ORIGINS OF THE ALVEOLAR STOP -D
AS CODA IN MONGOLIC

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Introduction: *It is a well-known feature of Mongolic languages, that the voiceless, aspirated alveolar stop -tʰ was not allowed as coda in the earlier times, even Middle Mongolian reflects a stage, where a vowel was pronounced after this consonant, which can be inferred from sources that demonstrably reflect the pronunciation of that time:*

> *Muq: amta "taste"*
> *TTPM: metü "like", qamtu "together"*
> *SH: batu "firm, solid", buta "bush", erte "early"*

Buryat and some peripherical languages still support this phonotactical rule, cf. Bur bata, Eastern-Yugur batə, Mongghul padə, Mangghuer batə batu, Baoan batə, Dongxiang pudu "strong, firm"; or Bur amta(n), Eastern-Yugur amtan, Mongghul amuta, Mogol amta "taste" (MPQGL: 270, 279)

The Tawgach records can be used limited here, e.g. Tawg qituɣači is a compound of a root qitu + suffixes (Shimunek, 2017).

This final vowel was lost some time ago, and the phonotactical rule has changed, as it can be seen in recent loan words, where no epenthesis occurs: Bur, Khal asfalt "asphalt", Khal awtomat "automation, self-acting", Khal bilet "ticket", Bur granit id., Bur, Khal "diplomat" id. In order to approximately determine the time domain when these changes took place, one should study the written records that more or less reflect the contemporary pronunciation, like the "tod bichig" of Western Mongols, or search for loan words that entered the surrounding languages later than the Genghisid era.

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Assumptions

Our first assumption is that the alveolar semi-voiced stop -d did not occur originally in the Mongolic languages in word or syllable ending position, and in the most cases it is a result of a suffix that was not present in earlier times, or of more recent loanwords. "Earlier times" means definitely a period before Middle Mongolian, though due to the lack of monuments it is hard to determine when this rule changed.

Our second assumption is that the alternation of d ~ s is a result of a development probably from a spirant, e.g. *θ ~ *ð. This variation can be observed frequently and confirms also the first assumption: one might assume, that the development took place differently in the Mo dialects, and later the more conservative sibilant variant and the rather innovative obstruent survived parallel. The Buryat development of coda -s (VGAS: 64) may further confirm this assumption, as it was converted into -d in most of the dialects, which could happen under the influence of *θ ~ *ð > d.

Analysis

In the following chapters I will give an overview about the typical cases where -d occurs as coda. These cases can be assigned to the following groups:

1. Suffixes that are later inventions or borrowings.
2. Formation with ki-.
3. Loan words.
4. Onomatopoeic words.
5. Alternation -d ~ -s.
6. Uncertain cases.
7. Basic vocabulary.

Suffixes

Analysing the words, which have word or syllable final -d, it is immediately apparent, that in most cases these are a result of a suffix, and interestingly most of these suffixes have a sibilant variant as well.

Nominal suffixes
Collective plural -d(Un) ~ -s(Un)

This is a very old, not yet productive plural, which was used to form "collective plural" (Janhunen, 1995) mostly in words that apparently belong to the oldest basic vocabulary of Mongolic languages: modun "wood": *mo(n) + -d + connective vowel -U + -n "marker of the morphological class ending in an unstable nasal" (Janhunen, 1995: 1). Other examples of this formation: (*p)odun "star", nidün "eye", sidün "tooth", (*püdün >) ödün "feather", sodu "quill feather", kedün "how many".

It has also a sibilant variant: usun "water", časun "snow", čisun "blood", hüsün "hair", ebesün "grass", dabusun "salt". As Jahnunen noted (Janhunen, 1995: 4): "[...] the -d- in modu/n expresses the normal type of divisible plurality, the -s- in the usu/n series seems mainly to convey the idea of an indivisible mass."

One may find a couple of etymologies that support Janhunen's theory:

> **modun** "wood": cf. Tung moo id. and SH moǰi "carpenter"
> **sidün** "tooth": the original root might have been *sil cf. silüge "three-year-old sheep", which is also supported by the Tu form tıš id.
> **nidün** "eyes": cf. nilbusun "tears" which is a compound of *ni "eye" + suffix -lb + usun "water". As for the suffix -lb the situation is not satisfactorily clarified (Janhunen, 1995), however the -l might have belonged to the root, in this case we had an analogy with sidün < *sil and nidün < *nil.
> **usun** "water": umda "drink", urus- "to flow" might be derivatives of a hypothetical root *u-.
> **časun** "snow": a derivative of the root *ča, cf. čaγan "white", čayi- "to become white, turn pale".

