Types and Constructions of Exocentric Adjectives in Tibetan

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Abstract. The construction [NR+V/ADJR+SUF] in Tibetan may be analyzed as nominal phrase or as adjectives of exocentric construction with different meanings. How to segment, tag and auto-translate the two constructions will be a problem in Tibetan natural processing. This paper describes the constructions, types, variants in given situations and the ways of production of the exocentric constructions, which will give enlightenments to relative researches.

Keywords: nominal phrase; compound adjective with derived suffixes; constructional homonymity; exocentric construction

1 Exocentric Construction of Adjectives in Tibetan

There are a number of compound adjectives, homomorphic with conventional modifier-head noun phrases. Both of them show great disparities in grammatical analysis and semantic understanding, which leads to whether word segment, syntactic tagging and machine translation is correct. Therefore, the design of distinctive segmenting and tagging strategies is to deal with such a problem. For example, � *ngo nag po* as a noun phrase *ngo/N nag po/ADJ* means "black face", and as an adjective *ngo nag po/ADJ* means "sullen"; ཙ *ngo/N mtshar po/ADJ* as a phrase with the meaning "a fair face", *ngo mtshar po/ADJ* as an adjective "good-looking". སྐད *skad cha/N gsang po/ADJ* as a phrase "blunt words", *skad cha gsang po/ADJ* as an adjective "lucid-spoken"; རྩ *rtsal lag/N dod po/ADJ* as a phrase "prominent skill", *rtsal lag dod po/ADJ* as an adjective "proficiently-skilled". Fegure 1 shows a lexicalization process by adjectivization of a metonymy in such a case of ཙ *ngo nag po* in ཚ *tshong pa ngo nag po*[1], [2].

This class of adjectives may be named as compound adjectives with derived suffixes. In view of no more discussions on such a kind of adjectives, some concepts are firstly to be illustrated. Such a sort of words are called adjectives with exocentric construction[3].

For the purpose of a comprehensive understanding of compound adjective with derived suffixes, it is necessary to analyze the overall status and inner construction of Tibetan adjectives. The basic formation of them is a monosyllabic adjective/verbal root + adjective suffixes, called derived adjective, namely, $ADJ/V_{ROOT}+po_{SUF}$ (པོ *po* is a typical adjective suffix, and others like མོ *mo*, བ *ba*, པ *pa* etc.). For instance, ཚ *tsha*

po "hot", གྲང་མོ་ *grang mo* "cold", ཆེན་པོ་ *chen po* "big", ཡག་པོ་ *yag po* "nice". In addition, the reduplication of Tibetan roots form such reduplicated adjectives as ཆུང་ཆུང་ *chung chung* "small", ནར་ནར་ *nar nar* "banded" , འཁྱོར་འཁྱོར་ *vkhyor vkhyor* "swaying" . Disyllabic reduplicated adjective is another basic form, some of which have no corresponding form: a root with an suffix. Trisyllabic adjectives (including derived suffixes) in Tibetan are rare in number, such as སྙིང་རྗེ་པོ་ *snying rje po* "adorable", ཁྱད་མཚར་པོ་ *khyad mtshar po* "weird" . This sort of antique multisyllabic adjectives emerge etymologically by lexicalization with no apparent inner meaning, nevertheless, distinctively different from adjectives discussed in the following sections.
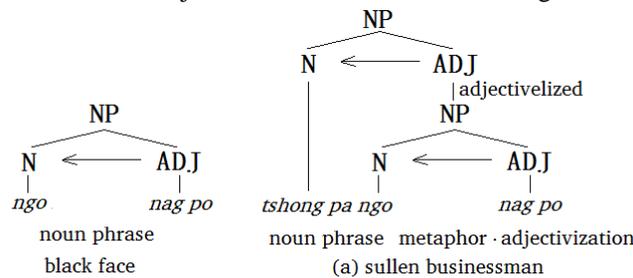

Fegure 1. Comparison of a homomorphic structure with different meanings

Compared with basic adjectives, compound adjectives are obviously in a novel category. Originally , they are formed through the lexicalization of nominal-adjective phrases, such as ཞགས་པ་རིང་པོ་ *zhags pa ring po* "a long rope", རིང་པོ་ *ring po* "long" , a modifier of ཞགས་པ་ *zhags pa* "rope". However, the ingenuity of Tibetan logic is that རིང་པོ་ *ring po* as such is void of property to represent the length of an object, as a result, unable to modify directly nouns involving no items of length, such as སྦུག་ *sbug* original meaning "valley bottom，depth", no form སྦུག་རིང་པོ་ *sbug ring po*. In another case, མཛད་པ་ *mdzad pa* "career" cannot be modified by ཆེ་བ་ *che ba* "big", སྡུག་པ་ *sdug pa* "severe" cannot be used to modify བྱད་ *byad* "appearance". In this connection, Tibetan utilizes conventional nouns and adjectives to constitute NP+AP phrase, and then make them adjectivized as $[N_R+ADJ_R+SUF]_{ADJ}$, i.e. compound adjectives with derived suffixes by means of semantic generalization and metonymy. For example, in ཐག་རིང་པོ་ *thag ring po* "distant", ཐག་ *thag* "cordage", entailing the property of length, can be modified by རིང་པོ་ *ring po*. When this construction is further combined with a noun, such as ལམ་ཐག་རིང་པོ་ (ལམ་ *lam* "way", ཐག་རིང་པོ་ *thag ring po)* "a long way", སྡུག་ཐག་རིང་པོ་(སྡུག་ *sdug* "bottom", ཐག་རིང་པོ་ *thag ring po)* "deep valley", the modification of nouns with no length property is consequently realized. In accordance with qualia construction of Generative Lexicon Theory, the meaning of an item itself is generally stable, however, the combination of items together gives rise to integrated meaning[2], [4]. Among them are type coercion and type selection governing the combination. In construction $[N_R+ADJ_R+SUF]_{ADJ}$, ADJ_R is short of arguments matching adjectives[5], mandatorily converting nouns into consistent properties, which serve as certain role in qualia construction (including formal role, constitutive role, telic role and agentive role)[4]. Such a psychological process allows the meanings of N_R to experience generalization, metonymy, and even transformation of concept domain. Thereby, the

