ADJECTIVE DISTRIBUTION IN MODERN MONGOLIAN

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Abstract
This paper discusses adjective distribution in Mongolian based upon the mereological framework: scale structure. It investigates how adjectival complements are sensitive to the scalar structure of adjectival predicates (APs) in resultative constructions as well as direct perception expressions. The findings reveal that Mongolian only tolerates inherent resultatives; derived resultatives are ruled out. The acceptability of adjectival complements in inherent resultatives runs from 'Totally open-scale/Totally closed-scale' down to 'Lower closed/Upper closed-scale'. On the other hand, adjectival complements in direct perception expressions are of no diverse acceptability, i.e. all layers of APs are licensed. Furthermore, durative verbs are likely to yield open-scale APs whilst punctual verbs seem to favour closed-scale APs.

Keywords: Mongolian; adjective predicates; scale structure

Povzetek
Članek obravnava distribucijo pridevnika v mongolščini po mereološki teoriji skalarnih struktur. Avtor raziskuje občutljivost pridevniških dopolnil na skalarno strukturo pridevnikov v povedkovni rabi tako v posledičnih strukturah kot tudi v izrazih osebnega mnenja. Rezultati razkrivajo, da mongolščina dopušča samo inherentni vzročno-posledični odnos pridevnikov v povedkovni rabi, kjer pa sprejme pridevniška dopolnila z zelo raznolikim odnosom do pridevnika; od popolnoma odprtega/zaprtega do delno odprtega/zaprtega. Nasprotno je v izrazih osebnega mnenja, kjer so sprejemljiva bolj ali manj vsa pridevniška dopolnila, pri čemer nedovršni glagoli privlačijo odprt tip pridevnikov v povedkovni rabi, dovršni pa zaprti tip.

Ključne besede: mongolščina; pridevni v povedkovni rabi; skalarna struktura

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1 Introduction

Mongolian, an Altaic language family member, is an exclusively suffixing agglutinative SOP language. A salient feature of the language lies in that adjectival complements may directly precede the verbs, as seen in direct perception expression (1a) as well as in a resultative construction (1b).

(1) a. Direct perception expression

Нүцгэн би түүнийг олж харсан. (well-formed)
'naked I her.Acc find see-PAST
'I found her naked.'

b. Resultatives construction

Тэр ханаа улаан/улаанаар будсан. (well-formed)
she wall red/red.Instr paint-PAST
'She painted the wall red.'

As far as (1b) is concerned, the adjective улаан 'red' is licensed in the resultative construction. However, not all adjectival complements appear to be welcome in Mongolian. The following adjective хатуу 'solid' is ruled out in the resultative construction, c.f. (2).

(2) *Нуур хатуу_биет хөлджээ. (ill-formed)
lake solid freeze-PAST
'The lake froze solid.'

The ungrammaticality of (2) lies in that the adjective хатуу 'solid' is a closed-scale AP whilst the adjective улаан 'red' in (1b) is an open-scale AP. It appears then that Mongolian resultatives seem to only license closed-scale APs. This linguistic phenomenon is the opposite of English resultatives. English only tolerates closed-scale APs as resultative complements, with open-scale APs being ruled out. (3) provides the illustrations.

(3) a. Bill pounded the metal *long. (Open-scale AP: ill-formed)
    b. Bill pounded the metal flat. (Closed-scale AP: well-formed)

The ungrammaticality of (3a) lies in that open-scale adjectives fail to describe certain culmination points (see Beavers, 2008; Wechsler, 2005; and Wyngaerd, 2001 for further discussion).

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2 There are three writing systems in Mongolian: Todo Bicig (Xinjiang area), Traditional Mongolian alphabet (Hudum) (Inner Mongolia) and Cyrillic Mongolian (Outer Mongolia). In this study, Cyrillic Mongolian was adopted. A list of Mongolian Cyrillic alphabet is provided at the end of the paper.

3 A detailed explanation regarding open-scale and closed-scale APs will be given in Section 2.
Intriguingly, in terms of perception expression, on the contrary, English adjectives are of no diverse acceptability, i.e. both open and closed-scale APs are allowed, as illustrated by (4).

(4)  a. Bill saw Mary exhausted.  (Open-scale AP: well-formed)
     b. Bill saw the dog dead.  (Closed-scale AP: well-formed)

It is also salient to mention that German language, a relative of English, permits both open-scale and closed-scale APs in resultative constructions, as in (5). On the other hand, German has diverse acceptability of direct perception expressions: the distribution of APs runs from 'Lower closed/Upper closed-scale' down to 'Totally open-scale/Totally closed-scale', as in (6).