This plural marker is surely an archaic feature, yet final -d never not stood alone, which might have been due to earlier phonotactic rules.

Plural -d ~ -s

The plural suffix -(U)d (in detail see Poppe, IMCS: 178) was considered an Altaic heritage by Poppe. This suffix had its sibilant variant -s as well that was used mostly after vowels while -d after consonants. It can be found in Tu languages indeed, however Erdal supposed that OTu +(X)t is of Sogdian origin (Erdal, 2004: 78).

> - In Turkic it's not productive, only for people, human beings;
> - in Mo probably an independent development.

Another fact, which points to a later development, is the usage of duplicate plurals in MMo like hodud "stars" (TTPM), modudi "trees" (SH). Apparently, the collective plural had become unproductive by this time, and the speakers of Middle Mongolian did not perceive the plurality in these words, so a new plural suffix -d was added.[1] A similar development can be noticed with the ancient plural -n that lost its function and was considered as singular, e.g. elčin "messenger".

Den.V. -dA

(Kempf, 2013: 165)

It usually forms verbs from adjectives or numerals, e.g.: niged- "to unite, federate"

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[1]   Duplicate plural can be observed in today's spoken languages, too, cf. Poppe IMCS 180

< nigen "one"; čögede- "to be too few" < čögen "little, few"; batuda- "to become (too) strong" < batu "firm, strong"; oyirada- "to come or draw near" < oyir-a "near, close"; olad- "to multiply, propagate" < olan "much, many"; todud- "to become too clear" < todo ~ toda "clear, evident"; uid- "to be bored, lonely" < ui "mourning, sorrow"; üiled- "to do, make, to produce" < üile "work, act"; yekede- ~ yekes- "to be too big or large" < yeke "great, big".

Its Classic Mongolian orthography is not uniform, we find sometimes -d in other cases -dA (when the root ends in -l, then > -d, other cases are ambiguous, e.g. niged- vs. yekede-). MMo forms like üyiletba (SH), üiledkün (TTPM) confirm that -d was already tolerated in coda (cf. medeba, medekün, medeǰü).[2]

Regarding the chronological development of this derivational suffix, it is important to note, that while the roots can be sporadically found as loans in Tung languages, the verbs almost never, or at most in only one dialect, which can be an indication, that this is a relatively recent innovation.

For example, while *belen* "to be ready" exists throughout the whole Tung Sprachbund, the derivation *beled-* is only attested in the Barguzin Evenki dialect:

> **beled**- "to prepare" < *bele, cf. belen, SH beletčü, TTMM beledbei, beledčü, TTPM -, HY -, Muq beletbe, beletkebe.
> Other formations that were created with this suffix, are apparently also later developments:
> **ebed**- ~ ebes- < *ebe cf. ebedčin, ebečin (MPQGL 320). Tung-, only ebečin in Evenki Barguzin (CDMTL 2/437), SH ebetba, TTMM ebed-, TTPM-, HY-, Muq ebet-
> **üiled**- "to do, make, to produce". Tung-, SH üiledüksen, üiledürün, TTPM üiledkün, üiledtügei, TTMM üiledčü, HY-, Muq üiledükci < üile "work, act". Here again only the root is attested in Tung (MT 119): Solon weili "crime", uileš "criminal", Manchu weilen, uilen "deed, crime"
> **nimged**- "to be too thin" < nimgen "thin". SH-, TTMM nimgen, TTPM-, HY-, Muq-. Kalm nimgede- "to be (too) thin", Ordos nemgede- "to be too thin", Tung nemkün (Evenki nemkün, Even nemkun, Oroch nemi, nemne) acc. to the various Tung forms we can consider a root *nem. The verbal form is not attested in Tung.
> **süid** ~ süid- (Nomenverbum) "trouble, havoc, misfortune" Tung-, SH-, HY-. Muq-, TTPM-, TTMM süyidügsen, Bur süid, Ord süid- "to be dissipated, wasted suffer a loss". Apparently from an unattested root *süi, cf. süire "gets into trouble, damaged, destroyed, ruined".

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[2]   Alternatively, these could have been two different suffixes -d vs. -dA. Cf. also Tu: -dA Den.V. from adjectives.

