond, overdo (tr. / intr.)’

K *nem-* ‘exceed, pass beyond (intr.)’ => *ne:m-chi-* ‘overflow, flood, brim over (intr.)’
 K *soskwu-* ‘make rise (tr.)’ => *soskwu-chi-* ‘raise quickly, make a quick rise (tr.)’
 K *noh-* ‘put (aside), let go, release (tr.)’ => *noh-chi-* ‘let go, let escape, fail to catch (tr.)’
 K *ppet-* ‘spread, stretch (tr. / intr.)’ => *ppet-chi-* ‘open out (intr.); give a good stretch to (tr.)’

K *-chwu-*

K *tul-* ‘raise, hold (tr.)’ => *tulchwu-* ‘reveal, expose (tr.)’

I am unable to find more examples of the intensive use of the suffix *-chwu-* in Korean. The suffixes *-ki-* and *-kwu-* cannot derive intensive verbs. This fact is consistent with the suggestion that the intensive interpretation developed within the context of double causative constructions.

The verb pairs above reflect the use of K *-chi-* as an intensive suffix. The majority of the examples of the intensive derivation with K *-chi-* given in Martin (1992: 450), however, reflect a semantic modification different from intensive. In Martin’s intensive pairs K *sos-* ‘rise, tower up, spurt out (intr.)’ = *sos-chi-* ‘rise, tower up, spurt out (intr.)’, *eph-* ‘turn upside down, overthrow (tr.)’ = *eph-chi-* ‘turn upside down, overthrow (tr.)’, *path-* ‘filter, strain, drain (tr.)’ = *path-chi-* ‘filter, strain, drain (tr.)’, there is no difference in meaning between the base and the derivate, but this could be due to degrammaticalization. In some pairs such as *pat-* ‘(of food) agree with a person, suit one’s palate, set well (intr.)’ => *pat-chi-* ‘(of food) sit heavy on stomach, does not agree with one, keep coming up, not digest properly (intr.)’, the intensive gets an adversative connotation in the sense of ‘being affected negatively by the intensity’. Other examples given by Martin seem to reflect a causative use such as K *hey-* ‘scatter, wander, come loose (intr.)’ => *hey-chi-* ‘dig up, scatter, plow (tr.)’ or a passive use with intensive nuance such as *ke:l-* ‘hang, put on, apply (tr.)’ => *ke:l-chi-* ‘hang, put on (tr.); extend, spread (intr.)’, *ttel-* ‘display, show (tr. postnominal verb)’ => *ttel-chi-* ‘be widely felt, be wielded (of power, influence) (intr.); wield (power, influence) (tr.)’ or a reflexive use such as *ki-* ‘crawl, creep (intr.)’ => *kki-chi-* ‘shudder, shiver, creep over one, feel one’s flesh creep’ (intr.)’. Finally there are examples among Martin’s intensives that are easier to interpret as double causative and passive derivations: *ppay-* ‘remove, take out (tr.)’ => *ppay-chi-* ‘let get away’ [‘make it be removed’], *phul-* ‘untie, unfasten (tr.)’ => *phul-chi-* ‘release, free, put at ease (tr.)’ [‘make it be unfastened’], *mwulli-* ‘clear away, take away (tr.)’ => *mulli-chi-* ‘reject, drive back (tr.)’ [‘make it be cleared away’], *kka:ywu-* ‘awaken (tr.)’ => *kka:ywuchi-* ‘call one’s attention (tr.)’ [‘make one be awakened’].

The examples make it clear that there is a semantic correlation between the causative-passive and the intensive meaning. This observation is in contradiction with Martin’s (1992: 224) contention that: “The voice-deriving bound postverbs should not be confused with the intensive bound postverb *-chi-*, which is morphemi-

cally related to the auxiliary verb *chi-* that is used after the infinitive as an intensifier.” The auxiliary verb to which Martin refers is K *chi-* ‘do, do hard’ (e.g. *mek-* ‘eat’ => *mek-e chi-* ‘devour’) derived from the independent verb K *chi-*, MK *thi-* ‘make, do, create, construct, reproduce, perform’.³ Beside the semantic correlation, there is a morpho-syntactic counterargument since the auxiliary combines with the infinitive form (*-e/-a-*) of the verb, while the intensive suffix is added immediately after the stem.

Causative-passive relics

pK **mo-* ‘bring together’ in MK *mwoy-* ‘accompany, escort (someone respected)(tr.)’ (incorporates *-i-* causative), *mwosi-* ‘accompany (tr.)’, *mwoy . ho-* ‘gather, bring together (tr.)’ => MK *mwot-* ‘come together (intr.)’

MK *na-* ‘grow, come out, become (intr.)’ (causative in MK *nay-* ‘take out, produce’) => MK *nat-* ‘appear (intr.)’

MK *ti-* ‘become, form (aux.)’ => MK *tit-* ‘light (a fire)’

The three monosyllabic and low verbs on stem final *-t* above all belong to class 1 and seem to have causative-passive counterparts without dental stop.⁴

pK **a-* ‘exist’ + **-ti-* causative => MK *et-* ‘get, receive’

The existential root in Korean can be reconstructed on the basis of the infinitive ending K *-e /a*, MK *-e/ .a*, which is also used sentence final, in compound verbs and in connections with auxiliary verbs (Martin 1992: 231, 251, 415, 465). Many of the monosyllabic high-accent stems that end in a vowel lose the accent in the common paradigmatic forms, while they retain the accent before the infinitive *-e/ .a*. This seems to indicate that the infinitive, like the other markers, was originally a bound stem (Martin 1992: 70). Some dialects use only the infinitive ending *-a* regardless of the preceding vowel. In early texts we can find examples of MK *-a* where MK *-e* is expected. Such forms point to pK **-a* as the basic shape of the infinitive. The verb MK *et-* ‘get, receive’ belongs to class 5. Class 5 represents a small class of monosyllabic rising verbs. The rising tone seems to result from the contraction of two syllables. For most of the verbs in class 5 the second syllable can be traced back to a separate suffix. The front vowel of MK *et-* ‘get, receive’ may be the result of the contraction of the existential stem with a causative suffix **-ti-* with front vowel. This

³ The open, monosyllabic, tonic verb with initial aspirate MK *thi-* ‘make, do, create’ can, according to Ramsey’s law (Ramsey 1986: 192-193), be derived from a disyllabic verb **ti(-)ki-*. A good candidate for causative **-ki-* derivation that comes to mind is MK *ti-* ‘become, form (intr.)’.

⁴ 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. Although the data have been very helpful, I bear full responsibility for their analysis.

derivation is reminiscent of how the Japanese verb *e-* ‘get, obtain’ could result from the diphthongization of pJ **a-* ‘exist’ and causative-passive **-i-* (<**-(k)i-*>).⁵

3.4. Tungusic: pTg **-ti-* causative-passive

pTg **-t- ~ -ti-*: Ma. *-tA- ~ -cA-*, Evk. *-t- ~ -ci-*, Even *-c-/ -t- ~ -ci-*, Neg. *-c-/ -t- ~ -ci-*, Ud. *-si-*, Na. *-ci- ~ -si-* 1. causative, 2. passive from transitive verbs, 3. passive from intransitive verbs, 4. resultative, 5. progressive, 6. iterative/ distributive, 7. intensive

Since Benzing (1955a: 1067) finds uses of the suffix that go beyond the intensive, he adds a question mark in his description “intensiver Aspekt?”. Closer inspection of the application of the suffix **-ti-* suggests that we are dealing with an original causative-passive. Gradually it lost its influence on valency and developed into an actional suffix, characterizing the development of an action in the course of time. As a causative-passive the suffix **-ti-* is preserved in Even where it can derive causatives and passives from both transitive and intransitive verbs. In Manchu we find traces of an obsolete causative *-cu-* that may be related. In Evenki, Even and Nanai the suffix **-ti-* derives passives from intransitive verbs, often expressing the state resulting from motion. This function stands in close connection with the resultative function of **-ti-* that is observed in the majority of the languages under inspection, namely in Manchu, Evenki, Even, Udehe and Nanai. The resultative suffix delimits the time frame of the base verb in order to express the resulting state or action, but no longer alters the valency of the base. Delimitation of the time frame is also expressed by the progressive use of **-ti-* in Manchu, Evenki, and Udehe. The progressive characterizes the base verb as being in progress. The continuous development of the event in the course of time is transferred to the high frequency of occurrence and to the high degree of intensity of the event. The high frequency of occurrence is expressed by the iterative and the distributive use of **-ti-* in Manchu, Evenki, Udehe and Nanai. The high intensity of the event is expressed by the intensive use in Manchu, Evenki, Even and Nanai.

3.4.1. Manchu *-tA-*

The following examples are taken from Gorelova (2002: 243) and arranged according to the function of the suffix.

Resultative

jafa- ‘take in the hand, grasp, grip (tr.)’ => *jafata-* ‘grasp or grip repeatedly; keep in rein, restrain (tr.)’

⁵ Robbeets 2005a: 127-128 argues for the internal reconstruction of an existential root pJ **a-* ‘exist’, probably related to the Korean root.

Progressive

tuksi- ‘pound, throb (of the heart) (intr.)’ => *tuksite-* ‘throb (of the heart) continually, be greatly anxious’

niyece- ‘mend, fill in (a post), supplement, nourish’ => *niyecete-* ‘mend continually, fill in regularly’

debsi- ‘fan, flap, flutter’ => *debsite-* ‘fan or flutter continually’

Iterative

ana- ‘push’ => *anata-* ‘push repeatedly’

fehu- ‘step on’ => *fehute-* ‘trample repeatedly’

Intensive

uša- ‘pull’ => *ušata-* ‘pull with force’

The suffix Manchu *-tA-* is probably related with a palatalized variant Ma. *-cA-* (Gorelova 2002: 243) that is used to derive progressives such as Ma. *hira-* ‘look askance at, spy on’ => *hira-ca-* ‘keep looking askance, spy on intently’ and intensives such as Ma. *feku-* ‘jump, leap’ => *feku-ce-* ‘leap up, hop over’ or Ma. *jolho-* ‘gush up, well up’ => *jolhoco-* ‘stampede, rush off in a fury, press forward in rage’.

Lebedeva & Gorelova (1994: 41) and Gorelova (2002: 151) reconstruct an obsolete Manchu causative suffix **-cu-* which precedes the participle in *-ka/-ke* in the composite suffix *-cuka/ -cuke* in e.g. Ma *gele-* ‘fear’ => *gele-cu-ke* ‘dangerous, frightful’, *jobo-* ‘worry, be distressed’ => *jobo-cu-ka* ‘causing concern, worrisome, distressing’, *ulhi-* ‘understand, comprehend’ => *ulhi-cu-ke* ‘understandable’. Although the vocalism of the suffix is problematic, it could be related and preserve the original causative function of pTg **-ti-*.

3.4.2. Evenki *-t-* ~ *-ci-*

Konstantinova (1964: 164-165) labels the suffix as progressive aspect, Nedjalkov (1997: 303) describes it as an aspectual suffix that refers to the process or result of an action. In the majority of the derivations the suffix appears as *-t-*. Before certain suffixes such as the ingressive *-l-* and the habitual *-ɲnA-* it surfaces as *-ci-*. The verb Evk. *luptu-* ‘pull out (tr.)’, for instance, is derived as *luptut-* ‘pull out, pluck (tr.)’, but a front vowel appears before the ingressive suffix in *luptu-ci-l-* ‘start to pluck’. The following verb pairs are arranged according to the function of the suffix.