construction [N$_R$+ADJ$_R$+ SUF]$_{ADJ}$ and its meaning are gradually solidified, converting into an adjective.

[N$_R$+ADJ$_R$+SUF]$_{ADJ}$ is a typical lexical form of exocentric construction. Its inner construction conforms with attributive-centered construction. However, N$_R$ is a property value of ADJ$_R$ semantically and functionally, utterly converse with conventional attributive-centered construction. Thus, its allomeric function is embodied as an adjective.

Another property worth the whistle is that this sort of adjectives which should be analyzed as [N$_R$+[ADJ$_R$+po$_{SUF}$]] construction, i.e. noun + adjective with suffix, however, in practice, are reanalyzed cognitively as [[N$_R$+ADJ$_R$]+po$_{SUF}$] construction. From the glossary of dictionaries, there are some [N$_R$+ADJ$_R$] constructions, such as ཁྱད་མཚར་ *khyad mtshar*, "curiosity, miracle" as a metonymy, and as a nominal phrase with its meaning "distinctive difference" if we use [[khyad] $_{\text{"difference" N}}$ [mtshar po] $_{\text{"distinctive"ADJ}}$] to analyze, without any transferred meanging, inconsistent with its original meaning, therefore, it is estimated that ཁྱད་མཚར་ *khyad mtshar* is constructed with disyllabic nouns + affixes. Similiar adjectives are ག་རྒྱས་པོ་ [[gra rgyas]$_{\text{"abundance". N}}$ po] $_{\text{"abundant"}}$, ག་འགྲིག་པོ་ [[gra vgrig] $_{\text{"completeness"}}$ +po]$_{\text{"thoughtful, detailed"}}$, ཞིབ་ཚགས་པོ་ [[zhib] $_{\text{"meticulosity" N}}$ [tshags] $_{\text{"compactness" N}}$] $_{\text{"thoroughness" N}}$ po] $_{\text{"careful"}}$. However, some of words have no [N$_R$+ADJ$_R$]construction and directly are constructed with N$_R$+[ADJ$_R$+po$_{SUF}$], such as ཁ་འབལ་པོ་[[kha]$_N$ $_{\text{"mouth"}}$ [vbal po]$_{ADJ}$ $_{\text{"plentiful"}}$] $_{\text{"talkative"}}$. If this approach is adopted, two maladies then come about . It is known to us that [[N$_R$+ADJ$_R$]+ po$_{SUF}$] construction originates etymologically from the lexicalization of phrases, although so far brought about by analogy of an abundance of lexicon, while originally its lexical form and lexical generalization are closely related to metonymy, without which, it is yet a conventional nominal-adjective phrase. On the other hand, Tibetan nouns, verbs and adjectives show distinctive form disparities, which can create intensive psychological traces on native speakers, accepting canonical adjective construction as root +affix (པོ་*po-* as a model). Therefore, even though compound affixes are put to use, it is acknowledged that only by adding affixes can a valid adjective be constructed. This is the reason why this sort of constructions are named compound adjectives with derived suffixes.

Exocentric construction adjectives can be grouped into four categories according to inner morphemic meanings. (1) category refers to an estimation on objective description of shape, dimension, material and methods; (2) category refers to an estimation on concepts derived from our body or on relevant abstract concepts, such as "soul, attitude, skill and habit"etc; (3) category refers to the description and estimation of metaphor and metonymy of our body parts; (4) category refers to the description and estimation of hyperbole or metonymy of actions.

1: ཐག *thag* $_{\text{"distance"}}$, རྒྱ་ *rgya* $_{\text{"acreage"}}$, གཏིང་ *gting* $_{\text{"depth"}}$, ཐབས་ *thabs* $_{\text{"method"}}$, གོང་ *gong* $_{\text{"value"}}$.

2: སེམས་ *sems* $_{\text{"soul"}}$, ཐུགས་ *thugs* $_{\text{"spirit"}}$, ངང་ *ngang* $_{\text{"nature"}}$, རུས་པ་ *rus pa* $_{\text{"lineage"}}$, ཁུངས་ *khungs* $_{\text{"sourse"}}$, སྟོབས་ *stobs* $_{\text{"power"}}$, རིག་པ་ *rig pa* $_{\text{"wisdom"}}$, རྣམ་པ་ *rnam pa* $_{\text{"appearance"}}$, ཉམས་ *nyams* $_{\text{"posture"}}$, ཡིད་ཆེས་ *yid ches* $_{\text{"mood"}}$, སྣང་པ་ *snang pa* $_{\text{"perception"}}$, གཤིས་ཀ་ *gshis ka* $_{\text{"property"}}$, རྩལ་ *rtsal* $_{\text{"skill"}}$, སྐད་ *skad* $_{\text{"sound"}}$, ལབ་རྗེས་ *lab rjes* $_{\text{"promise"}}$.

