# RESULTATIVES IN MONGOLIAN: BETWEEN JAPANESE AND KOREAN?[*]

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## 1. Introduction

Mongolian uses the *-tAl* Converb construction to express resultative interpretations. In this paper we investigate the syntactic structure of Mongolian resultatives, focusing on the status and position of *-tAl* phrases. Washio (2002) noted that the *-tAl* Converb construction looks very much on the surface like the Korean *-key* resultative. Our investigation of Mongolian shows that the *-tAl* resultative phrases take a TP adjunct structure which in fact lines up in important ways with the study of Korean by Sells (1998) and Shim & den Dikken (2007). Canonical Mongolian resultative sentences are shown in (1).

(1)  a. *John     ene     metal-ig      havtgai      bol-tol      davt-san.*
        John     this    metal-ACC     flat(A)      become-CVB   hammer-PST
        "John hammered the metal flat."
     b. *John     ene     shal-ig      gyalalz-tal      ugaa-san.*
        John     this    floor-ACC    glitter(V)-CVB   wash-PST
        "John washed the floor, as a result it became glittering."

(1a,b) show that there are two strategies to express the resultative interpretation in Mongolian. In (1a) *havtgai* 'flat' is an adjective, which goes with *bol-tol* 'become-CVB' to express the resultant

state of the sentence. In (1b) *gyalalz-* 'glitter' is a verb, which directly combines with *-tAl* 'CVB' to express the resultant state of the sentence. Thus, the two strategies for resultatives can be schematically described as "Adj become-*tAl*" and "V-*tAl*"; adjectives always need *bol-* 'become' and verbs cannot co-occur with *bol-* 'become'. The difference between the "Adj become-*tAl*" and "V-*tAl*" is that the former carries a stronger intention than the latter. However, there is no structural difference at all, which we will show in the next section.

By analysing the sentences (1a,b) syntactically and semantically, we will conclude that the Mongolian *-tAl* resultatives take the structure (2). "SP" stands for secondary predicate (it is either "Adj + become" or "V"), and […]* means the bracketed clause can occur recursively.

(2)        [Syntactic Structure of Mongolian resultative construction]
           SUBJ    (NP$_1$-ACC)   [$_{TP}$ (NP$_2$-NOM)   (NP$_3$-ACC)   SP-*tAl*]*   V

The structure in (2) means that the resultative phrase "SP-*tAl*" can take optional notional subject and object arguments (NP$_2$-NOM and NP$_3$-ACC) inside its clause. The clause which contains the secondary predicate is categorised as TP. This TP clause is an adjunct element, adjoined to VP, which can occur recursively in the sentence.[1] The presence of NP$_1$-ACC is due to the transitivity of the main verb; an intransitive main verb cannot host NP$_1$-ACC; a transitive main verb may or may not have NP$_1$-ACC, for when NP$_2$-NOM exists, NP$_1$-ACC does not need to exist. In this case NP$_1$-ACC seems to be pragmatically reconstructed because NP$_1$-ACC and NP$_2$-NOM are always in a whole-part relation. This will also be shown with syntactic tests later on.

Before going into the main argument, let us here explain some terminologies we use in this paper, as some of them are not so common outside the Mongolian context. The term "Converb" (CVB) is originally named by Mongolian grammarians. There are about 20 CVBs. Each of them has some meanings. The CVB which appear in the resultative constructions is *-tAl*, which may be realised as *-tal/-tel/-tol/-töl* because of the vowel harmony. All CVBs, including *-tAl*, attach only with verbs. "Reflexive possessive" (REFL.POSS) marker *-AA* contains both properties of the accusative case marker *-ig* and possessive meaning. A noun with the reflexive possessive marker agrees only with the subject argument. *-AA* can be realised as *-aa/-oo/-ee/-öö* because of the vowel harmony. There are also second person (2.poss) *chin'* and third person markers (3.POSS) *n'*. These markers are not morphemes but independent particles. They are both co-referent only with non-subject arguments. The particle *bol* has the meaning of either subject or/and contrastive topic marker (SM/CT). These terms are laid out in table (3).

(3)        *-tAl (-tal/-tel/-tol/-töl)*:  Converb (CVB); attaches only with verb
           *-AA (-aa/-oo/-ee/-öö)*:  Reflexive Possessive (REFL.POSS); co-referent only with
                                        SUBJ, contains the meaning of accusative case marker,
                                        if there is no other case marker.
           *-(i)g*:                  Accusative case marker (ACC)
           *chin'*:                  2$^{nd}$ person marker (2.POSS); co-referent only with non-SUBJ
           *n'*:                     3$^{rd}$ person marker (3.POSS); co-referent only with non-SUBJ
           *bol*:                    Subject/Contrastive Topic marker (SM/CT)

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[1] The definition of "resultative" construction is not crystal-clear. If one believes that the "resultative" construction has to have a complement structure, then there is no real "resultative" in Mongolian. However as will be shown in section 2, the sentences (1a,b) with the structure of (2) seem to carry the properties which should qualify the constructions (1a,b) as resultative.

We here present the structure of this paper. Section 2 shows the syntactic and semantic tests, which support our proposal illustrated in (2). As there has not been much research on Mongolian secondary predicates, we will show as many language facts as possible in this section. Section 3 briefly shows Japanese and Korean resultatives and discusses whether Mongolian resembles Japanese or Korean. Section 4 summarises the whole paper.