Passive from intransitive

tege- ‘sit down’ => *teget-* ‘sit, be sitting’

il- ‘stand up’ => *ilit-* ‘stand, be standing’

Resultative

ice- ‘see, catch a glimpse of (tr.)’ => *icet-* ‘look, gaze at, examine (tr.)’

do:ldi- ‘hear (tr.)’ => *do:ldit-* ‘listen (for a while) (tr.)’
loko- ‘hang up (tr.)’ => *lokot-* ‘weigh out; spread, stretch out, hang (tr.)’

Progressive (-distributive)

bu:- ‘give (tr.)’ => *bu:t-* ‘distribute, give out, hand out (tr.)’
luptu- ‘pull out (tr., e.g. a tooth)’ => *luptut-* ‘pull out, pluck (tr., e.g. a fowl)’

In the above examples there is an interface between the progressive interpretation ‘keep giving’, ‘keep pulling out’ and the distributive interpretation ‘give multiple objects’, ‘pull out multiple objects’.

Intensive

uŋku- ‘fill with, pour out (tr.)’ => *uŋkut-* ‘spill, pour out (tr.)’
wa:- ‘kill (tr.)’ => *wa:t-* ‘massacre, slay (tr.)’

Konstantinova (1964: 164) notices that the imperfect marker Evk. *-ja-* assimilates to *-ca-* following the progressive *-t-* (e.g. *ilit-ca-* ‘be standing-imp.’). The same assimilation process between pTg **-t(i)-* and the imperfect pTg **-ja-* may have been at work earlier in proto-Tungusic, yielding the resultative-intensive suffix pTg **-ca-* (Benzing 1955a: 1067). This suffix is reflected in Ma. *-cA-* above, and it is also present in Evenki. According to Konstantinova (1964: 166-167) the suffix characterizes conditions with a nuance of continuity. Nedjalkov (1997: 303) describes it as a resultative-stative suffix. It derives passives from transitives in e.g. Evk. *loko-* ‘hang (tr.)’ => *loku-ca-* ‘hang (for a while), be suspended (intr.)’, *aŋa:-* ‘open (tr.)’ => *aŋa:ce-* ‘stay open (intr.)’, *xaku-* ‘close (tr.)’ => *xakuca-* ‘stay closed (intr.)’ and resultatives in e.g. Evk. *java-* ‘take (tr.)’ => *javuca-* ‘hold, keep (tr.)’
 Evk. *do:ldi-* ‘hear (tr.)’ => *do:lca-* ‘listen (tr.), remain attentive for a while (intr.)’.

3.4.3. Even *-t-* ~ *-ci-*

In Even we find a suffix that appears as *-t-* after vowels and as *-ci-* after consonants. Whereas Benzing (1955b: 44) describes it as a suffix for “unvollendete intensive Handlung”, Menges (1968: 116) labels it as “aspectus status, des eingetretenen Zustandes”. Both observations are correct, but the following verb pairs suggest that the suffix primarily has a causative-passive function from which the other functions can be logically derived.

The vowel allomorph *-t-* alternates with *-c-*. At first sight the alternation seems to be random, but it probably has a historical explanation related to the resultative-intensive pTg **-ca-* discussed above. This suffix can be argued to result from an assimilation process between the causative-passive pTg **-ti-* and the imperfect pTg **-ja-*. The Even reflex of the imperfect is *-j-*. The absence of a final vowel has led to the merger of the reflexes of **ti-ja-* and **ti-* as *-ci-* after consonants in Even. However, after vowels the distinction is still present: pTg **-ti-ja-* yields Even *-c-*, whereas

pTg *-*ti-* yields Even -*t-*. In the following verb pairs derivations with -*t-* are given along those with -*c-* because both relate to the same original suffix.

Causative

hoŋ- ‘cry (intr.)’ => *hoŋit-* ‘make cry (tr.)’
oli- ‘boil (tr.)’ => *oli:t-* ‘bring to boil (tr.)’
gili- ‘crave, be longing (intr.)’ => *gili:t-* ‘search (tr.)’
huk- ‘be hot (intr.)’ => *hukci-* ‘warm, heat up (tr.)’
kol- ‘drink, smoke (tr.)’ => *kolu:c-* ‘let drink (tr.)’
туру:- ‘open up (intr.)’ => *туру:c-* ‘open up (intr.), open (tr., e.g. mouth, trap)’
elu- ‘stand up (intr.)’ => *elu:c-* ‘put (tr.)’⁶

Benefactive

hupku- ‘teach (tr.)’ => *hupkuc-* ‘learn (tr.)’ [teach to oneself]
ilki- ‘measure (tr.)’ => Even *ilki:c-* ‘fit on, try on (tr.)’ [measure for oneself]
jon- ‘think (out) (tr.)’ => *joŋci-* ‘recall, remember (tr.)’ [think by oneself]

A number of derivations do not alter the causativity of the base, but rather express that the action is carried out for one’s own benefit. The grammatical subject acts in his own interests. The benefactive interpretation of the suffix can help to clarify the common ground between the causative and the passive.

Passive from transitive

a:ŋa:- ‘open (tr.)’ => *a:ŋa:c-* ‘open oneself, be open (intr.)’
kad- ‘press together (tr.)’ => *kadac-* ‘be pressed together (intr.)’
kem- ‘prepare (tr.)’ => *kemu:c-* ‘be prepared’

Passive from intransitive

el- ‘stand up’ => *elat-* ~ *elac-* ‘stand, be standing’
tig- ‘sit down’ => *tigüt-* ~ *tigüc-* ‘sit, be sitting’
hor- ‘to fall into a trap (intr.), catch, capture (tr.)’ => *horci-* ‘be caught, be captured’

Resultative

ya:- ‘make, create (tr.)’ => *ya:t-* ‘possess (tr.)’
ko:yī:- ‘see, have a look at, catch a glimpse of (tr.)’ => *ko:yī:c-* ‘oversee, observe, examine (tr.)’
dolda- ‘hear (tr.)’ => *dolci-* ‘listen to, overhear (tr.)’
he:wi- ‘enkindle (tr.)’ => *he:wic-* ‘light up (tr.)’

⁶ The causative derivation Even *elu:c-* ‘put (tr.)’ seems to be derivable from the same root **elV-* ‘stand up’ as the passive variant Even *elat-* ~ *elac-* ‘stand, be standing’. This observation supports the original causative and passive polysemy.

Intensive

yaru- ‘observe (tr.)’ => *yarut-* ‘see over, get granular on (tr.)’

manru- ‘take some trouble (intr.)’ => *manruc-* ‘exert oneself, make every effort’

tan- ‘pull (tr.)’ => *tanci-* ‘drag, haul (tr.)’

kori:n- ‘crease, wrinkle (intr.)’ => *kori:ŋci-* ‘get covered with creases or wrinkles (intr.)’

ño:n- ‘run’ => *ñoŋci-* ‘sprint, gallop’

3.4.4. Udehe -si-

According to the sound correspondences in Benzing (1955a: 983), Ud. -s- reflects a regular correspondence to the palato-alveolar affricate -c- in most of the other Tungusic languages.⁷

The following verb pairs are taken from Nikolaeva (1999: 184-85).

Resultative

jawa- ‘take (tr.)’ => *jawasi-* ‘hold (tr.)’

ise- ‘see (tr.)’ => *isesi-* ‘look (tr.)’

Progressive

soŋo- ‘cry’ => *soŋosi-* ‘be crying’

olokto- ‘cook’ => *oloktosi-* ‘be cooking’

ŋelewen- ‘frighten’ => *ŋelewensi-* ‘be frightening’

Iterative

digan- ‘say’ => *digasi-* ‘talk’

nagda- ‘guess, hit’ => *nagdasi-* ‘hit several times’

xuine- ‘dive’ => *xuinesi-* ‘dive several times’

Distributive

camna- ‘break (intr.)’ => *camnasi-* ‘break (of several things) (intr.)’

tiŋme- ‘fall (intr.)’ => *tiŋmesi-* ‘fall (of several people) (intr.)’

bukta- ‘break (tr.)’ => *buktasi-* ‘break (several objects) (tr.)’

buge- ‘bury (tr.)’ => *bugesi-* ‘bury (several people) (tr.)’

3.4.5. Nanai -ci- ~ -si-

According to the sound correspondences in Benzing (1955a: 983), the regular correspondence expected for the Nanai suffix is -ci-. However, we also find the suffix -si- with similar functions in Nanai. The internal c~s alternation in verb pairs such as Na. *anaci-* ~ *anosi-* ‘push (continually)’ and the external alternation with Udehe verbs

⁷ The correspondence established by Benzing is: Ma. -č-:: Na. -c-:: Olč. -č-:: Orok -č-:: Oroč. -č-:: Ud. -s-:: Sol. -s-:: Neg. -č-:: Evk. -c-:: Even -c-

such as Na. *soŋoci-* ~ Ud. *soŋosi-* ‘cry continually’ suggests that we are dealing with a sporadic phonological development. Nanai *-ci-* and *-si-* probably represent two different stages of palatalization of the same suffix pTg **-ti-*. The following examples are taken from Avrorin (1961: 45-46) and Menges (1968: 199-200)

Na. *-si-* passive from intransitive

te- ‘sit down (intr.)’ => *te:si-* ‘sit, be sitting (intr.)’

ili- ‘stand up (intr.)’ => *ilisi-* ‘stand, be standing (intr.)’

tagda- ‘get angry (intr.)’ => *tagdasi-* ‘bear malice (intr.)’

Na. *-ci-* resultative

apola- ‘put on a hat (intr.)’ => *apolaci-* ‘wear a hat’

Na. *-si-* ~ *-ci-* progressive

ana- ‘push’ => *anaci-* ~ *anosi-* ‘push (continually)’

aŋo- ‘make, create’ => *aŋosi-* ‘make (continually)’

xisaŋo- ‘speak’ => *xisaŋosi-* ‘speak (continually)’

soŋo- ‘cry’ => *soŋoci-* ‘cry continually’

ana- ‘push’ => *anaci-* ~ *anosi-* ‘push (continually)’

pu- ‘blow’ => *puci-* ‘blow (continually)’

Na. *-ci-* iterative

garpa- ‘shoot, beam, rise (of sun)’ => *garpaci-* ‘shoot many times, shine constantly’

3.5. Mongolic: pMo **-ti-* causative

WMo. *-ci-* (equipollent) causative < pMo **-ti-*

Poppe (1954: 66) describes WMo *-ci-* as an intensive suffix that derives transitive verbs from adverbs and functions to “express actions performed energetically or with strength”. Contrary to this description it can be observed that WMo *-ci-* is not an intensive suffix, but rather an equipollent causative suffix that polarizes the causativity of the base. In equipollent medial-causative verb pairs, both the medial and the causative are derived from a neutral base by means of different markers. From the verb pairs below it can be understood that WMo *-ci-* derivatives occur as the causative counterpart of verbs derived with the medial suffix WMo. *-ra-*. This alternation has been noticed as early as by Ramstedt (1912: 5): “Neben dem sekundären [S]tamm auf -l- mit intensiv oder iterativ transitiver [B]edeutung finden sich ein ‘plötzliches, heftiges machen’ bezeichnender [S]tamm auf *-ci-* (< **-ti-*) und ein ‘das werden’ bezeichnender [S]tamm auf *-ra-*.” However, I think that the label ‘plötzliches, heftiges machen’ is incorrect. The semantics of the verb pairs below also go against Ramstedt’s (1952: 176) observation: “..., dass im Mongolischen die Verba auf *-ci-* grösstenteils solche sind, die die Bedeutung ‘schlagen’ einschliessen können.”