Verbal suffixes

Benedictive -dKUn

(IMCS 252) A compound of passive voice -dA and *Nomen futuri*.

Converbum perfecti -GAd

(IMCS 277)

Acc. to Poppe a common Mongolian - Turkic heritage, the original suffix was -GAč that would be a deverbal noun suffix in Tu. Unfortunately, he does not cite any Tu examples, and neither Clauson nor Erdal mentions such a suffix (only a Den. N. cf. Erdal, OTWF: 83). On the other hand, an internal development in Mo č > d is not attested, nevertheless an alternation č ~ s occurs rarely, thus a development s > č might be taken into consideration (see chapter Alternation -d ~ -s). Poppe did not analyse further this suffix, although the Dev.N -g appears in other composite suffixes, like Nomen usus -dAG (Poppe, IMCS: 274), or Nomen actoris -Gči (IMCS: 274).

This suffix already existed in the Middle Mongolian: TTPM bolu'a:d, bosqa'a:d, bö'e:d, delgere'e:d, SH bari'at, bolu'at, however it is missing from most of the peripheric Mo languages, which may point to a later invention.

Dev.N. -d ~ -s

Similarly to the Den.V. -d ~ -s it has both variants, too, though it seems less productive.

> **güičed** "whole, full, complete" < güiče- "to come to an end, be finished" < güi- < güyü- "to run". Tung -, SH güyice-, HY -, Muq güice-, TTPM güičege-, TTMM güiče-, Khal. гүйцэд, Bur güised, Kalm gǖce-, Ord güičit.

> **siɣud** "directly, straight" < *siɣu-. Tung -, SH -, HY -, Muq -, TTPM -, TTMM -, Khal šūd, Bur šūd, Kalm šūd, Ord šūd. Ramstedt proposed < *siwud and referenced sibtu "all the way through, to the core" (KW 369). The verbal form is sibta- "to pass through, go directly through" (L 696). Other derivatives of the hypothetical root *siɣu ~ *sib are siɣurqai "direct, straightforward, frank", siɣum "line, ruler".

> **ǰokid** ~ ǰokis "propriety, suitability" < ǰoki- "to agree, suit, fit". Tung: only the verb ǰoki-, SH ǰoki-, HY ǰokiya- "to arrange", Muq ǰoqustu, TTPM ǰoqis, TTMM ǰoqis, Khalkha зохид / зохис, Bur zoxid, zoxistoi, Kalm zoks, Ord ǰoqis.

Formations with ki-

Verbs that were created by using the verb ki- "to do" are numerous in Mo languages. In some occurrences, an assimilation took place, and in many cases the root is hypothetical, because it is only attested in compounds, therefore it is hard to decide whether the root ended in -d or -dV:

> **sedki**- "to think" Tung **-**, SH setkijü, setkiba TTMM sedkiyü, sedkimü etc., TTPM sedkil, HY setki, Muq setkiksen. The development could look like: se + -d (cf. Dev.N. -d above) + ki-, cf. sedü- "to plan, devise, think out", which points to a hypothetical root *se, cf. seke "sense".
> **qadqu**- "to pierce, stab" Tung **-**, SH qatqu, TTMM qadqun, TTPM -, HY qatquldu, Muq qatqu (Nugteren, MPQGL: 398).

It is likely a relative of qada- "to drive in, to knock in, to nail" cf. Tu kaz- "to attach a horse to a stake, nail etc." (WOT 502) and also γadasun "pole, stake, pale". The verb qada- can be found in various Tung languages: Ev kada- (also kadasun), Nanai xada-, Even kad-, Manchu xada- (Doerfer, MT: 48).

> **qudqu**- "to stir, mix" Tung**:** Ev kutku-, Manchu kutxu- Nanai kotoxo (Doerfer MT 111), SH qutqu-la-, TTMM qudququi, qudquldu-, TTPM -, HY qutqula-, Muq qutqu- (Nugteren, MPQGL: 431).

It is hard to determine whether it is a formation with ki-, because the hypothetical root *qud ("a tool to stir sg." ?) cannot be traced back in any Mo language. The similarity with Tu kat- "to mix" is striking, however a regular correspondence between Mo u ~ Tu a is not known. The sporadic appearances in Tung languages point to a later borrowing.