# 2.   Syntactic and Semantic Tests of Mongolian Resultatives

In 2.1 we firstly claim that the Mongolian *-tAl* Converb examples in (1a,b) represent an object-oriented resultative showing that they have the typical characteristics of the resultatives; a) accomplishment interpretation: (1a,b) are compatible with *10 minutin dotor* 'in 10mins.' but not with *10 minutin tursh* 'for 10mins.'; b) the *-tAl* Converb phrases are inside VP, which can be proved by pseudo-clefting and do-so replacement; c) the resultative predicate *havtgai/gyalalz-* 'flat/glitter' cannot be replaced with their antonym counterparts. Secondly in 2.2, we will claim that Mongolian *-tAl* phrases take a TP adjunct form rather than a complement structure by showing several tests: a) additional nominative-marked NP in the *-tAl* clause: suggesting that *-tAl* clause always forms an eventive TP clause: b) the *-tAl* resultative clause can even take its notional object argument (NP$_3$-ACC of (2)) as well as the object argument of the main verb (NP$_1$-ACC of (2)) at the same time, suggesting that there is an embedded clause: c) there can be more than one resultative clause: d) there seems to be aspect in the clause of the *-tAl* resultative phrase, namely *inchoative*, which is always dependent on T, suggesting that the clause of the *-tAl* resultative phrase is TP.

## 2.1   Mongolian *-tAl* Resultatives Have Typical Resultative Properties

First, the aspectual structure of the resultative construction is examined. As many linguists including Dowty (1979) have stated, telic verbs or events have been by definition called resultatives. Examples (4) and (5) illustrate the *10 minutin dotor* 'in 10 minutes' and *10 minutin tursh* 'for 10 minutes' tests. The former is compatible with telic events, but the latter is not. Mongolian *-tAl* Converb constructions seem to be telic and are expected to be compatible only with 'in 10 minutes'.

(4)      [In & for 10 minutes test with (1a)]
      a. *John   ene   metal-ig   **10 minut-in**   **dotor**   havtgai*
         John   this   metal-ACC   10 minute-GEN   within   flat(A)
         *bol-tol   davt-san.*
         become-CVB   hammer-PST
         "John hammered the metal flat in 10 minutes."
      b. *\*John   ene   metal-ig   **10 minut-in**   **tursh**   havtgai*
         John   this   metal-ACC   10 minute-GEN   for   flat(A)
         *bol-tol   davt-san.*
         become-CVB   hammer-PST
         "John hammered the metal flat for 10 minutes."

(5)      [In & for 10 minutes test with (1b)]
   a. *John     ene    shal-ig     **10 minut-in     dotor**    gyalalz-tal     ugaa-san.*
      John    this   floor-ACC   10 minute-GEN    within    glitter(V)-CVB   wash-PST
      "John washed the floor shiny in 10 minutes."
   b. **John     ene     shal-ig     **10 minut-in     tursh**    gyalalz-tal     ugaa-san.*
      John    this    floor-ACC   10 minute-GEN    for      glitter(V)-CVB   wash-PST
      "John washed the floor shiny for 10 minutes."

Second, the syntactic position of the *-tAl* phrase is investigated. Roberts (1988) showed that the English resultative predicate stays inside VP with such syntactic tests as pseudo-cleft, do-so replacement, tough movement and VP preposing, which are all well-known tests to detect what a VP contains. Here we use pseudo-cleft and do-so replacement, where the former targets the whole VP and the latter the lower elements within VP (pseudo-clefting does not target the adjuncts adjoined to VP). These two tests show that *-tAl* phrases are indeed inside VP.

(6)      [Pseudo-cleft with (1a)]
   a. *John-in     hii-sen     yum     bol     **ene     metal-ig     havtgai***
      John-GEN   do-PST      matter   SM      this    metal-ACC   flat(A)
      ***bol-tol          davt-ah**.*
      become-CVB        hammer-INF
      "What John did was to hammer this metal flat."
   b. **John-in     havtgai      bol-tol      hii-sen     yum     bol*
      John-GEN   flat(A)       become-CVB   do-PST     matter   SM
      ***ene     metal-ig     davt-ah**.*
      this     metal-ACC   hammer-INF
      Int: "What John did flat was to hammer this metal."

(7)      [Pseudo-cleft with (1b)]
   a. *John-in     hii-sen     yum     bol     **ene shal-ig     gyalalz-tal     ugaa-h**.*
      John-GEN   do-PST      matter   SM      this floor-ACC   glitter(V)-CVB   wash-INF
      "What John did was to wash the floor glittering."
   b. **John-in     gyalalz-tal      hii-sen     yum     bol     **ene shal-ig     ugaa-h**.*
      John-GEN   glitter(V)-CVB   do-PST     matter   SM      this floor-ACC   wash-INF
      Int: "What John did glittering was to wash the floor."

(8)      [do-so replacementwith (1a)]
   a. *John     **ene     metal-ig     havtgai     bol-tol      davt-san**     ba*
      John    this    metal-ACC   flat(A)      become-CVB   hammer-PST   and
      *Mary     ch bas      **teg-sen**.*
      Mary     also       do.so-PST
      "John hammered this metal flat and Mary also did so."
   b. **John     **ene     metal-ig**     havtgai     bol-tol      **davt-san**     ba*
      John    this    metal-ACC   flat(A)      become-CVB   hammer-PST   and
      *Mary ch bas     **nimgen     bol-tol      teg-sen**.*
      Mary also         thin(A)     become-CVB   do.so-PST
      "John hammered this metal flat and Mary also did so thin."

(9)  [do-so replacementwith (1b)]

 a. *John*    *ene*    *shal-ig*    *gyalalz-tal*    *ugaa-san*    *ba*
    John    this    floor-ACC    glitter(V)-CVB    wash-PST    and
    *Mary*    *ch bas*    *teg-sen*.
    Mary    also    do.so-PST
    "John washed the floor glittering and Mary also did so."

 b. *\*John*    *ene*    *shal-ig*    *gyalalz-tal*    *ugaa-san*    *ba*
    John    this    floor-ACC    glitter(V)-CVB    wash-PST    and
    *Mary*    *ch bas*    *tsagaan*    *bol-tol*    *teg-sen.*
    Mary    also    white(A)    become-CVB    do.so-PST
    "John washed the floor glittering and Mary also did so white."