3:（five sense organs）ཁ་ *kha* $_{\text{"mouth"}}$, ལྕེ་ *lce* $_{\text{"tongue"}}$, རྣ་ *rna* $_{\text{"ear"}}$, སྣ་ *sna* $_{\text{"nose"}}$, མིག་ *mig* $_{\text{"eye"}}$, གདོང་ *gdong*/ གདོང་ཁ་ *gdong kha* $_{\text{"face"}}$.

（limbs） ལག་པ་ *lag pa* "hand", རྐུབ་ *rkub* "hip", རྐང་པ་ *rkang pa* "foot", མཇིང་པ་ *mjing pa* "neck", ཕྲག་པ་ *phrag pa* "shoulder", གཟུགས་པོ་ *gzugs po* "body", ཤ་ *sha* "fresh", སྐད་*skad cha* "throat".

4: འཁྲབ་ *vkhrab* "performance", བཞོན་ *bzhon* "ride", ཁོབ་ཤ་ *khob sha* "stupidity", གྲུང་ཤ་ *grung sha* "cleverness".

Sentence 1 is an example of metonymy in category 3 relating to limbs. More instances are shown in Section 2.

1. ཁ་བདེ་པོ་ མེད་ ན་ ལས་ཀ་ ག་ཚོད་ བྱས་ ཀྱང་ མི་ཡིས་ མཐོང་ཆུང་བྱེད་ ཀྱི་རེད།

kha-bde-po med na las-ka ga-tshod byas kyang mi-yis mthong-chung-byed kyi red
good-talk   not-be if work how-much done also others look-down-upon   ASP

  If you are not good at words, no matter how much work you do, you will also be looked down upon by others.

2 Construction and Syntactic Function of Exocentric Adjectives

Exocentric construction adjectives can serve as various components in a sentence, mainly including adjective predicate and postpositive attributive. By adding different markers, they serve as prepositive attributive, adverbials and complements.

Predicate: An adjective + a predicate sentence-final marker constitutes an adjective predicate sentence, of which the primary component is an aspect marker[6]. Generally speaking, adjectives of property manifests static state, the result of describing properties of an object, thus labeled with aspect markers ཡོད་ *yod,* འདུག་ *vdug,* ཡོག་རེད་ *yog red.* These three markers are relevant to evidentiality, denoting self-knowing evidentials, visual evidentials, information-newly-found evidentials, hearsay or inferential evidentials, pertaining to the subject's person of and the narrator's cognitive state of[7].(ASP=aspect,   AG=agentive,   GEN=genitive,   NEG=negative, NMZ=nominalized, -LY=adverbial, LOC=locative, CONJ=conjunction, OBJ= objective, ALA=allative, ABL=ablative, TOP=topic marker)

2. ལུང་པ་ འདིའི་ སྦུག་ ཐག་རིང་པོ་ ཡོག་མ་རེད།

   lung-pa vdi-vi   sbug thag-ring-po   yog-ma-red.
   place   this-GEN valley (distance)deep ASP-NEG

   This valley is not deep.(adjective predicate sentence with a compound adjective)

3. རུས་ དེ་ ཞོད་ གངས་ ཁྲོད་ ཀྱི་ པ་བོང་ དེའི་ སྟེང་ དུ་ དམིགས་བསལ་

   rus   de zhod gangs khrod kyi pha-bong devi   steng du dmigs-bsal
   bone this big snow in   GEN rock   that-GEN on   LOC special
   ཀྱི་ ལམ་རྟགས་ ལྟར་ ཧ་ཅང་ མངོན་གསལ་དོད་པོ་ འདུག

   gyi   lam-rtags ltar ha-cang   mngon-gsal-dod-po vdug.
   GEN landmark like very   obvious   ASP

   The bone on the rock in the snow is like a landmark, becoming very obvious.(a predicate)

The root of adjective without an affix as a predicate may use continuous aspect, perfect aspect, like གི་རེད་ *gi red,* གིས་མ་རེད་ *gi ma red,* པ་རེད་ *pa red,* པ་མ་རེད་ *pa ma red,* གི་འདུག *gi vdug,* གི་མི་འདུག *gi mi vdug,* ཤག *shag* etc., because of the usual embodiment of its dynamics. In specific cases, judgment verbs ཡིན་ *yin,* རེད་ *red* are employed as aspect marker.

4. གལ་ཏེ་ གློག་བརྙན་བལྟས་ ན་ པ་སེ་ འདི་ ཐག་ཉེ་ དྲགས་ ཤག།

   gal-te glog-brnyan-bltas na pa-se vdi thag-nye drags shag.

| | If | film-watch | | if | ticket | this | near | | too | ASP |

If we watch a film, this ticket is(distance) too near.