(5)  Resultative construction in German

a. Mary hämmerte das Eisen flach.  (Closed-scale AP: well-formed)
   'Mary pounded the metal flat'

b. Bill hämmerte das Eisen lang.  (Open-scale AP: well-formed)
   'Bill pounded the metal long'

(6)  Direct perception expression in German

a. *Mary sah ihn müde.  (Totally open-scale AP: ill-formed)
   'Mary saw him tired.'

At this stage, then, it seems that the distribution of APs in German direct perception expression somehow resembles Modern Mongolian.

The distribution of APs in Mongolian seems to receive far less attention compared to those of European languages. This study tentatively explores how APs show sensitivity to the scalar structure in resultative as well as direct perception constructions.

The paper is mapped out as follows: section 2 sheds light on the framework that is adopted in the analysis, i.e. scalar structure. With this in place, section 3 first examines the scalar properties of Mongolian APs and then delves into APs' distribution in resultative constructions. Section 4 moves on to explore APs in direct perception expressions. Section 5 highlights the results and concludes the paper.

The Mongolian Cyrillic alphabet is adopted in this study and hand-made examples are used. Native speakers checked the examples. Due to numerous dialects in the country, native speakers from the Inner and Outer parts of Mongolia have both been asked to provide judgements. Moreover, a multilingual parallel electronic dictionary is employed: [http://asuult.net/dic/](http://asuult.net/dic/).

2 Framework: scalar structure

A *scale* is constituted of a set of degrees (points or intervals indicating measurement values) on a particular dimension (e.g. cost, depth, height, temperature), with an ordering relation. The dimension represents an attribute of an entity, with the degrees indicating the possible values of this attribute (Kennedy and McNally, 2005). *Scale* measures the change undergone by the incremental theme, patient or figure participant. The following variations have been established:

(a) Totally open-scale: a scale may have neither a minimal nor maximal element
(b) Lower closed-scale: a scale may have a minimal but no maximal element
(c) Upper closed-scale: a scale may have a maximal but no minimal element
(d) Totally closed-scale: a scale may have both maximal and minimal elements

Kennedy and McNally (2005)
Scale structure may apply to adjectives:

(7) a. Totally open-scale: tired, müde, nervous, nervös, sad, traurig, deep, tief, long, lang
b. Lower closed-scale: drunk, betrunken, shave, rasiert, pale, blass, flat, flach
c. Upper closed-scale: pure, rein, naked, nackt, unshaved, unrasiert
d. Totally closed-scale: dead, tot, empty, leer

Scale structure may apply to verbs:

(8) a. Totally open-scale: shift, utsuru, ply, kayou
b. Lower closed-scale: approach, yoru, leave, hanareru, flit, kasumeru
c. Upper closed-scale: return, modoru, cross, wataru, return, kaeru, pass, heru
d. Totally closed-scale: arrive, tsuku, reach, todoku, transcend, koeru, descend, oriru, exit
e. Non-scale change: tumble, korogaru, swim, oyogu, run, hashiru, crawl, hau, dance, odoru

Scale structure may apply to prepositions/postpositions:

(9) a. Totally open-scale: toward, e
b. Lower closed-scale: from, kara; yori
c. Upper closed-scale: e-to

d. Totally closed-scale: until, made; along, ni sotte

The scalar properties of APs, verbs and (pre) postpositions (PPs) further link to the combinatorial possibilities with verbs. Wechsler (2005, p. 264) indicates that resultative constructions with maximal endpoint adjectives often have durative verbs, e.g. wipe, pull. On the other hand, non-gradable adjectives are more likely to occur with punctual verbs, e.g. shoot, kick. This view is supported by Beavers (2008), who proposes that punctual verbs tend to yield non-gradable de-verbal adjectives while durative verbs tend to yield gradable de-verbal adjectives.

As such, scale structure should be a great help in detecting the syntactic distribution of APs in Mongolian.

3 The distribution of adjectives in resultative constructions

With the classifications of adjective highlighted, this section proceeds by looking into: (a) the scalar property of Mongolian APs; and (b) their distributions in resultative constructions. (10) provides a list of the most-used adjectives.