> **(h)adqu** "hollow of the hand, a handful" / (h)adqu- "to grip, to take" (< *patku). Tung**:** Ev hata, Evk hatika, UD pataga, pataxe (MEIM 75), SH atqujǔ, atqun, TTMM -, TTPM -, HY -, Muq -. Bur adxa "handful", "grab a handful", Ord adxu "the palm of the hand", "hold in the palm of your hand", Khal atga "handful, palmful", "to grip, to grasp", Kalm atxa "handful", "grasp, grab".

It is a *nomen verbum* (Kara, 1997: 158), and if it was indeed formed with ki- then we may suppose a verbal origin. For similar formations cf. čimki "a pinch / to pinch, emkü "a mouthful / to bite, hold in the mouth" (Kara op.cit). Poppe compared it with Manchu fatxa "Pfote, Klauen eines Raubvogels" (VGAS 50), Rozycki has found it in various Tung languages and designated it as a "pre-loan correspondence". Independently of the time when it spread in the Tung languages, the initial *p is definitely an archaic mark.

Regarding the root *pad, one might think here of onomatopoeic origin of the verbal

form, similarly as Mo qabči- "to press, to grasp, to catch", Tu kap- "to grasp, or seize", as Doerfer noted (MT: 125): "Besides, also in Tu. - as in many languages - widespread class of the type kap- "to pack", cf. Latin capere, Hungarian kapni, Tu. qap-, Arab. qabada etc." Considering a verbal origin "to grip", a meaning shift to "handful, hollow of the hand" seems logical.

It is very likely related to OTu adut "a handful" (Clauson, 1972: 44), which also goes back to *hadut < *padut as it was demonstrated by Doerfer (TMEN 4/307).

In the following chapters a not fully comprehensive list of words is demonstrated, where the word or syllable final -d is normally part of the root.

Loan words

Alveolar stops in coda of Tu origin are treated variously in Mo loanwords:

-   in some cases word or syllable final -t was replaced by -d;
-   -d was preserved without epenthesis;
-   -d was preserved and an epenthesis occurred.

Words in the first two groups seem to be later borrowings: many of them are cultural words, others are not attested in MMo documents.

Words in the third group can be earlier loans (cf. üde, anda), in these cases final -d was probably not yet cosy, so an epenthesis was added.

t is replaced with d

ǰud "severe weather, disaster". Tung -, SH -, TTMM -, TTPM -, HY -, Muq - Kalm zut^n "cold winter with a lot of snow", Bur zud "natural disaster", Ord ǰud "epizootic (disease)", Khal dzud "severe weather, epizootic".

Cf. Tu yut "weather so severe that it kills livestock". It is not straightforward to decide, which language was the donor. This word was recorded in the Bilge Qaghan inscriptions as yut, which gives an indication that it was copied in an earlier form with initial ǰ. According to Poppe (VGAS 49) "The root and syllable ending *t had already been replaced by *d in Proto-Mongol", and ǰud is an example of this phenomenon. In our opinion it is a later borrowing from Tu, where t in coda was replaced by -d as in other loans: adqaγ "attachment to or dependence on the material world" < Uyg atγaq id., qurud "dried curds" < Tu kurut id., keyid "monastery" < Tu kebit "shop".

Similar substitutions occurred in these cases as well:

čidkür "devil demon, ghost" cf. čidür "hobbles for horses" ǰedker "hindrance, obstacle" also "demon, devil" < ǰedkü- "to hinder, clog".

The alternation of the inferential root *čid ~ *ǰed points to a loan, and indeed Tu čit appears to be the obvious source: cf. Clauson EDT (401): čit *originally prob. in a physical sense 'a fence'. The vowel was originally a velar -ı-, but, as frequently happens, later became -i-.*. It has two forms čit and čet, the substitution Tu č > Mo ǰ is however not very common, although not inconceivable. Both verbs were probably formed with ki-, and later a shift in the meaning occurred from "obstacle, hindrance" to "devil, demon".

ǰidkü- ~ ǰüdkü- "to pull, to endeavour, strive, exert oneself". Ramstedt connected it with Tu yit- "anlangen" (KW 484), it is however more likely originates from Tu yüt- "to carry something" < *yü- (EDT 885).