5. ཁོ་རང་ རྐང་པ་ཡང་པོ་ ཡིན་པས་ དེ་རིང་ ཚུར་ འཁོར་ ཐུབས།

kho-rang rkang-pa-yang-po yin-pas de-ring tshur vkhor thubs.
he (action)nimble ASP-CONJ today come back can

He is nimble in his action, so he can come back today. (dictionary)

Attribute: Adjectives of exocentric construction, like any other common adjectives, serve as postposed modifiers, a few of which can be added with possessive case marker གི་ *gi* (variants: གྱི་ *gyi,* ཀྱི་ *kyi,* bound form འི་-*vi*) as preposed modifier.

6. གཅུང་པོ། འདི་ ནས་ ཡུལ་ ཚང་ཀྲavu་བར་ རྒྱང་ ཐག་རིང་པོ་ མེད།

gcung-po. vdi nas yul tshang-kravu-ba-r rgyang thag-ring-po med.
brother this ABL place tshang-kravu-ALA distance far NEG-ASP

Brother, this place is not far from tshang-kravu-ba. (Existential sentence with a compound derived adjective as postposed modifier)

7. སྒེག་ཉམས་དོད་པའི་ བྱད་བཞིན་ ལས་ དངོས་གནས་ མོ་ ལ་

sgeg-nyams-dod-pavi byad-bzhin las dngos-gnas mo la
charming-and-delicate-GEN appearance besides really she POS

རེ་འདོད་བྱེད་ མཁན་ མི་ཉུང་བ་ ཡོད།

re-vdod-byed mkhan mi-nyung-ba yod.
expectation NMZ-person not a few have

Besides charming and delicate appearance, she really has not a few expectations.

Under exceptional circumtances, it is possible that adjectives are not followed by a marker as a preposed modifier. For example, an adjective phrase and a verbal phrase together in Sentence 8 in juxtapostion, modifies མཁན་ *mkhan,* acting as both a nominalization marker and a person's name affix denoting "a person".

8. གཞུང་དྲང་པོ་ དང་ གུས་བཀུར་བྱེད་ མཁན་ གཅིག་ ཡིན།

gzhung-drang-po dang gus-bkur-byed mkhan gcig yin.
simple-and-honest and respectful-being person a is

(He) is a (character) simple, honest and respectful person. (གཞུང་ *gzhung* "character", དྲང་པོ་ *drang po* "honest")

Adverbial: Adjectives in Tibetan, when acting as adverbials, are added with an adverbial marker, such as བྱས་ནས་ *byas nas,* ནས་ *nas,* སེ་ *se,* དེ་ *de,* ལ་/-ར་ *la/-r,* དུ་ *du* etc..

9. ཁོང་ གིས་ ང་ ལ་ ངང་རྒྱུད་རིང་པོ་ བྱས་ནས་ རོགས་རམ་བྱེད་ ཀྱི་འདུག

khong gis nga la ngang-rgyud-ring-po byas-nas rogs-ram-byed kyi-vdug.
he AG me OBJ patient -LY help ASP

He help me patiently. (བྱས་ནས་ *byas-nas* follows after an adjective to convert it into an adverb)

10. གཙོ་དོན་ མངོན་གསལ་དོད་པོར་ བརྗོད་པ།

gtso-don mngon-gsal-dod-po-r brjod pa.
main significance-highlighted-LY state

State the main significance highlightedly. (ར་ *-r* is adhesive to the last syllable of adjective པོ་ *po,* modifying predicate)

Complement: Complements come before predicates. The adjectives, acting as complements, for the most part are followed by structural particles of supplement ལ་ *la* or ར་ *-r.* However, structural particles in a few cases are omitted.

11. ཕུན་ཚོགས་　　　འཕྲལ་　　　སེམས་　ཚབས་པོ་　གྱུར་　　　　དེ་　　ན་རེ་......

phun-tshogs vphral sems tshabs-po gyur te na re ……

phuntshogs immediately (heart) anxious become-PST hence say

Phuntshogs becomes anxious and says immediately……

12. ང་ ལ་ སྡང་པོ་ དེ་འདྲ་ བྱེད་པ་ ཅི་ཡིན་ནམ། བསམ་ བཞིན་ ཡུད་ཙམ་ ཡིད་མུག་པོར་ གྱུར།

nga-la sdang-po de-vdra byed-pa ci-yin nam. bsam bzhin yud-tsam yid mug-po-r gyur.

I-OBJ vicious so do what MOOD think face immediately vexed-FAT be

I immediately become vexed for the reason why do you treat me so viciously.

(ཡིད་མུག་པོ་ *yid mug po* = ཡིད་རྨུགས་པ་ *yid rmug pa* "blurred mind")

Here describes the adjectives in [N$_R$+ADJ$_R$+SUF]$_{ADJ}$ construction discussed in Section 1. In practice, exocentric construction adjectives have other forms made up from verbs. The most veteran is རླུང་ལང་པོ་ *rlung lang po* "bad-tempered, irritable". It stems from a verbal phrase རླུང་ལང་(ས)་ *rlung lang(s)* "irritate, enrage" by adding a suffix so that it will be lexicalized to a exocentric construction adjective. Such a schema in Tibetan, generally speaking, is a finite. Among them are ངོ་ཚ་པོ་ *ngo tsha po* "bashful" (< ངོ་ཚ་ *ngo tsa* "abash" V)，དོགས་པ་ཟ་པོ་ *dogs pa za po* "suspicious" (< དོགས་པ་ཟ་ *dogs pa za* "suspect" V). As is known to us, disyllabic verbs are attached with a suffix པོ་-*po* to constitute an adjective, which is not productive, and its construction is [[N$_{R/PHR}$+V$_R$]+SUF]$_{ADJ}$. The followings are examples in the same construction, but from other forms.