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4 In (7)-(9), English lexicons are in normal font; the corresponding lexicons of other languages are in italic. (7) are German adjectives; (8) and (9) are Japanese adjectives.

5 e-to is between direction e and delimitation made.
An examination in terms of the modifiers жинхэнэ 'very' and хагас 'half' is carried out. Three Mongolian native speakers provided their judgements. The results are given in (11).

(11) a. жинхэнэ (very)

жинхэнэ чийг (very wet) [natural]
jинхэнэ эцсэн (very tied) [natural]
jинхэнэ гүн (very deep) [natural]
jинхэнэ урт (very long) [natural]
jинхэнэ хатуу (very hard) [natural]
* жинхэнэ өвчин (very sick) [unacceptable]
? жинхэнэ хавтгай (very flat) [unnatural]
? жинхэнэ нүцгэн (very naked) [unnatural]
жинхэнэ ухсэн (very dead) [natural]
jинхэнэ сэрүүн (very awake) [natural]
jинхэнэ хоосон (very empty) [natural]

b. хагас (half)

хагас чийг (half wet) [unnatural]
? хагас эцсэн (half tied) [unnatural]
хагас гүн (half deep) [natural]
? хагас урт (half long) [unnatural]
? хагас хатуу (half hard) [unnatural]
? хагас өвчин (half sick) [unnatural]
? хагас хавтгай (half flat) [unnatural]
? хагас нүцгэн (half naked) [unnatural]
? хагас ухсэн (half dead) [unnatural]
хагас сэрүүн (half awake) [natural]
? хагас хоосон (half empty) [unnatural]

Based upon the test, we may arrive at the following classification of Mongolian APs:

(12) a. Totally open-scale: эцсэн (tied), урт (long), гүн (deep)
b. Lower closed-scale: чийг (wet), өвчин (sick), өлөссэнийг (hungry), хусугсанийг (shaved)
c. Upper closed-scale: хатуу (hard), сэрүүн (awake), чайсанийг (pale)
d. Totally closed-scale: нүцгэн (naked), ухсэн (dead), хоосон (empty), хавтгай (flat)

In light of the classification, we move onto inquiring as to how APs are distributed in resultative constructions. Tests along with the four different scalar structures of APs are provided in (13) to (16). Native speakers again assessed the examples.
We now have several layers illustrating the acceptability thresholds of Mongolian APs in resultatives, running from 'Totally open-scale AP' down to 'Lower closed-scale AP, Upper-closed scale AP, Totally closed-scale AP'.

Note that (13) are inherent resultatives. It seems that Mongolian lacks derived resultative constructions. All layers of APs appear to be ruled out.

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6 xӨ is a co-verb.

7 The terminology used to describe the two types of resultative constructions varies: Kageyama (1996) labels them as 'inherent resultatives' vs. 'derived resultatives'; Washio (1997) refers to them as 'strong resultatives' vs. 'weak resultatives'; Iwata (2006) uses the terms 'argument resultatives' vs. 'adjunct resultatives'; and in Levin & Rappaport Hovav (1995) and Kennedy's (1999) works,
Another Altaic language, Japanese, also lacks derived resultative constructions, as shown in (18):

(18) a. *Japanese inherent resultatives* (well-formed)

Taro wa kabe o siroku nutta.
Taro TOP wall ACC white paint-PAST
'Taro painted the wall white.'

b. *Japanese derived resultatives* (ill-formed)

*Kanojo wa sakana o zerii joo ni tataita.
She TOP fish ACC jelly into pound-PAST
'She pounded the fish into a jelly.'

We might contend that Altaic languages are likely to miss derived resultative constructions. This feature is shared with Romance languages; Italian and French do not tolerate derived resultative constructions, as seen in (19) and (20).

(19) a. *Italian inherent resultatives* (well-formed)

Ho taglito la carne in piccolo pezzi.
have.1stSg cut.PPT the meat in small pieces
'I cut the meat into small pieces.'

b. *Italian derived resultatives* (ill-formed)

*Gianni ha martellato il metallo piatto.
Gianni has hammer-PPT the metal flat
'Gianni hammered the metal flat.' (Napoli, 1992, p. 65)

(20) a. *French inherent resultatives* (well-formed)

Je coupe la viande en morceaux.
I cut the meat PREP pieces
'I cut the meat into pieces.'
Moreover, another character of French resultatives is worth highlighting, namely, that only prepositional complements are permitted to denote the result, c.f. (21):

(21) a. J’ai peint le mur en rouge. (well-formed)
    b. Jean a cassé le vase en morceaux. (well-formed)
    c.f. c. *J’ai peint le mur rouge. (ill-formed)

Germanic languages, on the other hand, license both inherent and derived resultative constructions.