Final d is preserved - no epenthesis

ed "things, object, property, possessions". Tung -, SH et, TTMM ed, TTPM ed, HY -, Muq et. < OTu ed "movable property and livestock" (cf. ed tavar "merchandise, goods" < Uig.) A cultural word that was adopted by the Mongols in the Chinggisid era.

birid "starveling host, demon of hunger" Tung: Manchu birit, SH -, TTMM birid, TTPM -, HY -, Muq -. < Uyg pirit id. < Sanskr. preta.

bürgüd "eagle" Tung -, SH -, TTMM -, TTPM-, Muq-, HY: buRugut "eagle, berkut" Tu: OTu -, Chagatai börküt, Kazakh бүркіт, Tatar бөркет, Bashkir бөркөт, Kyrgyz бүркүт, Uzbek burgut. Acc. to Doerfer a Tu loan in Mo (TMEN 2/331), but it is possible that the opposite happened, as it is not attested in OTu, and there are other words for eagle in Tu languages.

Final d is preserved - an epenthesis is used

In these cases, a vowel was added to the stem, some of these words are probably more ancient loans.

üde "noon". Tung: Manchu uden "rest at midday", SH üde manaγar "evening and morning", HY-, Muq-, TTPM-, TTMM üde manaγar, Üde čaγ-tur, üde kürbe, tede üde-yi:n dour-a. Bur üde "noon", Kalm üdⁱ "noon", Ord "midday, meal of midday". < OTu üd ~ öd "a point in time". The Tu meaning denoted "a point in time", "noon", "period of time", "season" (Róna-Tas WOT), and the modern Mo dialects reflect this notion. It is interesting however that in the MMo records it had a different meaning: "evening, late", often used together with manaγar "morning". This rather limited and specific usage points to a borrowing from Tu. Regarding the modern usage one might consider two scenarios: it was copied multiple times in various dialects with different meanings, and while the meaning "evening" gradually fell out of use, its other meaning "noon" came to the fore. The other possibility

is a shift in the meaning from "evening" to "noon" it seems however less likely due to the relatively significant difference of the two time-adverbials. The Manchu borrowing uden "rest at midday" would rather support the first scenario, at least it proves that its modern meaning already existed in the MMo / classical period.

ǰada "rain magic". Tung-, SH ǰada, HY-, Muq ǰadu, TTPM-, TTMM ǰad. < OTu yat "rain magic, rain stone". Poppe listed this word among the Turkic loanwords in MMo, it is also a loan in Tu < Persian ǰādū (Poppe: The Turkic Loan Words in Middle Mongolian p.39). According to Kara "In all probability, this disyllabic Mongol form is not from Middle Turkic but from a much earlier period." (Kara, Late medieval Turkic elements in Mongolian :95)

anda "sworn brother, friend". Tung: Evk anda "friend", Solon, Manchu etc. id. (MT 37), SH anda, HY-, Muq anda, TTPM-, TTMM anda, < OTu and "oath" (TMEN 1/149, 2/561, EDT 176). A simplex in both languages. Acc. to Doerfer a loan in Mo, although on phonological basis it cannot be decided, its meaning in Tu is definitely much broader, which points to a loan in Mo.

Onomatopoeic

Onomatopoeic words have usually a broader "phonotactical tolerance", and phones that are not part of the phonetic stock of a language, can also be observed, like *p* in Mo. Some arbitrary examples are listed below, interestingly the alternation of d ~ s can be noticed in onomatopoeia as well: nud "*crackling sound, cracking", pad ~ pas "the sound of clicking, knocking", pid ~ pis "the sound of snapping", sad, šad "crash, bang, crackle etc*."

Alternation -d ~ -s

The alternation -d ~ -s can be observed frequently (see Poppe IMCS 109 et al.), but only in coda, which also supports the assumption that -d was not native in this position originally. According to Poppe the alternation of final s ~ d "reflects a final *č" (op. cit.), as in:

eske- ~ edke- "to cut". SH etke-, HY etke-, Muq hečkeksen ~ ečkeksen, TTPM -, TTMM edke-. Poppe proposed an evolvement eske < ečke, while Nugteren suggested a development from *peǰke- (MPQGL 351).

In my opinion it is rather unlikely that an affricate was tolerated in coda in Proto-Mongolic, which was also suggested by Poppe (VGAS 40) and Svantesson (2005 124) et.al.