བག་ཡངས་ *bag yangs*(fearless, carefree ADJ) > བག་ཡངས་པོ་ *bag yangs po*(careless ADJ)

གཤིབ་འདོད་ *gshib vdod*(to get accessible to· verbal phrase) > གཤིབ་འདོད་པོ་ *gshib vdod po*(easy- going, ADJ)

ངོ་སོ་ *ngo so*(face· delight N) ཐོན་*thon*(to appear V) > ངོ་སོ་ཐོན་པོ་ *ngo so thon po*(honorable, ADJ)

བསྟུན་མཁས་ *bstun mkhas*(conformity, adaption N) > བསྟུན་མཁས་པོ་ *bstun mkhas po*(circulating, ADJ)/(see བསྟུན་མཁས་བྱེད་ *bstun mkhas byed* tocontactV)

Zhou Jiwen et al. argued that བཟོ་དོད་པོ་ *bzo dod po* indicates actions are specially fine in manner, posture or bearing (see Sentences 3, 10), and that བྱང་ལང་པོ་ *byang lang po* followed after a verb in present tense constitutes an adjective[8]. For example:

འགྲོ་བཟོ་དོད་པོ་ *vgro bzo dod po,* walking with good posture (འགྲོ་ *vgro* "to walk"V)

ངུ་བྱང་ལངས་པོ་ *ngu byang lang(s) po*, easy-crying (ངུ་ *ngu* "to cry" V)

However, we note that the initial syllable of a part of words can constitute with བཟོ་ *bzo* a compound noun. For example, བྱེད་བཟོ་དོད་པོ་ *byed bzo dod po* "dissolute, ostentatious", བྱེད་ *byed,* with its dependent verb meaning "make" and independent verb meaning "become", can constitute a compound noun བྱེད་བཟོ་ *byed bzo* "appearance, shape and gesture". Therefore, the composite construction is analyzed བྱེད་བཟོ་དོད་པོ་ [[byed bzo] "posture" dod po "appear"]$_{NA}$. Furthermore, we find that initial syllables are not necessarily all verbs, such as ཁ་བཟོ་དོད་པོ་ *kha bzo dod po* "butter-tonsiled"（*kha* "mouth"），its construction [[kha bzo] "statement" dod po]. It's no doubt that not all of initial syllables can constitute new words with བཟོ་ *bzo*. However, no matter if V/N+*bzo* is an independent word, it will be taken in NP+ADJ construction as a compound noun and analyzed as [[V/N+bzo] [dod po]]$_{ADJ}$ for benefit. For example, ལྟ་བཟོ་ *lta bzo* "good-looking/handsome" N དོད་པོ་ *dod po* "niffy, handsome", *lta bzo*$_{(N)}$ a word included in dictionary; འཁྲབ་བཟོ་ *vkhrab bzo* "dancing" དོད་པོ་ *dod po* "skillful". Although the word འཁྲབ་བཟོ་ *vkhrab bzo* is excluded from

dictionary, its inner meaning "the way of dancing" is apparent, and thus can be deduced from lexicalization.

Will བྱང་ལང་པོ་ *byang lang po* possess the same property if བཟོ་དོད་པོ་ *bzo dod po* is analyzed as the combination attached to a verb? In བྱང་ *byang*_{\<V\>} "to master" (< future tense of the independent verb འབྱང་ *vbyang*), the root + the affix constitutes བྱང་ཆ་ *byang cha*_{\<N\>} "proficiency", བྱང་པོ་/བྱང་པ་/བྱང་མ་ *byang po/pa/ma*_{\<ADJ\>} "skillful, sophisticated". According to its meaning, "to master" is a mode of behavior, and thus can be extended to refer to a habit (habitual behavior). In such a way, the verb is converted to a noun denoting abstracts. It will be illustrated with some specific instances.

Based on the analysis of inner structure, དུ་བྱང་ལངས་པོ་ *ngu byang lang(s) po* is analyzed in three approaches:

a. [དུ་_V[བྱང་_Nལངས་_Vཔོ་]]_{ADJ} [ngu _V+[byang _N+lang _V+ po]] _{ADJ} [8]

b. [[དུ་_V+བྱང་_N]_{NMZ}+[ལངས་་པོ་]_{ADJ}]_{ADJ} [[ngu _V+byang _N]_{NMZ}+[lang_V po]_{ADJ}]_{ADJ}

c. [[[དུ་_V+བྱང་_N]_{NMZ}+ལངས་_V]_V+པོ་]_{ADJ} [[[ngu _V+byang _N]_{NMZ}+lang_V]_V+po]_{ADJ}