For the typology of medial-causative verb alternations I refer to Haspelmath (1993). He (1993: 91) distinguishes equipollent non-directed alternations from causative (e.g. French *fondre* ‘melt (intr.)’ => *faire fondre* ‘melt (tr.)’) and anticausative (e.g. Russian *katat* ‘roll (tr.)’ => *katat’-sja* ‘roll (intr.)’) alternations. Haspelmath uses the term ‘inchoative’ in reference to a verb meaning that excludes a causing agent and presents the situation as occurring spontaneously. For the present purpose his label ‘inchoative’ is replaced by ‘medial’ in order to avoid confusion between actional and diathetical suffixes.⁸ The equipollent alternation between WMo. *-ra-* and *-ci-* is reminiscent of the medial-causative alternation between *-ra-* and *-sa-* in Japanese (e.g. OJ *ok-* ‘put’ => *okor-* ‘rise (intr.)’ ~ *okos-* ‘raise (tr.)’).⁹

Whereas *-ci-* surfaces as the causative counterpart of medial *-ra-*, the causative suffix *-l-* (Poppe 1957: 61) has a wider application. Semantically both *-l-* and *-ci-* derive causatives, but there is a combinational difference. Since *-l-* puts fewer restrictions on the semantics of the preceding verb, it is more widely applicable than *-ci-*, beyond medial-causative pairs. An action like ‘drink’ (e.g. *uγu-* ‘drink’ => *uγul-* ‘give to drink’) that does not express a change of state cannot be the base verb in medial-causative alternations (Haspelmath 1993: 93). All *-ci-* bases besides lack agent-oriented meaning components. In some petrified cases *-l-* seems to extend its use to causative-passive, e.g. *aril-* ‘become clean or purified, clear up (of weather) (intr.)’, *ari-γ* ‘pure, clear’, *ari-γun* ‘cleanliness, purity’ => *arci-* ‘wipe, clean, weed (tr.)’. It probably is the polarity between the causative and the medial that blocked out the passive interpretation for *-ci-*.

The intensive connotation of *-ci-*, observed by Ramstedt and Poppe, is based on the natural force that is involved in verbs expressing a spontaneous development. However, some verbs such as *arci-* ‘wipe, clean, weed (tr.)’; *ijaci-* ‘thicken, condense, coagulate, curdle (tr.)’; *jadaci-* ‘untie, unroll, undo (tr.)’ derived with *-ci-* lack intensive meaning. More importantly, the naked verb base and the medial counterpart on *-ra-* reflect exactly the same (commonly intensive) meaning without the suffixation of the so-called intensive *-ci-* (e.g. *ebde-* ‘destroy, break, ruin (tr.)’, *ebdere-* ‘break down, fall to pieces, be wrecked (intr.)’ => *ebdeci-* ‘break, destroy, ruin (tr.)’).

⁸ Actional suffixes such as inchoative, intensive, etc. modify the meaning of the verb base whereas diathetical suffixes such as passive, medial, reflexive, causative, etc. can also alter the valency of the base.

⁹ The medial-causative alternation in Japanese is a structural parallel. It cannot be used as genealogical evidence *per se*. However, the Japanese medial *-ra-* and the Mongolic medial *-ra-* are globally and thus genealogically relatable. Other cognates can be found in the Korean petrified marker of middle voice K *-ul-* (e.g. K *mwuk-* ‘be soft, be loose (intr.)’ => K *nwukul-e* ‘calm down, loosen up, get milder, become soft (by itself)’), Tungusic middle voice *-rā-* (e.g. Evk. *n!umu-* ‘weaken, grow weak (of arms and legs) (intr.)’ => *n!umu-rā-* ‘be bloated, be ailing (of arms and legs) (intr.)’) and a relic of middle voice in Old Turkic *-(l)r-* (e.g. pTk **ürpe-* ‘be shaggy’ in OTk. *ürpek* ‘shaggy, disheveled’ => OTk. *ürper-* ‘bristle, stand on an end (of hair)’). Diathesis provides a fertile ground for the genealogical comparison of the Trans-Eurasian languages. I intend to further explore it in the future.

Poppe (1954: 66) characterizes WMo *-ci-* as a deadverbial suffix because some of the *-ci-* derivations such as WMo. *suγuci-* ‘pull out’ and WMo. *tasuci-* ‘tear to pieces’ correlate to a naked adverbial base, WMo. *suγu* ‘off’ and WMo. *tasu* ‘asunder’ respectively. However derivations with deverbal suffixes such as *suγul-* ‘pull out’ and *tasul-* ‘tear to pieces’ with the iterative or factitive *-l-* or *suγura-* ‘fall out’ and *tasura-* ‘be pulled off’ with the medial *-ra-* indicate that we are dealing with original verb roots. The adverbs are derived from the naked verb roots. Besides, some of the bases like WMo. *ebde-* ‘destroy, break, ruin (tr.)’ are attested as naked verbs and other *-ci-* derivatives lack a corresponding adverbial form.¹⁰

Just like in Korean and Tungusic, the palatalization of a dental stop before a high front vowel is a common development in Mongolic. Other indications that the suffix *-ci-* can be derived from an original **-ti-* come from early copies of Mongolic verbs into Tungusic or into Turkic. The verb WMo. *öbci-* ‘flay, skin (tr.)’, for instance, is analysable as a *-ci-* derivative from a root **(p)öb-* ‘separate’ due to the attestation of WMo. *öble-* ‘divide into parts (tr.)’. The morphological complex form **(p)öb-ci-* ‘flay, skin (tr.)’ was copied in Tungusic as pTg **pupte-* ‘disembowel, operate’. The verb is reflected in Evk. *hupte-* ~ *hupti-*, Neg. *hupte-*, Oroč. *hukte-*, Ud. *hukte-*, Olč. *pukte-*, Orok *pukte-*, Na. *pukte-* ‘rip open, disembowel, operate’. The indication that we are dealing with an early copy comes from the preservation of the Mongolic **p-*. Interestingly pMo **-t-* is preserved as well. The word was imitated with relatively back vowels (*u* and *e*) which blocked the palatalization process and preserved the Mongolic dental stop. We know that the verbs are not cognates because the Mongolic form is morphologically complex and the Tungusic verbs are not. Besides the meaning ‘operate’ represents a culturally more specific meaning.

Equipollent causative

balbal- ‘break into pieces, shatter, smash (tr.)’, *balbara-* ‘break or smash to pieces (intr.)’ => *balbaci-* ‘break or smash to pieces (tr.)’

ebde- ‘destroy, break, ruin (tr.)’, *ebdere-* ‘break down, fall to pieces, be wrecked (intr.)’ => *ebdeci-* ‘break, destroy, ruin (tr.)’

jadal- ‘unwrap, unroll, undo (tr.)’, *jadara-* ‘unfold, unwrap, loosen (intr.)’ => *jadaci-* ‘untie, unroll, undo (tr.)’

ijara- ‘thicken, condense, coagulate, curdle, burst, break open (intr.)’ => *ijaci-* ‘thicken, condense, coagulate, curdle, burst, break open (tr.)’

nuγul- ‘fold, bend, curve (tr.)’, *nuγura-* ‘be folded, bend, stoop (intr.)’ => *nuγuci-* ‘fold, crumple, separate bones at joints (tr.)’

suγul- ‘pull out, pluck out (tr.)’, *suγura-* ‘come off, slip out (intr.)’ => *suγuci-* ‘pull out, pluck out (tr.)’

¹⁰ This observation confirms the position taken in Ramstedt (1912: 7) “Von einigen Wörtern wird die anzunehmende Grundform adverbial verwendet, Aber mehrere von den Verben dieser Klasse kennen keine solche adverbiale Form, sondern da wird der Primärstamm als Verbum verwendet, ...”

tasul- ‘break apart, tear asunder, discontinue (tr.)’, *tasura-* ‘be torn away from, be interrupted(intr.)’ => *tasuci-* ‘break apart, tear apart (tr.)’

3.6. Turkic

OTk *-(X)t-* causative-passive < pTk **-ti-*

The causative-passive in the Turkic languages is a well-studied topic. Kowalski (1949), Röhrborn (1972), Nigmatov (1973), Johanson (1974, 1975), Kormušin (1976) and Erdal (1991: 760-799) have contributed to the clarification of the phenomenon. The examples below are taken from Erdal. In the large majority of the verb pairs OTk. *-Xt-* derives a causative, whereas the passive derivation is rather limited. However, some contemporary Turkic languages have verbs on final *-t-* that preserve relics of the passive derivation. Johanson contends that “Es ist möglich, daß *-t-* auslautende Intransitiva des Typus *gtü. qayt-* ‘sich umwenden, zurückkehren’, *soy. olit-* ‘sitzen’, *čuv. vyrt-* ‘liegen’ Lexikalisierungen der jeweiligen zweiten Lesart darstellen”. This remark is interesting from a comparative perspective with the Tungusic languages. Above it is observed that the Tungusic suffix is common in the derivation of passives from intransitive verbs such as ‘sit down’ or ‘stand up’, expressing the state resulting from motion, i.e. ‘be sitting’ or ‘be standing’.

On the basis of internal reconstruction it is legitimate to reconstruct a front vowel in the original causative-passive suffix pTk **-ti-*. Erdal (1979a: 152-155) shows that the converb and aorist of *-(X)t-* changed from *I* to *U* in the course of the use of Old Turkic. Older texts reflect *-I(r)* aorists, such as for instance the Old Turkish aorist *tetir* ‘it is said, it is called by a particular name’ that appears as a frozen form also in later texts much more frequently than *tetür*. The viewpoint that deleted stem or suffix final vowels, such as the original front vowel of the causative-passive suffix, are recoverable in converbs and aorists is supported by Ramstedt (1952: 86), Johanson (1975: 111-112), Erdal (1979b).¹¹ Following Johanson (1975: 112-115) the loss of the front vowel in **-ti-* led to an asyllabic realization of the suffix. When the original short stem final vowels were reduced and finally lost, the stem final vowel was retained by the causative-passive suffix in order to avoid problematic consonant clusters (pTk **CVC-Ī-ti* > OTk. *CVC-Xt-*). Processes of vowel loss and assimilation reduced the phonological distinctiveness of *-Xt-*, especially following Old Turkic consonant stems. This explains why the replacement *-Xt-* by the syllabic causative *-tUr-* is especially widespread after consonants. As suggested in Ramstedt (1912: 28), Johanson (1975: 126-128) and Erdal (1991: 830), I analyze OTk. *-tUr-* as a morphologically complex form, consisting of two juxtaposed causative suffixes OTk. *-(X)t-*

¹¹ Johanson 1975: 111-112: “Die Tatsache, daß *-[ʔ]t-* unter den Aorist- und Konverbsuffixen die jeweilige *I*-Variante bevorzugt (*yaγutür, tükäti* etc.), spricht natürlich zugunsten der Auffassung Ramstedts (1912, 22), daß es “dem mongolischen verbum auf *-čī-* < **-ti-*” entspreche, und zuungunsten der übrigen (oben kurz angedeuteten) Herleitungsversuche.”

and *-Ur-*.¹² The semantic difference between both suffixes lies in the occasional passive nuance of the former suffix. It becomes clear from pairs such as OTk. *basit-* ‘be overwhelmed, be oppressed’ (intr.)’ and OTk. *basur-* ‘press sth onto sth else, weigh down (tr.)’ derived from OTk *bas-* ‘press, oppress (tr.)’. The complex semantics of the double causative are preserved in OTk. *tetür-* ‘to arrange for something to be said (tr.)’ in comparison to the simplex causative-passive OTk. *tet-* ‘to be called so and so, to be so and so (intr.)’ from OTk. *te-* ‘say (tr.)’.