One could rather conceive here a development, which was also proposed by Poppe

for some Buryat words (Poppe IMCS 114), like: Alar Bur.: sasa- "to strew, to strow" < *čaču- < sаču-, cf. Khal цацах ~ сацах id. This development could also take place through palatalization: s > š > č that would be supported by *Darkhat,* a special Mo dialect, spoken in Khöwsgöl county, which is basically a mixture of Oirat, Khalkha and Buryat dialects, but very likely originated from a West-Mongolic vernacular. In Darkhat we may observe an alternation of š ~ č (Gaspar, 2006: 24) as:

> Darkh čawăr "mud", Khal šawăr, Kalm šawr, Bur šabar, WM sibar;
> Darkh čin "new", Khal šin, Kalm šin, Bur šene, WM sine;
> Darkh čubūŋ "bird", Kh. šuwū, Kalm šowūn, Bur šubuu(n), WM sibaɣun.

Summarizing the above, č appears to be a secondary development, and reflects an original s, which is also supported by the fact that this process also affected s in onset, cf. *čaču- ~ saču-.

Some more examples of coda s ~ d:

> **deled**- ~ deles- "to strike, beat, knock". Tung: only debi- / dele-, SH delet-, HY delet-, Muq delet-, TTPM delde-, TTMM delde-, Kalm delde-, Ord delde-, Bur delde-.

Nugteren proposed a Proto-Mongol root *deleǰ- (MPQGL 315), such a development is however not confirmed by other examples. Nevertheless, it can be a formation from dele- ~ debi- "to wave, flap, to fan", where the final -d here might be the trace of the old frequentative suffix -d (Poppe, IMCS: 274).

> **ödke** "a thick substance that settles at the bottom of a container of liquid such as fermented milk or milk", ödken ~ ösken[3] "1. thick, dense 2. excrement" Tung-, SH ötken "1. deep (voice), 2. uncut (meat)", HY-, Muq ötken, TTMM ödken, Kalm ötkn, Bur üdxe(n) ~ üsxen.

Supposing a relationship with ötüg "dung" would not be far-fetched (MPQGL 477), the Turkic relation with *ötük "diarrhoea" < *öt- (EDT 51) must be investigated further. The second syllable -GA(n) could be a suffix analogously as singgen "thin, sparse", neither of these roots are attested individually, though. udqa "meaning, sense, shamanic tradition, origin of a shaman" cf. with udum "tradition" (Poppe, IMCS: 109) cf. also iduɣan, uduɣan "shamaness". SH-, HY-, Muq-, TTPM-, TTMM udqa, Kalm utxa "reason, meaning, thought", Bur udxa "essence, spirit, substance, origin", Ord udxa "sense, meaning".

Tung: only the various form of "shamaness" are attested: Ev idakan, idakon, Solon odovan, Negidal odowan, odoɣan (Doerfer, MT: 47)

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[3]   Nugteren proposed *hödken (MPQGL 470) based on the Eastern-Yugur form, it is however not confirmed by the MMo monuments.

Ramstedt (KW 452) supposed an archaic form *usqa and compared it with Tu *us* "intelligence" and *us-* "to think, suppose". (EDT 240-241). If these forms are indeed cognates, then the direction of borrowing should rather be Mo > Tu, since Tu s was always copied regularly in its original form, e.g. Tu kesek "a piece (cut off from something)" > Mo kesig "part, section", Tu arslan "lion" > Mo arslan id. (The other direction Tu us > Mo *uθ > us ~ ud seems less likely, at least not supported by other regular correspondences.)

The role of the suffix -GA is complicated, since there are multiple homophone suffixes of this form, e.g. Den.N. diminutive -GA(n) as in unaγan "newborn foal" (Poppe 1973 225), but also Dev.N. -GA(n) as in uqaγan "wit, intellect" <- uqa- "to understand", ulaγan "red" <- *ula-. -qa in udqa can be a third suffix, but also an allomorph or rather an orthographic variant of the previous.

> **ded** ~ des "the following, next". Tung-, SH-, HY, TTPM-, TTMM ded "second" (ded köbegün), Muq-The root is obscure, a relationship with *da "two, second" cf. daγa- "to follow" would be interesting. Acc. to Poppe it was used as ordinal number "second" in CM (IMCS 248).

> **dad**- ~ das- "to get used / accustomed to". Tung-, SH daduqsan, HY-, TTPM-, TTMM daduγsan, Muq-, Bur dadaxa, Kalm dad- ~ das-.