(8) and (9) above show that the resultative phrases are lower than VP; in other words, inside V'. That is, they are either adjuncts adjoined to V' or complements forming a secondary predication with the accusative marked nouns. In 2.2 we will show evidence that they are actually adjuncts of V'.

Third, as for another typical characteristic of a real resultative construction, we will show that only one of the antonym pairs qualifies as a resultative predicate in a resultative sentence, for the resultative predicate expresses an ending state which is related to the meaning of the main verb. This is shown in (10a,b). And (10c) is not a resultative; it allows both *tight* and *loose*. Not only in Mongolian but in English and Japanese, the (10c) type is not a real resultative because it is not the whole *shoelace* which becomes tight or loose; what is tight or loose is the point where the tie is made. It is similar to the example "John opened the window wide." It is not the *window* which becomes wide (the size of the window does not change). These fake resultatives, called "spurious resultative" by Washio (2002), typically allow either word of an antonym pair as a resultative predicate in a given example. In Mongolian, there is a morphological difference between the canonical resultative predicate and the spurious resultative predicate; the latter is morphologically adverbial; in (10c), *changa/sul* 'tight/loose' is adverb, and there is no *-tAl* phrase in sentence (10).

(10)  a. *John*    *ene*    *zonh-ig*    *zeverhen/\*bohir*    *bol-tol*    *arch-san.*
        John    this    window-ACC    clean / dirty    become-CVB wipe-PST
        "John wiped this window clean/\*dirty."

     b. *John*    *ene*    *nohoi-g*    *üh-tel / \*amid*    *bai-tal*    *zod-son.*
        John    this    dog-ACC    die-CVB /alive    be-CVB    beat-PST
        "John beat this dog dead/\*alive."

     c. <spurious resultative>
        *John*    *ene*  *gutl-in*    *üdees-ig*    *changa /sul*    *üdsen.*
        John    this  shoe-GEN    laces-ACC    tight/loose(Adv)    tie-PST
        "John tied this shoelaces tight/loose."

So far we have observed the syntactic and semantic properties of the *-tAl* resultative phrases; they are the accomplishment type, inside VP, different from morphologically adverbial type shown in (10c) in that they do not allow an antonym counterpart. In the next sub-section 2.2, we will investigate the size of the *-tAl* resultative clause.

## 2.2   Status of *-tAl* Resultative Clause

In order to determine the status of the *-tAl* clause, we will start with some sentences which have additional NPs on top of the canonical resultative sentence. Examples are given in (11a',b'). (1a,b) are repeated in (11a,b). Compare (11a,b) with (11a',b') respectively.

(11)     [Additional NPs to the Canonical Resultative Sentences]
 a. *John     ene     metal-ig     [havtgai     bol-tol]          davt-san.*
    John     this     metal-ACC    flat(A)      become-CVB        hammer-PST
    "John hammered the metal flat."
 a' *John     ene     metal-ig     [**helber  n'**     havtgai bol-tol]          davt-san.*
    John     this     metal-ACC    shape   3.POSS    flat(A)  become-CVB        hammer-PST
    "John hammered the metal, as a result its shape became flat."
 b. *John     ene     shal-ig      [gyalalz-tal]      ugaa-san.*
    John     this     floor-ACC    glitter(V)-CVB     wash-PST
    "John washed the floor shiny."
 b'. *John    ene     shal-ig      [**öngö**         **n'**      gyalalz-tal]      ugaa-san.*
    John     this     floor-ACC    colour          3.POSS     glitter(V)-CVB    wash-PST
    "John washed the floor, as a result its colour became glittering."

As can be seen in the pairs of (11a,a') or (11b,b'), an additional NP-NOM can appear as a real subject of the secondary predicate in the *-tAl* embedded clause. This nominative case has to be assigned by the local T. Thus this data strongly supports that the embedded clause is a TP clause. In (11a',b'), the NP-ACC and NP-NOM are in the part-whole relation; that is, the NP-NOM must be a part of the NP-ACC. Thus, it is always possible to change the construction of (11a',b') into the construction with a genitive-marked NP as in (12). Example sentences are given in (13).

(12)     [Alternation between "NP$_1$-ACC NP$_2$-NOM" and "NP$_1$-GEN NP$_2$-NOM"]
 a. Subj  NP$_1$-ACC  [$_{TP}$ NP$_2$-NOM  SP-*tAl*]   V
                              ↓ ↑
 b. Subj  [$_{TP}$ NP$_1$-GEN  NP$_2$-NOM  SP-*tAl*]   V

(13)     [Examples with the "NP$_1$-GEN NP$_2$-NOM" scheme]
 a. *John  [ene     metal-in      helber     n'      havtgai bol-tol]          davt-san.*
    John     this    metal-GEN     shape      3.POSS  flat(A)  become-CVB       hammer-PST
    "John hammered the metal, as a result its shape became flat."
 b. *John  [ene     shal-ni       öngö      n'      gyalalz-tal]               ugaa-san.*
    John     this    floor-GEN     colour    3.POSS  glitter(V)-CVB             wash-PST
    "John washed the floor, as a result its colour became glittering."

In (13), the nouns in the part-whole relation are connected with the genitive case marker. However, importantly there is no double nominative construction in Mongolian, which also brings about the part-whole relation between two nouns; that is, in some languages such as Japanese and Korean, which allow double nominative construction, the "NP$_1$-NOM NP$_2$-NOM" sequence is possible to give a meaning of "NP$_1$-GEN NP$_2$-NOM", where NP$_1$ and NP$_2$ are in a strict part-whole relation. This is indeed an important point because in the Korean double

nominative construction, the second nominative case is claimed to be assigned not by the local T-head but by the predicate itself as an inherent case (Yoon 1996, Moon 2000); the embedded clause does not need to be TP. In Mongolian, there is no double nominative construction as in (14), and this is why, the second nominative case must be assigned by the local T-head, implying that the embedded clause is TP.