Causative

OTk. *ari-* ‘be(come) clean, pure (intr.)’ => *arüt-* ‘clean, purify (tr.)’

OTk. *bädü-* ‘be(come) big, great (intr.)’ => OTk. *bädüt-* ‘make grow, increase, rear (tr.)’

OTk. *bayu-* ‘be(come) rich (intr.)’ => OTk *bayut-* ‘enrich, make rich (tr.)’

OTk. *kay-* ‘turn or tend towards something, pay respect (intr.)’ => *kayüt-* ‘pull (tr.)’

OTk. *bak-* ‘look at (intr.)’ => OTk. *baküt-* ‘to make someone look at something (tr.)’

OTk. *äj-* ‘bend, bow (tr.)’ => *äjüt-* ‘bow, bend (one’s body or head) forward (tr.)’

OTk. *sözlä-* ‘speak, say, talk (tr.)’ => *sözlät-* ‘make (somebody) speak or talk (tr.)’

OTk. *toki-* ‘hit, knock, beat, weave (tr.)’ => OTk. *toküt-* ‘to have something beaten, knocked (tr.)’

OTk. *uk-* ‘understand (tr.)’ => *uküt-* ‘explain (tr.)’

Passive from transitive

OTk *bas-* ‘press, oppress, make a surprise attack on (tr.)’ => *basit-* ‘be overwhelmed, be oppressed, be taken by surprise, be overcome, fall victim to (intr.)’

OTk *kov-* ‘follow, pursue, chase’ => *kovüt-* ‘get chased’

OTk. *kavza-* ‘surround’ => *kavzat-* ‘be surrounded, surround oneself with (intr.)’

OTk. *säv-* ‘love, like’ => OTk *sävit-* ‘be loved, make oneself loved (intr.)’

OTk *te-* ‘say (tr.)’ => OTk *tet-* ‘be said to be, be called, be considered (intr.)’

OTk. *yay-* ‘shake (tr.)’ => OTk *yayüt-* ‘be shaken, be moved (intr.)’

3.7. The correspondences

The phonological correspondences between the suffixes pJ **-ta-*, pK **-ti-*, pTg **-ti-*, pMo **-ti-* and pTk **-ti-* are regular. They confirm the correspondence series for the voiceless dental stop pTE **-t-* and the front high vowel pTE **-i-* established on the basis of lexical evidence in Robbeets (2005a: 326, 363-364). The absence of a front vowel in pJ **-ta-* is not necessarily problematic because all actional suffixes and the majority of the diathetical suffixes lexicalized in the Japanese suffix chain have the

¹² I refer to Erdal (1991: 710-734) for an extensive list of OTk. *-Ur-* causatives e.g. OTk *bas-* ‘press, oppress (tr.)’ => *basur-* ‘press sth onto sth else, weigh down (tr.)’, OTk *ič-* ‘drink (tr.)’ => *ičür-* ‘give someone sth to drink’, OTk. *käl-* ‘come (intr.)’ => *kälür-* ‘bring (tr.)’.

vowel **-a-*. This is probably due to a process of analogy.¹³ It is arguable that the aspiration in the Middle Korean suffix *-thi-* is secondary, due to the contraction of a double causative. The reconstruction of a front vowel in Turkic is legitimate on the basis of internal analysis.

The primary semantics of the original Trans-Eurasian suffix are causative since this is the common ground shared by all suffixes. Due to the principle of Occam's razor that the explanation of any phenomenon should make as few assumptions as possible, logic suggests that the passive interpretation had already developed in the original language. The passive semantics are only lacking in Mongolic. It probably is the polarity between the causative **-ti-* and the medial **-ra-* that blocked out the passive interpretation for the Mongolic suffix. The intensive semantics in Korean and Tungusic are explained as independent internal developments. In Korean they developed within the context of double causation. The rich Tungusic semantics suggest a gradual loss of diathesis that led to a delimitative function of the suffix. Delimitation of the time frame finally developed into the expression of high frequency and intensity. The intensive meaning in Mongolic is merely superficial due to the semantics of natural force that is often involved in the basic verbs. Medial-causative pairs typically derive from verbs expressing a spontaneous development. It is interesting to note that the causative-passive semantics are clearly preserved in the linguistic areas at the periphery of Trans-Eurasia: Japanese and Turkic. Linguistic innovations typically start in the center of an area and tend to push the most conservative forms to the peripheries.

Although it is rather rare in Indo-European, the usage of causative morphemes with passive interpretation is not uncommon among the languages of the world. Aside from the Trans-Eurasian languages, causative-passive markers are particularly common in the language families of Southeast Asia: Austroasiatic, Austronesian and Sino-Tibetan. In the large majority of cases the passive interpretation is thought to have developed from the causative meaning (Solntseva and Solntsev 1997). How can a causative develop into a passive, in spite of the explicit semantic and syntactic differences? The phenomenon is well studied in linguistic literature (Johanson 1974, 1975, Haspelmath 1990, Babby 1993, Malchukov 1993). A possible explanation for the cross-linguistically attested polysemy involves a benefactive permissive. Above it has been noted that an important semantic difference between causative and passive is that the former denotes two situations, whereas the latter denotes only one situation. A syntactic difference is that the initial subject becomes the direct object of causation, whereas it becomes the indirect object of the passive construction. The permissive occupies a common ground between the two categories. Semantically it

¹³ Among the actional suffixes reconstructable for Japanese we find **-ra-* effort, **-ya-* transformation, **-na-* processive, **-ka-* iconic and inchoative, **-ma-* inclination. Among the petrified diathetical markers **-ta-* causative-passive, **-pa-* reciprocal, passive, intensive-iterative, **-ra-/ *-sa-* medial / causative. Only **(C)i-* causative-passive has a different vowel. For internal reconstruction and external comparison, see Robbeets (2007).

denotes two situations ‘Y lets X love [someone]’ (Y did not do sth. and X does V because of that) like the factitive causative ‘Y makes X love [someone]’ (Y did sth. and X does V because of that), but the causation is due to a nonoccurrence of an action. Only one action occurs. On this point the permissive is similar to the passive. Syntactically the initial subject can become the indirect object of the permissive construction. In Japanese, for instance, the causative conversion of intransitives transforms the initial subject into an indirect object with *ni* for permission and into a direct object with *wo* for coercion (Martin 1988: 292-293).¹⁴ Malchukov (1993: 372) illustrates how in causative constructions of Even transitives, the initial subject occupies an indirect object position with permissives and a direct object position with factitives.

The transition between the permissive and the passive probably went over a benefactive construction as in German ‘lieben lassen’ (‘Y lets X love someone’) > ‘sich lieben lassen’ (‘Y lets X love Y’) > ‘geliebt werden’ (‘Y is loved by X’) (Johanson 1974: 532-533). The benefactive interpretation of the suffix in Even and its common use to derive passives from intransitive verbs, expressing the state resulting from motion in the majority of the Tungusic languages, support a semantic development along these lines. Lexicalizations in Turkic verbs on final *-t-* meaning ‘stand’ or ‘lie’ are reminiscent of the Tungusic derivations. Although Mongolic lacks a passive interpretation, it is interesting to note that the causative derivation is restricted to verb bases that represent a change of state, lack agent-oriented meaning components and can be conceived as occurring spontaneously.

As far as combinational patterns are concerned, it is clear that all suffixes under inspection derive verbs from verbs. Poppe’s characterization of WMo *-ci-* as a dead-verbial suffix is probably based on a misinterpretation of the data. In all five subgroups the causative(-passive) suffixes logically follow actional suffixes. All **-ti-* reflexes occupy a relatively leftward position in the diathetical suffix chain. The causative-passive suffixes pJ **(k)i-*, pK **-ki-* and pTg **-ki-* treated below are in a position to the right of the causative-passives pJ **-ta-*, pK **-ti-* and pTg **-ti-*. Since the latter occur less frequently and less productively than the former they are probably more archaic. The conservatism of pTE **-ti-* as a causative-passive that already operated as a suffix in the original language is further supported by the observation that **-ki-* represents grammaticalization in progress, while **-ti-* reflects lexicalization in progress.

¹⁴ For many speakers *J Kodomo-ni gakkō-ni ika-se-ru* (child-dat. school-dat go-caus.-ind.) ‘let the child go to school’ seems to have a softer implication than *J Kodomo-o gakkō-ni ika-se-ru* (child-acc. school-dat. go-caus.-ind.) ‘make the child go to school’.

4. Comparative evidence for the ancillar auxiliary pTE **ki-* ‘do’

4.1. Previous proposals

In reference to Martin (1987: 64), Takeuchi (1999: 93), Unger (2000: 667), Vovin (2001: 187-189), it is clear that the comparison of the Japanese suffix *-(C)i-* with the Korean causative-passive marker *-ki-* is commonplace in linguistic literature. Vovin adds an Evenki member to the etymology, which he labels as the transitivity switcher *Evk. -gii-*. In a previous evaluation of the core-evidence relating Japanese to the Trans-Eurasian languages (Robbeets 2005a: 54, 161, 960-961) I rejected the Japanese participant for reasons of circularity of the internal reconstruction. However, this case can serve as an example of the legitimacy to reconcile internal and external evidence after the establishment of phonological correspondences on the basis of lexical core-evidence. Switching back and forth between internal and external reconstruction is common practice in well-established language families like Indo-European.

I am unaware of any contributions that include the Turkic and Mongolic ancillar auxiliaries in the causative-passive etymology. The Turkic and Mongolic verbs, however, have been compared to each other in various studies: Ramstedt (1935: 223), Poppe (1960: 19), Starostin et al. (2003: 675-676). Starostin further relates the first member of the compound verb J *kizuku*, OJ *kiɫduk-* ‘build, construct’, but his proposal is in contradiction with the internal analysis of the Japanese verb (Robbeets 2005a: 120).

Reconciling internal and external comparative evidence, the present study proposes the reconstruction of a causative-passive pJ **-ki-*. It compares the causative-passive suffixes in the eastern Trans-Eurasian languages with the ancillar auxiliaries in the western languages. The proposed development of causative suffixes from an auxiliary verb ‘make, do’ is supported by universals of causativity.

4.2. Japanese: pJ **-ki-* causative-passive

The formative element *-(C)i-* deriving bigrade verbs from quadrigrade counterparts is referred to by Unger (1977: 131) as a formant *-gi-* that “changes endo-active verbs into exo-active and vice versa”, by Martin as a “formant making transitive/ intransitive forms” and by Vovin (2001: 187-189) as a “transitivity flipper”. However, the impact of the Japanese suffix on the valency of the base, the cross-linguistically observed polysemy of causative and passive and the external comparative evidence support the use of the term causative-passive. The verb pairs below illustrate that the suffix can also derive causatives from transitives and passives from intransitives in a small number of cases. In Japanese, quality verbs (e.g. J *taka-*, OJ *taka-* ‘(be) high’ ‘be high’) can be distinguished on the basis of their morpho-syntactic behavior from a class of adjectival nouns (e.g. J *sizuka na*, OJ *siduka nar-* ‘quiet’) that does not take inflectional morphology and that follows different derivational patterns. These

intransitive quality verbs are transformed into passives with the suffix $-(C)i-$.¹⁵ This argues for the description causative-passive rather than reverse transitivity of the base.