Approach a. takes བྱང་ལང་པོ་ *byang lang po* as a whole without further analysis of inner structure, called, in Zhou's view, movable word ending. The point of Approach b. is that ལང་པོ་ *lang po* is considered as an adjective used to modify the nominalization of དུ་བྱང་ *ngu byang*, but not coincidental with the original meaning of the phrase. Approach c. is merely adopted, in which དུ་བྱང་ *ngu byang*, together with lang after it, constituting a verb or verbal phrase, possesses the property of a noun. When combined with a verb, the meaning of བྱང་ *byang* is generalized, not particularly referring to the mastery or proficiency a person has in certain aspect, but to a sort of behavioral habit. Therefore, the combination of བྱང་ *byang* and a verb makes for nominalized phrases in grammar. Furthermore, ལང་ *lang* combined with the phrase brings about a compound verb དུ་བྱང་ལང་ *ngu byang lang*. Due to *lang* being a dependent verb, it shows the autonomous representation of an event. Thus, it generates the meaning of repeated actions by means of being combined with the noun *V+byang* indicating habitual actions. For example:

13. ང་ ནི་ དགུན་ཁ་ རན་པ་ དང་ ཆམ་པ་བརྒྱབ་བྱང་ལང་པོ་ ཡོད་ །
    nga-ni dgun-kha ran-pa dang cham-pa-brgyab-byang-lang-po yod .
    I-TOP winter come and have a cold ASP
    When winter comes, I always have a cold.

14. རྨོ་ལགས་ ཁྱེད་ རང་ གློག་བརྙན་བལྟ་ དུས་ གཉིད་ཅོག་བརྒྱབ་བྱང་ལང་པོ་ འདུག་གང་ །
    rmovo-lags khyed-rang glog-brnyan-blta dus gnyid-cog-brgyab-byang-lang-po vdug gang.
    old lady you watch-film time doze(always represent) ASP
    The old lady dozes while seeing a film.

15. དཔལ་འབྱོར་ ནི་ འཛིན་གྲྭ་གྲོལ་པ་ དང་ གཞས་བཏང་ བྱང་ལང་པོ་ འདུག །
    dpal-vbyor ni vdzin-grwa-grol-pa dang gzhas-btang byang-lang-po vdug.
    dpal-vbyor TOP class-finish-NMZ and sing(always represent) ASP
    Dpal vbyor always sings after class is finished.

The discussion above focuses on the construction, meaning and syntactic function or syntactic position of adjectives of exocentric construction in Tibetan. However, in practical texts, the identification of this category of adjectives involves diversi-

fied complicated phenomena: (1) whether it can be recognized and tagged as a whole or not; (2) whether its variants can be discriminated or not. In this respect more complicated phenomena will be explored in Section 3, with an aim to provide much more references for the further establishment of machine automatic identification of this category of adjectives.

3 Complicated Variants of Exocentric Construction Adjectives

The key point for identifying exocentric construction adjectives is to give prior examination on their inner structure and syntactic distribution. Apart from basic construction mentioned above [[N$_R$+ADJ$_R$]+po$_{SUF}$], inner structure involves other variants, mainly including (1) variants of adjective affix or syntactic particles, such as ཚོ་ – *mo*$_{suffix}$, བ་ *-pa*$_{suffix}$/ བ་ *-ba*$_{suffix}$ or syntactic particle in comparative degree, ཤོས་ *shos*$_{syntactic particle in superlative degree}$, ལོས་ *los*$_{modal adverb meaning "sure, certainly"}$ etc. (2) omission of suffix པོ་ *-po* etc. in particular conditions. For example:

16. བ་ཚང་   གི་   ཟུར་ ཞིག་ ཏུ་   ས་དོང་   གཏིང་རིང་བ་   ཞིག་ འདྲུས །

    ba-tshang gi   zur zhig tu sa-dong gting-ring-ba zhig vdrus

    oxer   GEN side a LOC burrow   deep   a   dig

    On one side of the oxer a deep burrow is dug. (གཏིང་ རིང་བ་ *gting ring ba* is the modifier of ས་དོང་ *sa dong*)

      If the inner structure of [[N$_R$+ADJ$_R$]+po$_{SUF}$] changes, an adverbial modifier will be inserted between the noun and the adjective. This is not constituting an exocentric construction adjective. For example:

17. ཆུ་ འདི་ གཏིང་   ཤིན་ཏུ་   རིང་   བས །

    chu vdi gting shin-tu ring   bas.

    river here depth rather   deep/long ASP

      This river is rather deep. (བས་ *bas* is the omitted form of བ་གིས་ *ba gis*. See Sent. 23)

18. ཁོ་ ནི་   ཁ་ འཇམ་ གཏིང་   གནག་གི་   མི་   ཅིག་ རེད །

    kho ni   kha vjam gting   gnag-gi   mi   cig red.

    3sg TOP mouth gentle (heart)buttom venomous-GEN person a   is

    He is a person stainless in words but foul in deeds.

      In the sentence, ཁ་འཇམ་པོ་ *kha vjam po* and གཏིང་གནག་པོ་ *gting gnag po* have the corresponding meaning of "an iron hand in a velvet glove" , omitting the suffix and constituting the phrase with a possessive case marker as the preposed modifier.

19. རྫོང་   དེ་ གཞིས་ཀ་རྩེ་   ནས་ ཐག་རིང་ལོས་ ཡོག་རེད །

    rdzong de gzhis-ka-rtse nas thag-ring-los yog-red.

    county that gzhis-ka-rtse ABL far   ASP

    It is too far from gzhis-ka-rtse to that county.