(14)        [No Double Nominative Construction in Mongolian]
   a. ***Ene    metal  helber n'     havtgai        bai-na.***
      this        metal   shape   3.POSS flat(A)            be-PRS
      Int. "The metal's shape is flat."
   b. ***Ene     shiree gadarguu     n'     zeverhen      bai-na.***
      this        table   surface         3.POSS clean              be-PRS
      Int. "The table's surface is clean."
   c. **John [ene metal       helber      n'     havtgai bol-tol]      davt-san.*
      John   this   metal:NOM   shape:NOM 3.POSS   flat(A)   become-CVB   hammer-PST
      "John hammered the metal, as a result its shape became flat."
   d. **John [ene shal      öngö          n'      gyalalz-tal]    ugaa-san.*
      John   this   floor:NOM   colour:NOM       3.POSS   glitter(V)-CVB   wash-PST
      "John washed the floor, as a result its colour became glittering."
   e. *John   ene   metal-ig     **[helber-ig    n'      havtgai bol-tol]      davt-san.***
      John   this   metal-ACC   shape-ACC   3.POSS   flat(A)   become-CVB hammer-PST
      "John hammered the metal, as a result its form became shape."
   f. *John   ene   shal-ig     **[öng-ig        n'      gyalalz-tal]    ugaa-san.***
      John   this   floor-ACC   colour-ACC       3.POSS   glitter(V)-CVB   wash-PST
      "John washed the floor, as a result its colour became glittering."

   (14a,b) simply show that there is no double nominative construction in Mongolian. Hence (14c,d) are also ungrammatical in Mongolian. Interestingly, (14e,f) are grammatical in Mongolian. Mongolian has a Differential Subject Marking (DSM) system, proposed by Guntsetseg (2010) and von Heusinger, Klein and Guntsetseg (2011), which allows the embedded subject to be marked with accusative case. Thus, (14e,f) correspond to (11a',b'), where the case markers of the embedded subject gives the distinction in between them. All the Korean counterparts of (14a-f) are grammatical. Those like (14c,d) are the case of double nominative construction which Korean famously allows. And those of (14e,f) are the case where both nominative-marked NPs of the embedded clause in (14c,d) raised to the matrix clause. This will be briefly reviewed in section 3. Here, we emphasise again that Mongolian does not allow the double nominative construction as seen in (14a-d), and therefore, the nominative case of the NP$_2$ in (12) has to be assigned by the local T-head, the *-tAl* embedded clause is TP.
   The data in (15) shows that the secondary predicate can be verbal in Mongolian but not in English. Guéron & Hoekstra (1995) explained the ungrammaticality of English sentence (15c) as lack of T in the English secondary predicates, for a verb must always be licensed by a local T-head. Shim & den Dikken (2007) also stated that 'for every verb there must be a tense', introducing Korean resultative data with an additional NP-ACC inside the resultative clause like (15a,b). Thus, the grammaticality of (15a,b) also supports that Mongolian *-tAl* clause forms TP.

(15)        [Additional NPs to the Canonical Resultative Sentences]
    a. *Ene    nohoi  ter    muur-ig  [ene  hulgan-ig  ald-tal]     haz -san.*
       this    dog    that   cat-ACC  this  mouse-ACC  loose-CVB    bite-PAST
       "The dog bit that cat so that it lost this mouse."
    b. *John   ene    zagdaa-g   [ter  heregtn-ig  ald-tal ]    tsoh'-son.*
       John   this   police-ACC  that  criminal-ACC loose-CVB   kick-PAST
       "John kicked this policeman as a result he lost  that criminal."
    c. [English]    *The dog bit the cat miss the mouse.

(16) shows that the *-tAl* clause can appear more than twice in a sentence. Note that between the two brackets "[    ]" of each clause in (16), there is no need of a pause. When these two phrases "[   ]" are replaced with manner adverbs such as *slowly* and *strongly* (e.g. in (16a) "John hammered the metal slowly strongly."), native speakers read the two manner adverbs as smoothly as these two phrases "[   ]" in each of (16a,b). This data suggests that these two clauses are not in a coordinate relationship but each clause is adjoined to VP as an adjunct separately.

(16)        [Two *-tAl* clauses in a sentence]
    a. *John    ene    metal-ig       [helber       n'       havtgai     bol-tol]*
       John    this   metal-acc       shape        3.POSS   flat(A)     become-CVB
       *[ öngö        n'      aril-tal]             davt-san.*
         colour      3.POSS  delete- CVB           hammer-PST
       "John hammered the metal as a result its shape became flat and its colour got deleted."
    b. *John    [hooloi-goo         söö-töl]        [biy-ee         yadar-tal]*
       John    throat-REFL.POSS    hoarse(V)-CVB   body-REFL.POSS   tired(V)-CVB
       *hashgir-san.*
       shout-PST
       "John shouted so that his throat became hoarse and his body became tired."

Further supporting arguments for the TP adjunct analysis can be observed in (17). (1a,b) are repeated in (17a,b). Compare (17a,b) with (17a',b') respectively.

(17)        [Case of NPs]
    a. *John    ene    metal-ig       [havtgai    bol-tol]     davt-san.*
       John    this   metal-ACC      flat(A)    become-CVB   hammer-PST
       "John hammered the metal flat."
    a' *John    [ene    metal        havtgai    bol-tol]     davt-san.*
       John    this   metal:NOM     flat(A)    become-CVB   hammer-PST
       "John hammered, so that the metal became flat."
    b. *John    ene    shal-ig       [gyalalz-tal]      ugaa-san.*
       John    this   floor-ACC      glitter(V)-CVB     wash-PST
       "John washed the floor, as a result it became glittering."
    b'. *John    [ene    shal         gyalalz-tal]      ugaa-san.*
       John    this   floor:NOM      glitter(V)-CVB     wash-PST
       "John washed, so that the floor became glittering."