As far as the formal reconstruction is concerned, quadrigrade verbs (e.g. OJ *uk-* ‘float’, *ok-* ‘put’) with bigrade counterparts (e.g. OJ *uke2-* ‘let float’, *oki2-* ‘arise’) can be derived from vowel final roots (pJ **ukV-*, **okV-*). The exact nature of the vowel (pJ **uka-*, **oko-*) becomes clear from covert derivations including the roots (e.g. OJ *ukab-* ‘float’, *okor-* ‘rise’, *okos-* ‘raise’). It is confirmed by the quality of the bigrade vowel (e.g. $e2 < *ai$ in *uke2-*, $i2 < *oi$ in *oki2-*). This supports the derivation of OJ *uke2-* ‘let float’ from pJ **uka-* ‘float’ and causative $-(C)i-$ and of OJ *oki2-* ‘arise’ from pJ **oko-* ‘raise’ and $-(C)i-$ passive. More problematic than the vowel is the consonant in pJ **-ki-*. We lack conclusive internal evidence for a voiceless velar initial. There are no strings of two subsequent vowels in Old Japanese (Martin 1987: 64-65). Japanese $-(C)i-$ must go back to a consonant initial suffix, but evidence for the exact nature of the consonant is missing. However, velar elision before a high front vowel is sporadically attested in Japanese. It occurs word-internally as for instance in *tuitati* ‘first day of the month, new moon’ that is derivable from *tuki* ‘moon’ and a deverbal noun from *tatu* ‘stand’. Velar elision is also found on suffix boundaries as in the adjective attributive OJ *-ki* that developed into contemporary *-i* in for instance the attributive form OJ *taka-ki* for J *taka-i* ‘high’. For reasons explained in Robbeets (2005a: 53-55) I do not reconstruct voice distinction in proto-Japanese. External evidence for the reconstruction of an initial velar comes from the parallel with the other Trans-Eurasian causative-passive markers and ancillary auxiliaries.

Causative from intransitives

ak- ‘open (intr.)’ => *ake2-* ‘open (tr.)’

uk- ‘float (intr.)’ => *uke2-* ‘float, let float (tr.)’

susum- ‘advance, go forward (intr.)’ => *susume2-* ‘advance, put forward (tr.)’

tat- ‘stand, be built (intr.)’ => *tate-* ‘erect (tr.)’

mi₁t- ‘get full’ => *mi₁te-* ‘fill (tr.)’

yam- ‘stop, cease (intr.)’ => *yame2-* ‘stop, quit (tr.)’

Causative from transitives

ayabum- ‘feel anxiety over, fear (tr.)’ => *ayabume-* ‘put in danger, endanger, compromise (tr.)’

ap- ‘meet, fit, agree (tr.)’ => *ape2-* ‘join (tr.)’

pak- ‘slip (sth.) on, wear (tr.)’ => *pake2-* ‘have/let (so.) wear (tr.)’

¹⁵ Apart from *naga-* ‘(be) long’ => *nage2-* ‘throw away, abandon’, all derivations of intransitive quality verbs are passives.

Passive from transitives

ok- ‘put (tr.)’ => *oki₂-* ‘arise (intr.)’
ki₁r- ‘cut (tr.)’ => *ki₁re-* ‘get cut, can cut, be sharp (intr.)’
sak- ‘rip, split (tr.)’ => *sake₂-* ‘get ripped, split (intr.)’
to₂k- ‘untie, solve, melt (tr.)’ > *toke₂-* ‘come untied, be solved, get melted (intr.)’
yak- ‘burn, roast (tr.)’ => *yake₂-* ‘get burned, get roasted (intr.)’
war- ‘split, break, halve (tr.)’ => *ware-* ‘split in two, be broken in two (intr.)’

Passive from intransitives

ar- ‘be, exist’ => *are-* ‘appear, be born’
 quality verbs: *aka-* ‘(be) red’ => *ake₂-* ‘get bright, dawn’
ara- ‘(be) rough’ => *are-* ‘rage, run wild’
kura- ‘(be) dark’ => *kure-* ‘get dark’
opo- ‘(be) great, big’ => *opi₂-* ‘grow, get bigger’
puka- ‘(be) deep’ => *puke₂-* ‘deepen, get late, grow old’
puru- ‘(be) old’ => *puri-* ‘get old’
taka- ‘(be) high, tall’ => *take₂-* ‘be advanced, excel’

We find indications that the causative-passive suffix developed from an ancillary auxiliary ‘do, make’ at an early time in the prehistory of Japanese. There are a small number of -(C)i- derivations in Japanese that appear to derive nominal bases. These derivations are mainly transitive verbs that add the meaning ‘make (into) the nominal base’. Examples are OJ *ata* ‘enemy, hostility’ => *ate-* ‘hit, strike (tr.)’, *kata* ‘one side (of two), one (of a pair)’ => *kate-* ‘join, unite (tr.)’, OJ *sima* ‘piece of marked-off land, quarters, territory, island’ => *sime₂-* ‘delimit, mark out as one’s territory, occupy, take possession of’. An intransitive derivation ‘be made into’ is reflected in *aya* ‘design, model’ => *aye-* ‘be similar’.

I do not exclude that the iconic suffix pJ *-ka- ‘make a sound or create a sensation like the base onomatopoeia’ is related to the auxiliary pJ *ki- ‘do, make’. The iconic suffix occurs in pairs such as **kororo* (mimetic for animal sounds) => *ko₂ro₂ro₂k-* ‘bark (in a hoarse voice), neigh, chirp’, **soso* (mimetic for a gurgling sound) => OJ *so₂so₂k-* ‘pour a liquid with a gurgling sound’, OJ *sawa-sawa ni* ‘noisily, turbulently (mimetic)’ => OJ *sawak-* ‘cause commotion, disturbance, create a fuss’. More examples can be found in Robbeets (2007). The vowel in the iconic pJ *-ka- is probably adapted in analogy with the majority of derivational suffixes on -a-, such as the inchoative *-ka-, in order to prevent fusion with the root and to keep the sound symbolism intact. Inhibition of regular phonological developments is observed cross-linguistically in sound-symbolic verbs. Eng. *pipe*, for instance, is the regular outcome of the onomatopoeic verb MEEng. *pi:pen* ‘make the sound of little bird chicks’. But in order to keep the original iconicity intact, a phonologically irregular replacement, Eng. *peep*, is the more common variant.

4.3. Korean: pK *-ki- causative-passive

K *-ki-*, *-hi-*, *-i-* MK *-ki-*, *-Gi-*, *-hi-*, *-i-* < pK *-ki-

The Korean causative-passive K *-ki-*, MK *-ki-* (Ramstedt 1939: 133-137, Lewin 1970: 14, Martin 1992: 221-225, 623) has numerous allophones that appear to be the result of velar lenition: K *-hi-*, *-i-*, *-y-* MK *-Gi-*, *-hi-*, *-i-*, *-^ly-*. The suffix derives causatives from transitive and intransitive verbs and passives from both transitive verbs. Intransitive quality verbs are transformed into causatives.

Causative from intransitives

K *nem-* ‘exceed, pass beyond (intr.)’ => K *nemki-* ‘pass, exceed, make go over (tr.)’

K *olm-*, MK *wolm-* ‘move (intr.)’ => K *olmki-*, MK *wolm .ki-* ‘move (tr.)’

K *swum-*, MK *swum-* ‘lie hidden (intr.)’ => K *swumki-*, MK *swum .ki-* ‘conceal (tr.)’

K *nal-*, MK *nol-* ‘fly (intr.)’ => MK *nol .Gi-* ‘cause to fly (tr.)’

K *sal-*, MK *sal-* ‘live’ => MK *sal .Gi-* ‘cause to live (tr.)’

K *noph-* ‘be high’ => *nophi-* ‘heighten (tr.)’

Causative from transitives

K *pes-*, MK *pes-* ‘remove, strip off (tr.)’ => K *peski-*, MK *pes .ki-* ‘unclothe (tr.)’

K *tuT-*, MK *tuT-* ‘hear (tr.)’ => K *tulli-* ‘get heard (intr.)’ ~ K *tulli-*, MK *tul .Gi-* ‘cause to hear (tr.)’

K *ip-*, MK *nip-* ‘wear’ => K *iphi-* MK *nip .hi-* ‘cause to wear’

K *mek-*, MK *mek-* ‘eat’ => K *meki-*, MK *me .ki-* ‘feed’

K *cwuk-*, MK *cwuk-* ‘die’ => K *cwuki-*, MK *cwu .ki-* ‘kill’

Passive from transitives

K *a:n-* ‘embrace (tr.)’ => K *a:nki-* ‘embrace (tr.), get embraced (intr.)’

K *ccic-* ‘tear (tr.)’ => K *ccicki-* ‘be torn’

K *sim-* ‘plant (tr.)’ => K *simki-* ‘cause to plant (tr.); get planted (intr.)’

K *ttut-* ‘bite, graze (tr.)’ => K *ttutki-* ‘cause to graze (tr.), get bitten (intr.)’

K *elk-*, MK *elk-* ‘tie (tr.)’ => K *elkhi-*, MK *el .khi-* ‘get tied (intr.)’

We find indications that the causative-passive suffix developed from an ancillary auxiliary ‘do, make’ in the iconic suffix K *-i-* ‘make a sound or create sensation like the base onomatopoeia’. It derives sound symbolic verbs such as K *kutek* ‘nodding, bobbing, making a slight movement’ => K *kuteki-* ‘nod’, MK *kuteki-* ‘nod (one’s head)’, K *tulmek* ‘shaking’ => *tulmeki-* ‘shake’, K *(s)swuktek* *(s)swuktek* ‘in whispers, under one’s breath’ => K *(s)swuktek-i-* ‘whisper’. More examples can be found in Robbeets (2007). In accordance with the velar elision in the causative-passive suffix following stem final velars (e.g. K *meki-* ‘feed’, K *cwuki-* ‘kill’), the initial velar of the suffix pK *-ki- was probably lost after the final *-k* of the onomatopoeia.

4.4. Tungusic: pTg *(-)ki- ancillar auxiliary to causative

Benzing (1955a: 1065) advances evidence for the reconstruction of a denominal suffix pTg *-gi- ‘machen’. He (1955a: 1070) treats the deverbal causative suffix pTg *-gi- as a distinct marker. For both suffixes he notes that they are difficult to recognize due to phonological fusion with the root: “wegen kombinatorischen Lautwandels meist schwer zu erkennen”. In view of current research on the universal typology of causativity in connection with ancillar auxiliaries meaning ‘to do’, the present study takes the position that the causative and the grammaticalized auxiliary ‘make’ are internally related. An intermediate step in the gradual process of grammaticalization is represented by the use of the suffix following onomatopoeic expressions. Except for some scarce and trivial examples in Manchu, Even and Udehe, I am unable to find cases in which the function extends to passive.

As far as the formal reconstruction is concerned, pTg *ki- is preferred to Benzing’s pTg *gi-. The distribution in the Tungusic languages is suggestive of the original variant allomorphy of the suffix. Voiceless ki- voices to -gi- after the liquid -r- and assimilates to -ŋi- after the dental nasal -n-. In longer sequences the suffix vowel can be omitted.