      The modal adverbial ལོས་ *los* "certainly" usually is followed after an adjective. And then པོ་ *–po* in རིང་པོ་ *ring po* is omitted.

20. ཁྱེད་རང་   ནི་ མི་ ཆུང་   ཁ་བདེ་   རང་ རེད །

    khyed-rang ni mi   chung kha-bde   rang red.

    you-self   TOP person small   mouth-sharp rather is

You are a rather base person, eloquent but without truth.

When the adverb རང་ *rang* "rather" is added after *kha bde po* "eloquent", པོ་ *po* is omitted.

21. འབྲོག་ལས་   ཡིན་ན་   བོད་ལྗོངས་ཀྱི་   དཔལ་འབྱོར་ཁྱབ་ཁོངས་   ནང་གི་
    vbrog-las   yin-na bod-ljongs-kyi dpal-vbyor-khyab-khongs nang-gi
    husbandry TOP Tibet-GEN   economy-field   in-GEN
    གལ་ཆེ་   ཤོས་   ཀྱི་   གྲས་ ཅིག་ རེད།
    gal-che   shos kyi   gras cig red
    important most GEN type a   is

    Husbandry is an important type in economy field of Tibet. (གལ་ཆེ་ *gal che* is modified by the particle ཤོས་ *shos* which indicates the superlative degree)

    Syntactic distribution position is estimated according to its syntactic function, mainly involving predicate context and modifier context. Exocentric construction adjectives as predicates can be identified in accordance with predicate aspect markers at the end, and pronouns, nouns, topic markers and other identifiable units.

22. ཡིན་ནའི་   དེང་སང་   ཡིག་ཚད་   རན་ཙང་   བྲེལ་བ་ཆེན་པོ་   བྱུང་།
    yin-navi deng-sang yig-tshad ran-tsang brel-ba-chen-po byung.
    but   recently   exam   should-so busy   ASP
    But recently we should have an exam, so I'm busy.

    In such a case, disyllabic nouns བྲེལ་བ་ *brel ba* and ཆེན་པོ་ *chen po* constitute the adjective. བྱུང་ b*yung* at the end of the sentence, whose original meaning is "occur, happen", is also frequently-used aspect marker and here as a realization aspect marker.

23. སུང་ཅང་   གིས་ " ཁྱོད་གི་   བུ་མོ་   ཧམ་པ་ཆེ་བས་   ངས་   བསད་ པ་ཡིན་ " ཞེས་ བཤད།
    sung-cang gis " khyod gi bu-mo   ham-pa-che-ba-s nga-s bsad pa-yin" zhes bshad.
    Song-Jiang AG 2sg-GEN daughter rude-V-ASP   1sg-AG kill ASP   say
    Song Jiang said, "your daughter is too rude, so she has been killed by me." (from *The Mashes of Mount Liang*)

    ཧམ་པ་ཆེ་བས་ *ham-pa-che-bas* acts as adjective predicate of the sentence, in which -ས་ -*s* bound to བས་ *bas* is the spoken form of durative aspect གིས་ *gis*, equal to གི་འདུག་ *gi vdug*, so the preceding context is the noun བུ་མོ་ *bu mo*.

24. ཁྱེད་རང་   གི་   སྤུ་གུ་   འདི་ ནི་   དུ་བྱང་ལང་པོ་   འདུག་   ག
    khyed-rang gi   spu-gu vdi ni   ngu-byang-lang-po vdug   ga .
    you-youself-GEN   child   this TOP cry(always)   ASP   MOOD
    This child of yours are always crying.

    According to the analysis of the preceding section, དུ་བྱང་ལང་པོ་ *ngu byang lang po* "lachrymose" on the whole is considered as an adjective, which is followed by the resultative aspect marker *vdug*, and *ni* as its preceding topic marker.

25. ཇག་པ་   དེ་ཚོ་   དེ་ འདྲའི་   ཧམ་པ་ཆེ་བ་   ལ།
    jag-pa de-tsho de-vdravi ham-pa-che-ba la.
    bandit that-PL so-GEN audacious   ASP/MOOD
    That gang of bandits are so audacious.

    Adjective predicate sentences in Lhasa dialect occasionally allow ལ་ *la* as aspect marker and mood markers to bring themselves to end.

    Exocentric construction adjectives, just like conventional adjectives, usually serve as post posited modifiers. If there are multiple postpositive modifiers , they are even placed rear, such as Sentence 20. The prepositive modifiers serving as nouns are

in most cases followed by possessive case markers, while they acting as adverbials are usually followed by adverbial markers. See 6-10 for relevant examples. Here more complicated cases are examined.

26. ལྡེབས་རིས་ ནི་ པོ་བྲང་པོ་ཏཱ་ལའི་ གལ་ ཆེའི་ གྲུབ་ ཆ་ རེད།
    ldebs-ris ni   pho-brang-po-taa-lavi gal chevi   grub-cha   red .
    mural   TOP the Potala Palace-GEN   important-GEN component is
    Murals are an important component of the Potala Palace.