Interestingly, (17a',b') are both grammatical, although the main verbs are transitive and there is no object (accusative marked NP) in (17a',b'). There seem to be two reasons that the (17a', b') are grammatical: first, the embedded *-tAl* clause is TP, so the nominative case is successfully assigned to the nouns *metal/shal* 'metal/floor'; second, the object of the verb can be easily reconstructed in the pragmatic domain, because the object of the main verb and the subject of the embedded clause are in a part-whole relation, as mentioned with the examples in (11). Indeed, in (17a',b') it is possible to have a reading that *John actually hammered/washed something else on/around the metal/floor, so that the metal/floor became flat/glittering*. This fact corresponds with the native speakers' intuition that (17a,b) are more "intentional" than (17a',b'), and they normal use (17a,b) rather than (17a',b'); it is because when they make something flat/clean by hammering/washing, they normally directly hammer/wash the entity they want to make flat/clean.

The next several examples illustrate scrambling. (18a,b) show the clear bi-clausal sentence in Mongolian, showing that scrambling the embedded subject to outside its clause causes ungrammaticality. The data in (20) to (22) support our proposal shown in (2). (2) is repeated in (19).

(18)    [Impossible to Scramble the Embedded Subject to outside its Clause]
    a. *John*    *[geds-ee*                  *düür-tel]*          *us*        *uu-san.*
        John     stomach-REFL.POSS        full(V)-CVB         water      drink-PST
        "John drank water to make his stomach full."
    b. **John*    *[t_i*    *düür-tel]*        *us*       *geds_i-ee*                *uu-san.*
        John     full(V)-CVB       water     stomach-REFL.POSS       drink-PST

(19)    [Syntactic Structure of Mongolian Resultative Construction]   (=(2))
    SUBJ    (NP$_1$-ACC)  [$_{TP}$ (NP$_2$-NOM)  (NP$_3$-ACC)  SP-*tAl*]\*  V

(20)    [Scrambled Sentences of (1a,b)]
    a. *John*        *t_i*      *[havtgai*    *bol-tol]*        *metal-aa_i*           *davt-san.*
        John                flat(A)       become-CVB       metal-REFL.POSS   hammer-PST
        "John hammered the metal flat."
    b. *John*        *t_i*      *[gyalalz-tal]*        *shal-aa_i*           *ugaa-san.*
        John                glitter(V)-CVB        floor-REFL.POSS   wash-PST
        "John washed the floor, as a result it became glittering."

(21)    [Scrambled Sentences of (14a',b')]
    a. **John*       *[t_i*    *havtgai*    *bol-tol]*        *ene*   *metal_i*        *davt-san.*
        John               flat(A)       become-CVB       this   metal:NOM     hammer-PST
        "John hammered, so that the metal flat."
    b. **John*       *[t_i*              *gyalalz-tal]*        *ene*   *shal*          *ugaa-san.*
        John                        glitter(V)-CVB        this   floor:NOM     wash-PST
        "John washed, so that this floor became glittering."

(22)  a. *John*    *[hooloi-goo*                    *söö-töl]*              *hashgir-san.*
        John     throat-REFL.POSS                hoarse(V)-CVB          shout-PST
        "John shouted until / (to the degree that) his voice became hoarse."

     b. *\*John    [t$_i$    söö-töl]    **hooloi$_i$-goo**    hashgir-san.*
        John               hoarse(V)-CVB    throat-REFL.POSS    shout-PST

The structure of (2)/(19) predicts that NP$_1$-ACC can be scrambled to the outside the position preceding the main verb but NP$_2$-NOM or NP$_3$-ACC cannot. In fact, (20) shows that NP$_1$-ACC, which is *metal-aa* 'metal-REFL.POSS', can be scrambled to the position preceding the main verb.[2] In (21) the subjects of the embedded clause cannot be scrambled to the position preceding the main verb unlike the case of (20). (22) represents the case of DSM like (14e,f); the NP *hooloi-goo* 'throat-RELF.POSS' is the embedded accusative marked subject, for the main verb *hashgir-san* 'shout-PST' is intransitive, and thus *hooloi-goo* 'throat-RELF.POSS' is not the object of the main verb. This is why the scrambling operation in (22) fails.

    The final supporting argument for our TP adjunct analysis comes from the existence of aspect INCHOATIVE expressed with *bol-* 'become' in the *-tAl* embedded clause. Look at the example (23).

(23)       [Morphological Structure of *-tAl* Phrase]
            *John ene metal-ig   {havtgai **bol**-tol/\*havtgai/\*havtgai bai-tal}  davt-san.*
            John this metal-ACC   flat(A) become-CVB/flat/flat be-CVB       hammer-PST
            "John hammered the metal flat."

(23) suggests that when adjective is used as a part of the *-tAl* phrase there has to be *bol-* 'become' with it, which implies that there is a projection for aspect immediately outside the lexical projection of the resultative secondary predicate.[3] Aspect has a close connection with tense. Guéron & Hoekstra (1995) regarded aspect as a dependent tense. They stated that the aspect is a tensed form not directly bound by a T-operator; its T-node is not deictically interpreted via a T-operator which directly links it to a referential domain, but instead is dependent, relating the event of its verbal base to a non-deictic anchor. Shim & den Dikken (2008) supported this argument with Korean data, claiming that the presence of the Korean aspect *-ci* 'become/INCHOATIVE' within the resultative phrase signals the presence of a T-node local to the resultative predicate; not a deictic tense but a dependent tense (dependent on the matrix tense). We here regard that *bol-* 'become' plays a double role in Mongolian resultative sentences: first, it makes it possible for an adjective word to connect with the converb *-tAl*, since CVBs can attach only to verbs (however this is not the only reason that *bol-* 'become' is obligatory in the resultative sentences, because as seen in (23) *havtgai bai-tal* 'flat be-CVB' does not fit in this sentence though *bai-* 'be' successfully makes the adjective possible to attach with the CVB), and second, it plays the role of the dependent tense of the embedded clause (dependent to the tense of the main verb). Thus the presence of the *bol-* 'become' seems to support the claim that the *-tAl* embedded phrase in Mongolian forms a TP clause.