4.4.1. Ancillar auxiliary pTg *(-)ki- ‘do, make, create’

4.4.1.1. Manchu

I was unable to find traces of a suffix -ki- ~ -gi- ~ -ŋi- deriving creative verbs from nominal bases in Manchu. However, the suffix frequently occurs in the derivation of iconic verbs. With the surface exception of Ma. *carki-* ‘rattle together (as belt pendants), create a dissonance, tinkle’, which in reality is a copy from WMo. *čargi-* ‘rattle, make a harsh sound, speak harshly’ (Rozycki 1994: 45), the suffix usually undergoes lenition to -gi- after the liquid *r*. The majority of the Manchu mimetic expressions have a final liquid.

Ma. *jor* (mimetic for the sound of many humans or of screaming animals) => Ma. *jorgi-* ‘chirp, twitter, hum’

Ma. *tur* (mimetic for the sound of a horse clearing its nose) => Ma. *turgi-* ‘clear the nose (of horses), snort’

Ma. *holor* (mimetic for the sound of a bell’) => Ma. *ho:rgi-* ‘ring’

4.4.1.2. Evenki

The suffix Evk. -ŋ- ~ -ŋi:- ‘make, build, create’ (Nedjalkov 1997: 301, Konstantinova 1964: 198) derives creation verbs from nouns, nominal adjectives and adverbial expressions. The lexicalization of the suffix in iconic verbs can be interpreted as a specific use ‘make (a sound)’ after expressive adverbs. In iconic verbs the suffix surfaces as -ki-. The allomorph -ŋ(i):- appears after -n- and in a vocalic environment, while -gi- is the realization after the liquid -r-.

Creative

gule ‘house’ => *guleŋ-* ‘build a house’
kolobo ‘bread’ => *koloboŋ-* ‘bake bread’
sirba ‘soup’ => *sirbaŋ-* ‘cook soup’
aya ‘good’ => *ayaŋ-* ‘improve’
kete ‘many, much’ => *keteŋ-* ‘increase’
a:cin ‘nonexistent, absent’ => *a:cinŋi:-* ‘liquidate’

Iconic

Evk. *simki-* ‘cough’, Evk. *uŋki-* ‘cry, weep’, Evk. *ñeki-* ‘gnaw, crunch’, Evk. *burgi:-* ‘flow with a splashing noise’, Evk. *cirgi-* ‘chirp, twitter’, Evk. *kergi-* ‘snort’, Evk. *sirgi-* ‘make a clattering noise, creak, squeak’, Evk. *dergi-* ~ *deriŋ-* ‘shiver, tremble’, Evk. *sargi-* ‘splatter (of water, rain)’.

For most of these verbs the sound symbolic adverb is no longer attested separately in Evenki. This observation could indicate that the derivation took place at an early time in Tungusic. It is supported by the fact that some of the iconic verbs have cognates across the Tungusic languages. For instance, pTg **sim-ki-* is reflected in other verbs for ‘cough’, such as Even *hi:mki-*, Neg. *simki-*, Olč. *siŋbi-*, Orok *sipki-*, Na. *siŋbi-*, *simki-*, Ud. *simpi-* and Sol. *simki-* (Cincius 1977: 87). Other verbs for ‘shiver, tremble’ such as Ma. *dergiše-*, Olč. *derji-* and Na. *dergi-* reflect pTg **der-ki-* (Cincius 1975: 237). The sound symbolic adverb underlying Evk. *uŋki-* ‘cry, weep’ is still reflected in Even *uŋe:-uŋe:*, a mimetic expression for weeping (Cincius 1977: 278-79).

4.4.1.3. Even

In Even we find a creative suffix *-(i)k-*, *-ki-* in voice alternation with *-(i)g-*, *-gi-* (Benzing 1955b: 34) that derives verbs from nouns and adjectives, adding the meaning ‘make, create’.

In lexicalized iconic verbs the suffix appears as *-k(i/i)-* with allomorphs *-g(i/i)-* and *-ŋ(i/i)-*. The voiced allomorph appears after *-r-*, while the velar nasal appears after *-n-*. After words consisting of two or more syllables the suffix vowel drops and the allomorph *-ŋi-* loses its nasalization and becomes *-g-*.

hulta ‘fish meal’ => *hultak-* ‘produce fish meal’
hiŋa-ŋa: ‘yellow’, *hiŋa-l-* ‘become yellow’ => *hiŋak-* ‘hunt yellow animals’
hula-ŋa: ‘red’, *hula-l-* ‘become red’, => *hulak-* ‘hunt red foxes’
hotoran ‘road, way’ => *hotarag-* ‘pave a way, make a road’
awun ‘hat’ => *awug-* ‘sew a hat’
kam ‘yukola’ => *kamgi:-* ‘prepare yukola’

Iconic

Even *hi:mki-* ‘cough’, *hiŋki-* ‘crackle’, *keki-* ‘whistle’, *kurik-* ‘cackle (duck)’, *nurik-* ‘blow one’s nose’, *nusak-* ‘sniff’, *pasak-* ‘whip, clap one’s hands’, *pisak-* ‘peep (marmot)’, *kerŋi-* ‘bawl, roar (dog, bear), miaow’, *kur kur* (mimetic for droning noise) => *kurgi-* ‘drone, bang, roar’, *nimgi-* ~ *nimŋi-* ‘gulp, guzzle’, *niŋi-* ~ *niŋi-* ‘groan, sigh’, *nirgi-* ‘bleat, scream’, *kijŋi-* ~ *kiŋi-* ‘crack, creak, crackle’, *kiŋgi-* ~ *kiŋi-* ‘rustle, boom, buzz’, *jo:ŋi-* ‘echo, sound, resound’

4.4.1.4. Udehe

Nikolaeva (1999: 171) finds a creative suffix *-ŋi-* ‘make, create’ in Udehe. Many nouns in proto-Tungusic, such as pTg **poktaran* ‘road’ or **abun* ‘hat’, have a stem-final nasal. This could explain why the velar nasal suffix replaced all voiced and voiceless velar allophones of *-ŋi-* by analogy. The reason that I am unable to find examples of iconic verbs on velar suffixes can be due to the fact that Udehe velars in consonant clusters easily assimilate. The reflex of pTg **sim-ki-* ‘cough’ in Udehe, for instance, is Ud. *simpi-* ‘cough’.

xokto ‘road’ => *xoktoŋi-* ‘make a road’

au ‘cap’ => *auŋi-* ‘make a cap’

aŋa ‘night shelter’ => *aŋaŋi-* ‘make a night shelter’

ogdö ‘coffin’ => *ogdöŋi-* ‘make a coffin’

momugu ‘firewood’ => *momuguŋi-* ‘collect firewood’

4.4.1.5. Nanai

In Nanai we find various iconic verbs on *-ki* in variation with *-gi* after the liquid *-r-*: Na. *siŋbi-* ~ *simki-* ‘cough’, Na. *nirgi-* ‘thunder’, Na. *xurŋi-* ‘make noise’, Na. *dergi-* ‘shiver, tremble’.

4.4.2. pTg *-ki- causative**4.4.2.1. Manchu**

Although a simplex reflex of the Tungusic causative **-ki-* is missing in Manchu, Gorelova (2002: 239-240, 250) refers to the suffixes Ma. *-na-* / *-ne-* / *-no-* ‘go to do sth.’ and Ma. *-ŋgi* ‘send sb. to do sth.’. The latter suffix stands in a causative relation to the former. It appears to be morphologically complex, incorporating an element **-ki-* that assimilated to the preceding nasal. Verb pairs include *alana-* ‘go to report’ => *alanygi-* ‘send to report’, *tuwana-* ‘go to examine’ => *tuwanygi-* ‘send to examine’. A relic of the passive use of the suffix may be present in Ma. *ala-* ‘to report, to say’ => *algi-* ‘become known, be famous’.

4.4.2.2. Evenki

Vasilevič (1940: 93) and Nedjalkov (1997: 230) refer to a petrified causative *-ki-* ~ *-gi-* in Evenki. After nasals the suffix assimilates to *-ŋi-*.

ulap- ‘get wet (intr.)’ => *ulapki-* ‘make wet (tr.)’

umu:nu:p- ‘unite, merge (intr.)’ => *umu:nu:pki-* ‘unite, merge (tr.)’

ñure:- ‘neal, glow (metal) (intr.)’ => *ñure:gi-* ‘temper, make red-hot (tr.)’

jalup- ‘get filled (intr.)’ => *jalupki-* ‘fill (tr.)’

kese:- ‘suffer (intr.)’ => *kese:gi-* ‘torture (tr.)’

aru- ‘regain consciousness’ => *arugi-* ‘revive (tr.)’

Comparisons among the Tungusic languages suggest that the suffix was productive at an early time in proto-Tungusic. While Neg. *kesegi-* ‘punish’, for instance, is a reflex of the derived verb, the base corresponding to Evk. *kese-* ‘to suffer’ is not reflected in Negidal (Cincius 1975: 454-455). Evenki has a derived verb *samŋi-* ‘fumigate (tr.)’, but the intransitive base is not preserved, except in the derived noun Ev. *saŋñan* ‘smoke’. The verb pair is preserved in Even *ha:n-* (~ *ha:ñ-*) ‘be smoky’ => *ha:mŋi-* ‘fumigate, smoke (fish, meat) (tr.)’ Other reflexes of the derived verb in Tungusic are Neg. *samŋi-* and Na. *samŋici-* ‘fumigate’ (Cincius 1977: 60). The intransitive base Evenki *se:me-* ‘get used to’ has a causative counterpart in Even *he:mgi-* ‘accustom, habituate’ (Cincius 1977: 141-142).

4.4.2.3. Even

The Even causative has lexicalized in a number of verbs. The basic shape is *-ki-* after consonants and *-k-* after vowels. Allomorphs in sonorant environment are *-gi-* and *-i-*. After a nasal the suffix assimilates to *-ŋi-*. Benzing (1955b: 43) refers to *-gi-* as a suffix that can reverse the transitivity of the base, but examples where the suffix derives intransitive verbs are very rare. A possible example of passivization is perhaps Even *ti-* ‘let go, let loose, release (tr.)’ => *tik-* ‘fall, sink, go down (intr.)’, but the semantics are somewhat deviant.

daw- ‘get infected, be transmitted (of disease) (intr.)’ => *dawgi-* ‘infect, transmit (disease) (tr.)’

hi:l- ‘suffer, worry (intr.)’ => *hi:lgi-* ‘harm, bother, plague (tr.)’

ha:n- (~ *ha:ñ-*) ‘be smoky’ => *ha:mŋi-* ‘fumigate, smoke (fish, meat) (tr.)’

tībī-m- ‘burst, dehisce (of berries) (intr.)’, *tībī-r-* ‘burst, dehisce (berries) (intr.)’ =>

tībī-k- ‘crush, squeeze, strain (berries, caviar) (tr.)’

ilīm- ‘accustom oneself to, get used to (intr.)’ => *ilīm-gi-c-* ‘domesticate, tame’

hi:w- ‘extinguish, go out (of fire) (intr.)’ => *hi:wī-* ‘extinguish (fire) (tr.)’

4.4.2.4. Udehe

Except for the verb pair *bagdi-* ‘live’ => *bagdigi-* ‘be born’ that seems to be a passive derivation from an intransitive verb, I am unable to find traces of the causative marker in Udehe.

4.4.2.5. Nanai

In Nanai we find verb pairs where the suffix devoices after a nasal or where it fuses and assimilates with the preceding root.

sa:n- ‘stretch oneself, spread, lengthen out (intr.)’ => *sa:ngi-* ‘stretch, strain (tr.)’

u:n- ‘melt, thaw (intr.)’ => *u:ngi-* ‘melt, thaw (tr.)’

ure- ‘grow (intr.)’ => *uji-* ‘nurse, feed, raise (tr.)’