> **naγad**- ~ naγas- "to play". Nomenverbum (Kara, 1997: 158). Tung-, SH-, HY na'adun, TTPM -, TTMM naγad-, Muq na:tba, Bur naadaxa, Kalm nād, Ord nād- ~ nās-.

Uncertain

There are quite a few ambiguous cases, where the syllable ending in -d needs further investigations:

> **čad**- "to become saturated, filled". Tung-, SH cattala (6808), cadumui (6812), HY čat-ba, Muq catba, catqulan, TTPM čadu'a:su, TTMM čadbasu, čadquyi, čadtala, Kalm cadᵃxa, catxa "get fed up", Bur sadaxa "to fill up, staurate".

Ramstedt noted also a version with -s: čas-, it is however not clear where it was attested (KW 423). It might belong to the same group of Den.V. -dA, though we could not trace either the root *ča or other derivatives in the available sources. It is to be examined, whether čangγa- "to become thirsty" belongs here.

> **γud** "down(side)". Not attested standalone either in the MMo records or in the Mo dialects, only its derivatives, e.g. γuduyi- "to bend, incline, lower", Bur гудыха "to incline", thus γud might be a back formation. It has a velar pair güdüyi- "to protrude, jut out", which suggests, that these verbs belong to the abundant family of onomatopoeia.

abad "right away, immediately", also an intensifier of negatives (L): "not at all, absolutely not". Not attested either in the MMo records, or in the Mo dialects.

naǰid "pain, suffering" and noǰid "mocking, harm". Not attested in MMo and in the current dialects. Considering the two similar forms with a slight semantic difference, one might think here of a borrowing, probably as Buddhist terminology.

sid "hazelnut". Likely a plural form, in some plant and animal names the original singular is not attested any more, cf. γoγod "wild onion" < γoγosun (Poppe, 1981: 388).

Basic Mongolian Words

Apparently the most archaic Mo words did not have alveolar stops in coda position, the only exception is od- "to go".

Below the relevant words from the Leipzig–Jakarta list:

sidün "tooth" and nidü(n) "eye", modu(n) "tree", hodun "star": see chapter Collective plural -d(Un) ~ -s(Un).

qada(n) "rock" ~ Tu kaya "rock" < *kada (?). The relationship with Tu kaya "rock" < *kada was questioned by Doerfer stating that "[...] there is not sound law mo. d = tü. y." (TMN 1/393) and recently by Erdal as well (Erdal, 2019). Clauson accepts the theory that kaya goes back to *kada (EDT 674), and indeed it is supported by other word pairs, too, e.g. Tu yal ~ Mo del "mane" (also proposed by Doerfer later), Mo dal(d) "hidden, concealed, secret" ~ Tu yaš- or Mo daqu "furcoat" ~ Tu yaku "raincoat".

öndegen "egg" probably önde + suffix -gen, mede- "to know" (Tung: Evenki mede- "to feel" Solon mede- "to know, find out", Even med- "to feel" etc.), ide- "to eat", kündü "heavy".

Other presumably ancient words: bodo- "to think", sülde "deity, soul, flag", anda- "to mistake", üde- "to see off, show off", kidu- "to kill" see also Shimunek (Shimunek, 2017: 150), qurdun "speed", ǰegüdün "dream".

Exception: od- "to go". Shimunek reconstructed Tawg *ɦɔr "to go" (Shimunek, 2017: 142), and stated that intervocalic -d- became rhotacized, which would mean that the oldest known form, namely Serbi-Mongolic, was *odV.

Conclusion

The above analysis gives a relatively clear picture regarding the situation of -d as

coda. In most cases, where this consonant stands in auslaut position, it originates from:

- a suffix, some of which are apparently later inventions,
- a hypothetical spirant *θ ~ *ð,
- a loan word,
- an onomatopoeia.

It is very striking, that in most of the cases there is an -s variant, even in onomatopoeic words, which strongly suggests, that -d and -s had a common ancestor, while in later stages this alternation was applied to form semantical variants. Regarding the basic Mongolic vocabulary, we have only found the verb *od-* that contradicts our assumption, however even this example might go back to an ancient form of VCV.

It is to be emphasized, that the above analysis is far from being comprehensive, nevertheless it reflects the typical tendencies that determine the origin of alveolar stop -d as coda in Mongolic languages.

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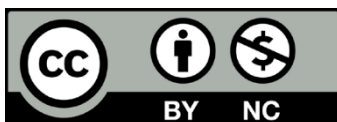
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