    By the way, we strongly believe that true resultatives, which take a complement type structure, do not allow subject oriented resultatives at all. Thus, we assume that English, Japanese, etc. do not have the subject oriented resultative construction, and their resultatives strictly abide the Simpson's (1983) Double Object Restriction (DOR). However, Mongolian "resultatives" have an adjunct structure as discussed above; they are not the real complement

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[2] As already noted in section 1, "REFL.POSS" can contain the function of -ACC.
[3] Washio (1999, 2002) stated that Middle Mongolian allowed a bare adjective to be the resultative secondary predicate, though it was not productive at all. In Modern Mongolian this is completely impossible.

type resultatives (it might be better to call the Mongolian resultatives with another name, but in the previous literature not only Mongolian resultatives but other adjunct resultatives are also simply called "resultatives".) Anyway, our Mongolian resultatives allow subject oriented resultatives, which is not a counter argument/example against Simpson's DOR. The examples of subject-oriented resultatives are given in (24).

(24)　　　[Subject Oriented Resultatives]
　　　a. *Ene  robot  [evderhii        bol-tol-oo]*　　　 *ene  mod-ig   tair-san.*
　　　　this  robot  out.of.order(A)  become-CVB-REFL.POSS  this  tree-ACC  cut-PST
　　　　"This robot cut trees so much that it became out of order."
　　　b. *Ene  robot  [evder-tel-ee]*　　　　　　 *ene   mod-ig   tair-san.*
　　　　this  robot  break.down(V)-CVB-REFL.POSS  this  tree-ACC  cut-PST
　　　　"This robot cut trees so much and it broken down."
　　　c. *\*John   huvtsas-aa_i        [zeverhen  bol-tol-oo]*　　　 *t_i   ugaa-san.*
　　　　John   clothes-REFL.POSS  clean(A)  become-CVB-REFL.POSS         wash-PST
　　　　"John washed his clothes as a result he(his hands) became clean."

The key point in (24) is that all the subject-oriented *-tAl* phrases take the reflexive possessive marker *-AA* which is always co-referent with the subject argument. Thus there are two factors which make the subject-oriented linking possible in Mongolian resultatives: first with the help of the subject-referent marker *-AA*; second, the *-tAl* clause is an (TP) adjunct which can be adjoined to different maximal projections relatively easily. As shown in (24a,b), the subject-oriented linking is possible both with '*Adj + become-tAl*' and '*V-tAl*'. The accurate syntactic position of the subject-oriented resultatives is investigate with pseudo-clefting and 'do-so' replacement tests in (25) and (26).

(25)　　　[Pseudo-clefting with Subject-oriented Resultative]
　　　a. *Ene  robot-in    hii-sen    yum    bol*　[**evderhii**
　　　　this  robot-GEN   do-PST     matter  SM   out.of.order
　　　　***bol-tol-oo***　　　　　 *mod    tair-ah*].
　　　　become-CVB-REFL.POSS    tree    cut-INF
　　　　"What this robot_i did was cut this tree broken_i."

　　　b. *Ene      robot-in       **evderhii**      **bol-tol-oo***　　　　 *hii-sen*
　　　　this      robot-GEN      out.of.order   become-CVB-REFL.POSS     do-PST
　　　　*yum    bol*   [*mod   tair-ah*].
　　　　matter  SM    tree   cut-INF
　　　　 "What this robot_i did broken_i was cut this tree."

(26)　　　['do-so' Replacement Test with Subject-oriented Resultative]
　　　a. *John sogtuu  bol-tol-oo*　　　　　 *piv     uu-san     ba   Mary  ch bas*
　　　　John drunk   become-CVB-REFL.POSS   beer    drink-PST  and  Mary  also
　　　　*teg-sen.*
　　　　do.so-PST
　　　　"John drunk beer drank, Mary also tired did-so."

b. *John sogtuu  bol-tol-oo*                          *piv*    *uu-san*    *ba*    *Mary*   *ch bas*
   John drunk   become-CVB-REFL.POSS   beer   drink-PST   and   Mary   also
   ***yadar-tal-aa***             *teg-sen.*
   **tire-CVB-REFL.POSS**   do.so-PST
   "John drunk beer drank, Mary also tired did-so."

In (25a) the resultative phrase in bold font stays inside the verb phrase, whereas in (25b) the resultative phrase is outside the verb phrase. Unlike the object-oriented resultatives the resultative phrase can be either inside or outside of the verb phrase with the pseudo-cleft construction (see (6) and (7) for the pseudo-cleft construction with the object-oriented resultatives), which suggests that the resultative phrase may be adjoined to VP or higher than that such as T'. This characteristic of the subject-oriented resultative phrase is actually typical to the subject-oriented adjuncts of some SOV languages. Koizumi (1994) stated that in Japanese the subject-oriented depictive predicate may be adjoined to VP or T'. Moreover, Mongolian subject-oriented depictive phrases also seem to behave in the same way. The 'do-so' replacement test in (26) also shows the same contrast as in (25). The *teg-sen* 'did-so' phrase does not need to replace the subject-oriented resultative phrase as in (26b), unlike the case of the object-oriented resultative phrase as in (8) and (9).

The word order in (24a,b) is canonical; unlike the object oriented resultatives, the objects *mod* 'tree' is positioned between the *-tAl* clause and the main verb. Scrambling the object argument to the position between the subject and *-tAl* clause seems to be difficult, which is shown in (27). This is likely to be a pure syntactic issue. As we assume that the subject oriented *-tAl* clause adjoins to the top vP or T' as an adjunct, there seems to be no landing site for the object argument.