The last verb pair goes back to an alternation between pTg **ure-* ‘grow (intr.)’ and pTg **ure-ki-* ‘make grow (tr.)’. The simplex base is further reflected in Evk. *ir-*, Even *ir-*, Neg. *iy-* ‘ripen (intr.)’, Ma. *ure-* ‘be(come) ripe’, Ma. *ursan* ‘sprout’, Na. *urekte* ‘sprout’, Evk. *uruktu* ‘bush’, and Jurchen *uru-xe* ‘ripe’ (Cincius 1975: 323). The derived counterpart is also attested in the Tungusic verbs for ‘nurse, feed, raise (tr.)’: Ev. *irgi-*, Even *irgi-*, Neg. *iggi-* ‘id.’, Oroch *iggi-*, Solon *iggi-* ~ *irgi-*, Ma. *uji-* (Cincius 1975: 325-326).

4.5. Mongolic: pMo. **ki-* ‘do, make’

As an independent verbal root for ‘do, make’ pMo **ki-* is attested in the Secret History as MMo. *ki-*, in the literary language as WMo. *ki-*, and it preserves reflexes across all contemporary Mongolic languages: Khal. *xij-*, Bur. *xe-*, Kalm. *ke-*, Ordos *ki-*, Dong. *kie-*, Bao. *ke-*, *giə-*, Dag. *ki-*, *xi-*, *ši-*, Mgr. *gi-*, *gə-*, Mogh. *ki-*.

It is likely that the suffix *-ki-* that derives iconic verbs from mimetic expressions in Mongolic has developed over the auxiliary use of ‘make, do’. The voiced allomorph *-gi-* occurs in vocalic environment and after the liquid *-r-*. Examples of onomatopoeic derivation are WMo. *čuu* ‘sound, noise, echo, rumor’ => *čuu-gi-* ‘make noise, shout (of many people), quarrel’, WMo. *ša* ‘sound of a downpour’ => *ša-gi-* ‘pour, rain heavily’, WMo. *čar* ‘sound of voice, cry, clamor’ => *čar-gi-* ‘make a harsh sound, rattle, speak harshly’, WMo. *kürd* ‘sudden explosive noise’ => *kürd-ki-* ‘make noise, shout, talk nonsense’ ~ *kür-ki-* ‘talk nonsense, chatter indiscreetly’, WMo. *tüs* ‘sound expressing sudden blow or banging noise’ => *tüs-ki-* ‘make a crashing sound’ (Robbeets 2007). Perhaps creative verbs derived from nominal bases such as WMo. *mösün* ‘strand of rope’ => *musgi-* ~ *muski-* ‘to twist, strand (rope)’, WMo. *mör* ‘way, path, trace’ => *möski-* ‘trail, follow, pursue’ reflect the auxiliary use of **ki-* ‘do, make’ as well.

The iconic auxiliary WMo. *kirA-* that is present in the formation of WMo. *bar-kira-* ‘roar, bellow, cry, yell’, WMo. *ar-kira-* ‘growl, snarl’, WMo. *kür-kire-* ‘grow, grunt, snarl, roar (as a waterfall)’, WMo. *or-kira-* ‘roar, bawl, growl, whistle (as an arrow)’ is thought to be a compound of pMo **ki-* ‘do, make’ and the medial suffix *-rA-*.

4.6. Turkic: pTk. **kī(-)l-* ‘do, make’

An independent root pTk **kīl-* ‘do, make’ is reconstructable in Turkic. In the Orkhon inscriptions and Old Uighur we find OTk. *kīl-*, Karakhanide has *kīl-* and Middle Turkic *qīl-*. In the contemporary Turkic languages we find Tk. *kīl-*, Tat. *qīl-*, Uzb.

qil-, Uigh. *qil-*, Az. *gīl-*, Tkm. *qil-*, Khak. *xil-*, Shor *qil-*, Chu. *ə́s-xəl* ‘deed’, Tuva *qil-*, Kirg. *qil-*, Kazakh *qil-*, Nog. *qil-*, Bash. *qil-*, Karaim *qil-*, Karakalpak *qil-*, Kumyk *qil-* (Clauson 1972: 616). Interestingly Yakut and Dolgan have Yak. *kīn-* and Dolg. *gīn-* with a different root-final consonant. This could suggest that the original root is **kī-* and that *-l-* and *-n-* are petrified suffixes. The problem with this explanation, however, is that the suffix *-(X)l-* derives passives and that *-(X)n-* derives medial verbs in Turkic. The verbs *kīl-*, however, is typically causative.

Internal evidence to reconstruct pTk **kī-* as the original root comes from the iconic suffix OTk. *-kī-* (Erdal 1992, 468, Tekin 1982, 508) that is lexicalized in a number of Turkic verbs such as in OTk *o* ‘exclamation in reply to a caller’ (Clauson 1972: 1) => OTk. *okī-* ‘call, call out loud, recite’, OTk. *tok tok* ‘mim. for a knocking sound’ => OTk. *tokī-* ‘hit, knock, beat, weave’, **bīr* ‘mim. for a snorting sound’ => OTk. *bīr-kīr-* ‘snort’, OTk. *bīrkīg* ‘snort (of a horse)’ and perhaps in OTk. *sukī-* ‘snap one’s fingers’ and OTk. *okī-* ‘vomit’.

It can further be noted that the Turkic auxiliary OTk. *kīr-* is more frequent in the derivation of sound symbolic verbs than the suffix *-kī-*. It derives verbs such as OTk. *ay-kīr-* ‘shout out loud’ and OTk. *kī:-kīr-* ‘shout’ from exclamatory expressions such as OTk. *ay* ‘oh, hi’ or OTk. *kī:* ‘hi’. Ramstedt (1912: 36-37), Tekin (1982: 508) and Erdal (1991: 468) suggest treating the auxiliary as a compound. We cannot rule out that it derives from **kī-* ‘do, make’ and the medial suffix OTk. *-(I)r-*, but it seems more likely to explain the verb as a copy from the Mongolic iconic auxiliary WMo. *kīrA-* (Robbeets forthcoming).

4.7. The correspondences

The phonological correspondences between pJ **(k)i-*, pK **-kī-*, pTg **-kī-*, pMo **kī-* and pTk **kī-* are regular. They confirm the correspondence series for the voiceless velar stop pTE **k-* and for the front high vowel pTE **-i-* established on the basis of lexical evidence in Robbeets (2005a: 333-336, 363-364, 2005b). Although we lack conclusive internal evidence for the exact nature of the consonant, the Japanese formant *-(C)i-* must go back to a consonant initial suffix. Examples of velar elision before front vowels in Japanese support the preference for a voiceless velar stop. If the iconic suffix petrified in Old Turkic verbs on *-kī-* reflects the same ancillary root as the one reflected in the independent verbs OTk. *kīl-*, Yak. *kīn-* and Dolg. *gīn-* ‘do, make’, then it is possible to reconstruct an open monosyllabic root pTk **kī-* ‘do, make’.

As far as semantics are concerned, the causative use of the verb ‘make’ is commonly observed in the languages of the world. Moreno (1993) provides examples from Spanish, English, Modern Greek, Basque, Hindi, Jacaltec, Thai and Ijo. Universally, this process of grammaticalization appears to be unidirectional: an independent transitive verb meaning ‘make’ acquires a phrasal use and gradually develops into a full causative morpheme. The proposed pathway is suggestive of the development of pTE **kī-* in the Trans-Eurasian languages. As an independent verb pTE **kī-* ‘make’

denotes the creation of a new physical entity. As such it is still reflected in Turkic and Mongolic. In Japanese, Tungusic and Mongolic it has a phrasal use, bound to the preceding noun to form a complex verbal expression. The lexical content is gradually decreasing in the sense that the complex verbal phrase does not necessarily refer to the production of a physical entity. The creation can relate to an abstract concept such as the production of a sound with reflexes in Turkic, Mongolic, Tungusic, Japanese and Korean. Finally the ‘make’ verb becomes completely devoid of lexical content and develops into a full-fledged causative marker. The second stage is shared by the languages in the East of the Trans-Eurasian continuum: Tungusic, Korean and Japanese. It has not taken place in Mongolic and Turkic. Interestingly, the grammaticalization in the Trans-Eurasian languages is strong in the sense that the process of delexicalization coincides with the development of grammatical boundness. The third innovation is the development of passive meaning. It is restricted to Japanese and Korean. The passive use may have developed into the common ancestor of both languages. However, since we are dealing with a binary match, it is as likely that it developed independently in Japanese and Korean.

It is common place in contemporary historical linguistics to contend that there are no absolute constraints on what can be copied (Thomason & Kaufman 1988: 14; Campbell 1998: 72; Thomason 2001: 63, Curnow 2001: 434). Nevertheless, in disagreement with Heine & Kuteva (2005: 92), Johanson (forthcoming: 9) maintains that processes of grammaticalization are not copiable. Each word, each morpheme has a history of its own, but its path of past development is irrelevant when it becomes chosen as a target for copying. If the assumption is correct, it advances an absolute constraint on what can be copied.

The first assumed process of grammaticalization of the independent verb ‘make’ involves the development of phrasal use and boundness. This is probably the case for the iconic suffix that is reflected over all five branches of the Trans-Eurasian languages. The second stage of grammaticalization involves complete delexicalization as a causative suffix. It is observed over the three eastern branches. Due to the above mentioned principle of Occam’s razor, it is logically less likely that the grammaticalization occurred independently, primarily over 5 and secondarily over 3 branches, than that it represents a common process. The Trans-Eurasian languages share processes of grammaticalization of corresponding form-function units. If these processes of grammaticalization are not copiable, it follows that the shared property can be attributed to common ancestorship.

As far as combinational patterns are concerned, the suffix derives verbs from nominal and adverbial bases in the first stage of grammaticalization, whereas it derives causatives from transitive and intransitive verbs in the second stage. The transfer of suffixes from nominal bases to verbal bases and vice versa is well-observed across the languages of Trans-Eurasia. An illustration of how the transfer comes about is the development of the *-(X)msIn* simulative in Old Turkic (Erdal 1991: 531). Since it is a composite formant, consisting of a deverbal noun suffix *-(X)m* and a denominal simulative *-sIn-*, there is no doubt that we are dealing with a suffix that is

deverbal in origin. And yet, whereas in the majority of examples *-(X)msIn-* is used following verbs, e.g. Otk. *kil-imsin-* ‘pretend to be doing’, there are also some examples of denominal derivation, e.g. Otk. *eš-imsin-* ‘behave as if one were equal’. The transfer is triggered by a process of analogy.

Transference in the opposite direction, from denominal to deverbal derivation, can be observed for the denominal desiderative suffix *-sA-* (Erdal 1991: 527-529). The suffix probably developed from an independent verb pTk **sa-* ‘think, reckon (as), count (on), desire’ reflected in Karakhanid *sa-* ‘count, reckon (as)’ and still present in a number of contemporary Turkic languages (Clauson 1972: 782-783). In the first stage of grammaticalization it is used to form desiderative verbal phrases such as Otk. *suv-sa-* ‘be thirsty’ from *suv* ‘water’ and Otk. *kök-sä-* ‘want (to rise to) the sky’ from *kök* ‘sky’. As its lexical content is further decreasing, the suffix is analogically transferred to the deverbal realm to derive desiderative verbs such as Otk. *kör-sä-* ‘wish to see’ from *kör-* ‘see’ or Otk. *ye-sä-* ‘wish to eat’ from *ye-* ‘eat’. This example is reminiscent of the assumed combinational transfer for the causative suffix **-ki-*. In reference to Robbeets (2007) it can further be remarked that a significant number of actional suffixes reconstructed for the Trans-Eurasian languages attach to nominal as well as to verbal bases.