(22) a. German inherent resultatives
    Bill froz das Wasser hart.
    Bill froze the water hard.
    b. German derived resultatives
    Bill drank die Kneipe leer.
    Bill drank the pub empty.

(23) a. English inherent resultatives
    Mary wiped the table clean.
    b. English derived resultatives
    She pounded the fish into a jelly.

4 The distribution of adjectives in direct perception expressions

Having drawn a picture of the sensitivity of APs in resultatives, we are in a better position to engage in the analysis of direct perception expression. Tests along with the four various scalar structures of Mongolian APs are carried out. Once more, native speakers provided the judgements.

(24) Totally open-scale AP
    жан сан лъ сийн ядраагсанийг узэб. (natural)
    Zhang san Li si tired see-PAST
    'Zhang san saw Li si tired.'
(25) *Totally closed-scale AP*

a. жан сан  нонгойн ҮхҮгсэнйг үзэб.  (natural)
   Zhang san  dog  dead  see-PAST
   'Zhang san saw the dog dead.'

b. жан сан  лъ сийн нүцгэн нь оложь үзэб.  (natural)
   Zhang san  Li si  naked  see-PAST
   'Zhang san saw Li si naked.'

(26) *Upper closed-scale AP*

жан сан  лъ сийн  чайсанийг үзэб.  (natural)
Zhang san  Li si  pale  see-PAST
'Zhang san saw Li si pale.'

(27) *Lower closed-scale AP*

a. жан сан  лъ сийн  еллесэнйг үзэб.  (natural)
   Zhang san  Li si  hungry  see-PAST
   'Zhang san saw Li si hungry.'

b. жан сан  лъ сийн  хусугсанийг үзэб.  (ill-formed)
   Zhang san  Li si  shaved  see-PAST
   'Zhang san saw Li si shaved.'

The oddness of хусугсанийг 'shaved' (c.f. 27b) might have revealed that a Mongolian perception verb only denotes a direct perception report. It does not contribute to a potential indirect perception, describing the observer's conceptualisation of the perceived event. Nonetheless, Mongolian seems to welcome all layers of adjectival complements in direct perception expressions.

5 Conclusion

This paper has delved into the adjective distribution in resultative constructions as well as direct perception expressions. The findings show that Mongolian only tolerates inherent resultatives; derived resultatives are ruled out. The acceptability of adjectival complements in inherent resultatives runs from 'Totally open-scale/Totally closed-scale' down to 'Lower closed/Upper closed-scale'. On the other hand, adjectival complements in direct perception expressions are of no diverse acceptability, i.e. all layers of APs appear licensed. The foregoing discussion is summarised in Table 1.
Table 1: The distribution of Mongolian adjectives in resultative and direct perception constructions

<table>
<thead>
<tr>
<th>Scalar property</th>
<th>Inherent resultatives</th>
<th>Derived resultatives</th>
<th>Direct perception expression</th>
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<tr>
<td>Totally open scale</td>
<td>high</td>
<td>all ruled out</td>
<td>all licensed</td>
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<tr>
<td>Lower closed scale</td>
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<td>Upper closed scale</td>
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<tr>
<td>Totally closed scale</td>
<td>low</td>
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The scalar properties of APs further link to the combinatorial possibilities with verbs. Durative verbs are likely to yield open-scale APs whilst punctual verbs seem to favour closed-scale APs. Moreover, the scalar properties can be a syntactic diagnostic for split intransitivity, i.e. unergative verbs are likely to yield closed-scale postpositions while unaccusative verbs tend to occur with open-scale postpositions.

Table 2: Scalar properties of APs along with the combinatorial possibilities with verbs and postpositions

<table>
<thead>
<tr>
<th>Durative verbs ⇒ Open-scale AP</th>
<th>Open-scale postpositions ⇐ Unaccusative verb</th>
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<tbody>
<tr>
<td>Punctual verbs ⇒ Closed-scale AP</td>
<td>Closed-scale postpositions ⇐ Unergative verbs</td>
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Mongolian Cyrillic alphabet

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<th>a</th>
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References


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