(27)   c. [?/??]*John  huvtsas-aa_i*        *[zeverhen  bol-tol-**oo**]*                 $t_i$    *ugaa-san.*
        John      clothes-REFL.POSS  clean(A)    become-CVB-REFL.POSS            wash-PST
        "John washed his clothes as a result he(his hands) became clean."

Taking all the discussion into account, we propose the syntactic representation of Mongolian resultatives as in (28). In (28), there are two possible positions for the subject-oriented resultative phrase as discussed above.

(28)    [Syntactic Representation of Subject- and Object-oriented "Resultatives"]
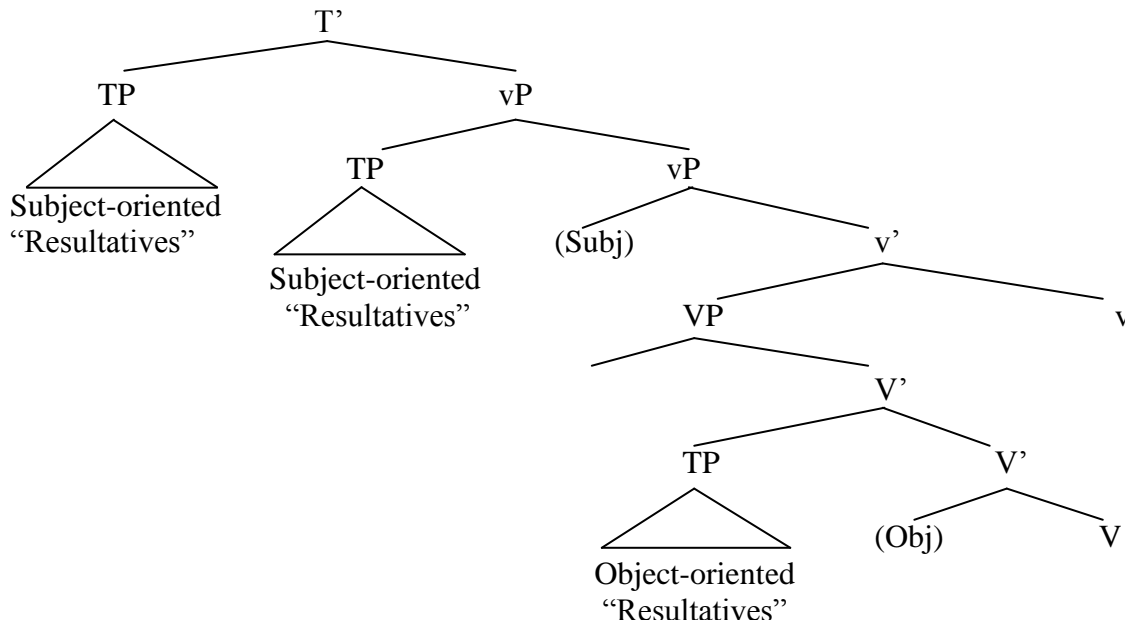


## 3. Comparison with Japanese and Korean

In this section, Mongolian resultatives are briefly compared with Japanese and Korean resultatives, focusing on the syntactic structure of resultative predicate.

Fist data is Japanese, which seems to take a complement structure like English but unlike Mongolian or Korean.

(29)    [Japanese Resultative Construction]
   a. *Taroo-ga    [SM kuruma-o    pikapika-ni]    migai-ta*
      Taroo-NOM        car-ACC      shiny-ni        polish-PAST
      "Taro polished a car into a brilliant shine."
   b. **Taroo-ga    kuruma-o    hyoomen-ga        pikapika-ni    migai-ta*
      Taroo-NOM    car-ACC     surface-NOM         shiny-ni       polish-PAST
      "Taro polished a car into a brilliant shine."
   c. *Taroo-ga    kuruma-o [TP hyoomen-ga pikapika-ni naru-yoo-ni]    migai-ta*
      Taroo-NOM    car-ACC      surface-NOM shiny-ni    become way-in polish-PAST
      "Taro polished a car into a brilliant shine."

Japanese canonical resultative construction is represented in (29a), which carries all the properties of complement-type resultatives (see Kishimoto and Kikuchi 2008). The data in (29b) also supports this argument; it is impossible to add an NP-NOM between the object and resultative secondary predicate even when the NP-NOM and NP-ACC hold the part-whole relation. This seems to be because the NP-ACC and secondary predicate form a complement structure: a small clause, which is smaller than TP (impossible to assign nominative case to the additional NP). In fact, when *naru yoo-ni* 'become way-in' is added to the resultative predicate, the whole

clause becomes TP, which makes possible to add the NP-NOM, as in (29c). This fact not only suggests that the Japanese resultative construction takes a complement structure, but also implies that Mongolian (and Korean which will be shown later) does look to take the TP adjunct structure as *bol-* 'become' in Mongolian is obligatory with the adjective secondary predicate, and NP-nom can be freely added to the resultative sentence.

On the other hand, Korean has an adjunct resultative at least when the "secondary predicate" represents "$V_{DYNAMIC}$-*key*" or "$V_{STATIVE}$-*ci-key*" ("-*ci*": 'become/INCHOATIVE'). We are not ready yet to conclude on the structure of "$V_{STATIVE}$-*key*"; it may take the complement structure as Son (2008) suggests, or the adjunct structure as den Dikken (2007) suggests; we do not conclude whether (b) or (b') is the correct analysis). Two types of Korean "resultatives" are illustrated in (30).