A convincing argument for genetic continuity is when several bound morphemes are retained together and fit into a larger paradigm. Although other diathetical markers such as medial, passive and reciprocal are still open for future research, the present findings join in with the etymologies for actional suffixes proposed in Robbeets (2007). It seems possible to etymologize nearly every element of the suffix chain petrified in Japanese verbs from a Trans-Eurasian perspective.

Systematics are also reflected in the diachronic interplay between the causatives **-ta-* and **(-)ki-*. We find indications that **-ta-* is a more conservative element than **(-)ki-* in the combinational pattern, distribution, phonology, morphology and semantics. The relative position in the suffix chain is such that **-ta-* usually precedes **-ki-* as a causative suffix. The **-ki-* causatives are distributed more numerous and more transparently than the **-ta-* causatives. In Japanese **-ta-* has adapted its vowel by analogy to the other suffixes in the suffix chain, while **-(k)i-* has not. As far as morphology is concerned, **-ta-* only occurs as a bound suffix, while **(-)ki-* has reflexes as an independent verb in Turkic and Mongolic. The suffix **-ta-* has extended its function to include the passive in four branches, while the passivization of **-ki-* is restricted to Japanese and Korean. By consequence, **-ta-* is more devoid of semantic content than **(-)ki-*. Whereas pTE **-ta-* reflects lexicalization in progress, pTE **ki-* reflects grammaticalization in progress. The data show the operation of a successive morphological cycle reminiscent of the cyclicity in grammaticalization described by Givón (1979: 207-233), Heine and Reh (1984: 68-71) Delancey (1985: 378-383) and Croft (1990: 230-239). It is interesting to observe how “l’histoire se répète” or how the same cycle is repeated over and over again, for instance, internally in Japanese. The petrified Japanese equipollent causative **-sa-* is thought to have grammaticalized from an independent verb reflected in OJ *so2-* *~se-* ‘do, make’ (Whitman 1985:

234-235, Martin 1996: 19). The *a*-vocalism can be explained through vowel alternation in analogy with the other suffixes in the chain. The causative suffix OJ *-(s)ase-*, J *-(s)aseru*, which is still productive in Japanese is probably a later recycling of the verb OJ *so2-* ‘do, make’ compounded with the causative **-sa-*. The evolution starts with a semantically and syntactically autonomous verb meaning ‘do, make’ which, through grammaticalization, loses in autonomy and develops into a causative marker. Since strongly grammaticalized items tend to be replaced by new lexemes, the result is an evolutionary cycle. The replacement by a new verb meaning ‘do, make’ usually takes place before the existing grammatical element has disappeared. The new function marker therefore is likely to be grafted on the old one, and although the latter may lose its function, its phonetic substance tends to be retained. Of course, cyclicity does not imply that grammaticalization necessarily has to occur or that it has to go to completion. This can be illustrated by the fact that in Turkic and Mongolic pTE **ki-* is still reflected as an independent verb and its grammaticalization has stopped in the primary stage of phrasal use.

5. Conclusion

The controversy about the genealogical relationship of the Trans-Eurasian languages does not involve any paucity of shared properties, it rather lies in the way they are accounted for. The main obstacle is the distinction between code-copying and genetic retention as a motivation for the linguistic similarities. The present article is a comparative study of two causative-passive markers relating Japanese to Korean, and to the Tungusic, Mongolic and Turkic languages. The etymologies provided for the Japanese causative-passive suffixes **-ta-* and **(k)i-* are global in the sense that the correspondences are material, semantic, combinational and systematic. The etymologies stretch over five branches. The correspondences are too regular and too involved to be motivated by sheer chance or by universal principles in linguistic structuring. Nevertheless, one question remains: are the shared properties generated by genetic retention or are they generated by code-copying?

On the basis of the following eleven observations, I find it more difficult to attribute the causative-passive etymologies to code-copying than to attribute them to common ancestorship.

(1) bound inflectional verbal morphology

If any, there are few constraints on what can be copied. Copying is always possible. It is not always probable. Empirically it is observed that languages tend to copy nouns more easily than verbs, free lexemes are more attractive than bound morphemes and derivational morphology is easier to copy than inflectional morphology. The present research being conducted on bound inflectional verbal morphology, it follows that the probability of code-copying is relatively low to begin with.

(2) position close to the verbal stem

The present article relies on Johanson’s (1992, 1999, 2002) conclusions about the extreme resistance to copying of the positions close to the verbal stem, The relatively

close position of the causative-passive suffixes might provide a reliable tool to distinguish between code-copying and genetic continuity.

(3) global

When the shared morphological properties are partially overlapping, we are dealing with selective copying. Cognates are always global. Only form-function correspondences with shared phonological, semantic, combinational and paradigmatic properties yield suitable genealogical evidence. Both etymologies are found to fulfill these requirements.

(4) suffix without root

Another indication of a copy is when the shared morphemes occur attached to shared roots. In Ajia Varvara Romani, for instance, copied verbs display a copied Turkish present paradigm, while native Romani verbs display a native present paradigm (Iglá 1996: 214-216, Friedman 2006: 1). The causative-passive suffixes, on the contrary, attach randomly to native, unrelatable roots. This increases the probability that we are dealing with cognates instead of copies.

(5) neutral base attested

In cases of copied suffixes, a verb is inserted from one language into the other along with the copied suffix. We do not expect that the uninflected, neutral base is transmitted independently. The correspondence between Ma. *amila-* ‘anoint a Buddhist icon’s eyes with blood and thereby impart life to it’ and WMo. *amila-* ‘give live, enliven, animate an image by making strokes on a sacred image, come to life’ is contact-induced. The Mongolian verb is a denominal derivation from WMo. *ami(n)* ‘life, breath’ with the derivational suffix WMo. *-la-*. The derivation holds for Mongolian but not for Manchu because the basic nominal form is absent there. The principle of diagrammatic iconicity underlying in the internal reconstruction of the causative-passive suffixes reduces the code-copying factor. Only when one form is basic and the other is derived from it, are the suffixes reconstructed for the individual languages.

(6) simplex morphology

Shared suffix strings are the result of copying. Section 4.7. makes reference to the Old Turkic simulative *-(X)msIn* as a composite suffix, consisting of a deverbal noun suffix *-(X)m* and a denominal simulative *-sIn-*. Mongolian has copied the entire suffix string from Turkic, mainly in its secondary denominal use, as in the derivation of SH MMo. *ere-mši-* ‘act like a man’ from MMo. *ere* ‘man’. Since the suffix is not morphologically segmentable in Mongolic, this is a clear case of code-copying. The causative-passive suffixes compared in this article are unsegmentable, simplex morphemes.

(7) regular phonology confirms previous findings

The phonological correspondences between the suffixes are regular. They confirm the correspondence series for the voiceless dental stop pTE **-t-*, for the voiceless velar stop and for the front high vowel pTE **-i-* established on the basis of lexical cognates in my previous research (Robbeets 2005a, b). This observation supports genetic continuity.

(8) shared polyfunctionality

Indo-European is sometimes pictured as a fruitful language family for genetic comparison because of its frequent polysemy of morphemes. When a form-function correspondence set offers two or more shared functions, the risk of chance similarity and code-copying is reduced and the cognates are more reliable. The genitive feminine plural in Latin, a fusional language, is expressed by a single marker, e.g. *gallinarum* ‘hen-gen.f.pl.’, in Korean, an agglutinative language, it is expressed by three distinct markers, e.g. *am-thalk-tul-uy* ‘f.-chicken-pl-gen’. The comparison of Lat. *-arum* would yield genetic evidence that is about three times as strong as the comparison of a single Korean suffix. The polysemy of causative and passive for a single suffix, however, makes it clear that the one on one relationship between the expression and the content in agglutinative languages should not be confused with monofunctionality. The observation that the polysemy of pTE **-ta-* is shared between four branches is a strong indication against code-copying.

(9) common processes of grammaticalization

In historical linguistics the distinction between code-copying and genetic retention is based on relative tendencies rather than on absolute constraints. However, Johanson’s (forthcoming: 9) assumption that processes of grammaticalization are not copiable advances an absolute constraint. The Trans-Eurasian languages share processes of grammaticalization of corresponding form-function units. Johanson’s constraint excludes code-copying as a possible motivation for these common processes.

(10) systematic inventory

It is a convincing argument for genetic continuity when several elements known to be quite unsusceptible to code-copying are retained together. The present article deals with systematics from a synchronic and a diachronic perspective. At the same time in the past, the causative-passive **-ta-* participated in a larger verbal paradigm. On the diachronic level, the interplay of causative pTE **-ta-* and pTE **ki-* ‘make, do’ show the operation of a successive morphological cycle reminiscent of the cyclicity in grammaticalization described in linguistic literature.

(11) wide distribution over five branches

The limited distribution of morphemes within an individual subgroup is indicative of code-copying. The extension of the Even sociative with a reciprocal function, for instance, happened under influence of Yakut and is restricted to the Yakut-Tungusic contact zone (Malchukov 2006: 125). In the case of the causative-passive etymologies, however, the correspondences stretch over five branches. Linguistic and geographic distance can help to rule out code-copying. If one intends to study Turkic from a genealogical perspective, the worst choice one can make is to engage in a binary comparison with the Mongolic languages. The reason is obvious: the language families are geographically adjacent and they stand in a high-copying relationship. Copies are expected to obscure the underlying genetic connections. Hence, they will be mistaken for cognates. If we start from the largest reasonable hypothesis and test a model including languages that stand in a low-copying relationship, such as Japanese and Korean, we reduce the probability that we are dealing with copies in disguise.

Logic leads to the conclusion that it is more likely that the causative-passive etymologies presented here are the result of genetic retention than that they are induced by contact. The causative-passive suffixes most probably relate Japanese to the Trans-Eurasian languages in a genealogical sense.

Abbreviations

Az.	Azerbaijani	Neg.	Negidal
Bao.	Bao'an	Nog.	Noghay
Bash.	Bashkir	OJ	Old Japanese
Bur.	Buriat	Olč.	Olcha (Ulcha, Ulchi, Olchi)
Chu.	Chuvash	Oroč.	Oroch (Orochen, Oroqen)
Dag.	Dagur	OTk.	Old Turkic
Dolg.	Dolgan	pJ	proto-Japanese
Dong.	Dongxiang (Santa)	pK	proto-Korean
Eng.	English	pMo	proto-Mongolic
Evk.	Evenki (Tungus, Ch. Elunchun)	pTE	proto-Trans-Eurasian
J	(standard Tokyo) Japanese	pTg	proto-Tungusic
K	(standard Seoul) Korean	pTk	proto-Turkic
Kalm.	Kalmuk	SH	Secret History of the Mongolians
Khal.	Khalkha	Sol.	Solon
Khak.	Khakas	Tat.	(Volga) Tatar
Kirg.	Kirghiz	Tk.	Turkish
Ma.	Manchu	Tkm.	Turkmen
MEng.	Middle English	Ud.	Udehe (Ude, Udege)
MK	Middle Korean	Uigh.	Uighur
MMo.	Middle Mongolian	Uzb.	Uzbek
Mgr.	Monguor	WMo.	written Mongolian
Mogh.	Moghol	Yak.	Yakut
Na.	Nanai (Goldi, Ch. Hezhe)		

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