(30)      [Syntactic Structures of Korean "Resultative" Construction]
         a. Subj   (NP$_1$-ACC)   [$_{TP}$ (NP$_2$-NOM)   (NP$_3$-ACC)   $V_{DYNAMIC}$-*key*/$V_{STATIVE}$-*ci-key*]      V
         b. Subj    [$_{SM}$ NP$_1$-ACC                V$_{STATIVE}$-*key*]      V
      OR
         b'. Subj          NP$_1$-ACC              [$_{TP}$ V$_{STATIVE}$-*key*]      V

(30b) supports the facts such as a) *Subj [$_{SM}$ NP$_1$-NOM V$_{STATIVE}$-*key*] V; if the embedded clause is TP, NP$_1$ should be able to have nominative case, as opposed to the fact, b) the -*key* of (30b) cannot be replaced with -*tolok* which leads to a clear adjunct structure unlike the case of (27a) (in (30a), the -*key* can be replaced with -*tolok*). Supporting arguments for (30b') are that the -*key* phrase can take the negation *anh* 'NEG' which is often associated with the local T-head, and it is possible to have more than two V$_{STATIVE}$-*key* phrases in a sentence as in (30) (cf. Shim & den Dikken (2007)).

Although we do not have enough space to introduce the Korean data in this paper, Mongolian resultatives indeed resemble Korean resultatives of "V$_{DYNAMIC}$-*key*/V$_{STATIVE}$-*ci-key*" in many aspects (see for the Korean data; Sells (1998), Shim & den Dikken (2007), Son (2008)). However, there are, of course, differences. We will observe some of the differences here.

(31)  a. [Double Accusative NPs, both Raised from the Embedded Clause]
         *Jim-i        **sikthak$_i$-ul phyomeyn$_j$-ul**        [t$_i$   t$_j$   kkaykkusha-key] takk-ass-ta*
         Jim-NOM   table-ACC     surface-ACC          clean-KEY          wipe-PST-DC
         "Jim wiped the table's surface clean."
      b. [Two TP Clauses]
         $^{?/??}$*Jim-i        chelphan-ul          [moyang-i      napcaklha-key]*
         Jim-NOM          iron.plate-ACC       shape-NOM    flat-KEY
         *[ phyomyen-i    phanphanha-key]    twutulki-ess-ta*
         surface-NOM     smooth-KEY          hammer-PST-DC
         Int. "Jim hammered the iron plate as a result the shape became flat and the surface became smooth."
      c. [Two -*key* Phrases (Shim & den Dikken (2007)]
         *Jim-i        patak-ul      (phyomeyn-i)    **hayah-key panccaki-key** chilha-ess-ta*
         Jim-NOM   floor-ACC    surface-NOM    white-KEY     shiny-KEY       paint-PST-DC
         "Jim painted the floor so that its surface became white (and) shiny."

(32)　　[Two *-tAl* Phrases in Mongolian]

| ??/*John | ene | tol'-ig | (gadarguu | n') | ***zeverhen*** |
|---|---|---|---|---|---|
| John | this | mirror-ACC | surface:nom | 3.poss | clean(A) |

| ***bol-tol*** | ***gyalalz-tal*** | *arch-san.* |
|---|---|---|
| become-CVB | glitter(V)-CVB | wipe-PST |

Int. "John polished this mirror clean into a brilliant shine."

(31a) is grammatical in Korean, like the Mongolian counterparts (14e,f), but with a different reason. As briefly mentioned earlier, Korean allows the double nominative construction; those two NPs in (31a) are both originally in the embedded clause with nominative case, then they both rose to the matrix clause. The grammatical acceptability of (31b) is low, as opposed to the Mongolian counterpart (16a,b). In (28b), those two embedded clauses look to form a coordinate structure rather than two adjunct clauses; there has to be a pause in between the two clauses or -*ko* 'and' onto the end of the first embedded clause. In fact, when these two clauses are replaced with two manner adverbs such as *quickly* and *strongly*, the sentence becomes better without a pause between the adverbs. (31c) is grammatical in Korean but its Mongolian counterpart in (32) is ungrammatical. The Korean data (31b) and Mongolian data (16a,b) contradict with the Korean (31c) and Mongolian (32) respectively. More research is certainly needed in this domain. However, at least in Mongolian it can be said that when there are two *-tAl* phrases, each one has to have an overtly expressed subject. The reason is perhaps that, when the embedded subjects are not overtly expressed, they are automatically reconstructed pragmatically using the part-whole relation with the accusative marked NP; the same noun seems to be reconstructed as the subject of both embedded clauses, which causes extremely redundancy. In Mongolian (as well as Korean) it is almost grammatically unacceptable to have the same subject in both embedded clauses because of the strong redundancy. This semantic and pragmatic fact seems to be blocking the construction (32) in Mongolian.

## 4.　Summary

We tried to show as much Mongolian data (and analysis) as possible, since there has not been much work done on Mongolian yet. We proposed that Mongolian object-oriented *-tAl* resultative takes a TP adjunct structure, adjoined to V', which is in a way similar to Korean *-key* resultative, but different from Japanese complement type resultative. The difference/similarity seems to be brought about by the morphemes *-tAl*, *-key* and *-ni*, each of which determine the syntactic and semantic characteristics of "resultative" clauses.

　　Whether or not Mongolian *-tAl* "resultative" construction represents the true resultative depends upon the definition of the resultative. As we stated in this paper, Mongolian resultative does not take the complement structure, but the *-tAl* resultative phrases are not the mere manner/resultant adverbs which modify the main verb; the *-tAl* resultative phrases are indeed predicated with arguments (their notional subjects) in their embedded TP clauses. Therefore, we used the terminology "resultative" in a loose context, and would therefore like to emphasise again that Mongolian resultatives do no abide some rules discovered with the complement type resultatives.

On the process of investigating Mongolian resultatives, we discussed about varieties of related issues such as case marking system, clausal structure, aspect & tense, adjectives, adverbs, adjuncts, complements and so on. We very much hope that these topics mentioned in this paper are also useful and trigger further research in Mongolian.

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