    Tibeto-Chinese Lhasa Vernacular Dictionary collects གལ་ཆེ་ *gal che*, without tagging its part of speech (it is excluded from other dictionaries). We speculate that the addition of a possessive marker, coordinated antithesis (Sent.18) , and the demands of rhythmical syllables give rise to disyllabic adjectives which are the representation of trisyllabic adjectives. However, most of them can return to the original affixes. For example, སྟོབས་ཆེན་ *stobs chen* and སྟོབས་ཆེན་པོ་ *stobs chen po* "muscular", བློ་བདེ་ *blo bde* and བློ་བདེ་པོ་ *blo bde po* "reassuring", are taken as the omitted forms of གལ་ཆེ་ *gal che(n) po*.

27. ང་ཚོ་ བོད་རིགས་ཚོ་ས་ ལོ་ གསར་གྱི་ སྐབས་ ལུག་མགོ་ བཙོས་ཡས་ དེ་
    nga-tsho bod-rigs-tsho-s   lo-gsar kyi   skabs lug-mgo btsos yas   de
    1-Pl   Tibeten People-AG NewYear-GEN time   sheephead cook-NMZ that
    gal-chen-po brtsi   gi red.
    གལ་ཆེན་པོ་   བརྩི་   གི་རེད།
    important   view-FUT ASP

    It is important that our Tibetan people are going to cook the sheephead during the time of New Year.

    The original meaning of བརྩི་ *brtsi* in the sentence is "to calculate" (with a noun as its object). Later on, it is generalized and then derived the meaning of "to plan, to intend" (with a verb as its object). In the process, the grammatical meaning of "to be going to" is generated as a result of further reduction. It is inappropriate to regard གལ་ཆེན་པོ་ *gal chen po* as a nominal phrase denoting "crucial moment" for the reason that གལ་ *gal* cannot be used independently, and that *rtsi* should be followed by a verbal object. Therefore, it is assumed that གལ་ཆེན་པོ་ *gal chen po* serves as an adjective after the loss of its usage as a verb. Nevertheless, in the sight of identification, the construction རྩི་ *rtsi*+ an aspect marker can be treated as a common verb-object construction.

28. བྲེལ་བ་ཚ་པོ་ ཞེ་དྲགས་ མེད་པའི་ ཅ་ལག་
    brel-ba-tsha-po zhe-drags med pavi   ca lag
    hasty   very   notBe-NMZ-GEN stuff
    མོ་ཊའི་   ནང་ ལ་ བཏང་ གི་ཡོད། །
    mo-tavi   nang la   btang gi yod.
    motor-GEN   home-LOC place ASP
    The stuff, as not strictly needed, should be transported by motor.

    In the sentence, after being nominalized, the predicative sentence of the adjective བྲེལ་བ་ཚ་པོ་ *brel ba tsha po* serves as the modifier of ཅ་ལག་ *ca lag*. It is somewhat complicated that there are both adverb and a negative in the phrase.

29. ཁོ་ སེར་སྣ་ ཚ་ ཆ་ ལོས་ གང་འདྲས་ གཅིག་ ཡོག་ རེད། །
    kho ser-sna tsha   los   gang-vdras gcig yog-red.
    he miserly too   how   a   have
    To what extent is he too miserly.

This is an existential sentence (possession). However, we can find other abstract things with their subjects having no case marker. The adverb གང་འདྲས་ *gang vdra* "how" is postpositioned to modify the adjective ཚ་ལོས་ *tsha los*. Then the whole phrase modifies the noun སེར་སྣ་ *ser sna*. In other words, སེར་སྣ་ཚ་ལོས་ *ser sna tsha los* does not a constitute exocentric construction adjective.

30. བུ་མོ་   རྒན་པ་   ནི་   ལོ་   བཅུ་བཞིར་   སླེབས་   ཚམ་   ཡིན་ཡང་
   bu-mo   rgan-pa ni   lo   bcu-bzhi-r   slebs tsam   yin yang
   girl   older   TOP   year   ten-four-LOC   arrive   about   likewise
   རྒན་བཟོ་དོད་པོ་   ཞིག་   ཆགས་   ཡོད་
   rgan-bzo-dod-po zhig chags   yod.
   old-age   a   appear   ASP
   The older girls about fourteen years old appear to be old age likewise.

In the light of the revision of many dictionaries, རྒན་ *rgan* does not constitute a di-syllabic word with བཟོ་ *bzo*, and therefore cannot be regarded as being modified by དོད་པོ་ *dod po*(in general cases, བཟོ་དོད་པོ་ *bzo dod po* is excluded from dictionaries). རྒན་བཟོ་དོད་པོ་ *rgan bzo dod po* "old age, senescence" is included as an adjective in both *Tibeto-Chinese* and *Lhasa* dictionaries. Thus, there is a paradox in such a sentence, for if the word རྒན་བཟོ་དོད་པོ་ *rgan bzo dod po* serves as a predicate, then ཆགས་ཡོད་ *chags yod* has to be taken as a form of special predicate sentence ending. Furthermore, it is imperfect if ཞིག་ *zhig* serves as an adverb or a numeral, and certainly complicated when it is spoken in practical expressions.

4   Conclusion

Exocentric construction adjectives, in practice, came out in Tibetan at earlier times. Because of the ambiguous existence of nominal phrases and adjectivization, they are discriminated from other constructions. The well-known Tibetan historical document *Ba Xie* (written in the 8th century or the 11th century) records such a construction in many places. Hereby is an example below:

31. བོད་ཀྱི་   བསོད་ནམས་   ཉམས་པ་   དང་   འདྲེ་སྲིན་   ཀུན་   མགོ་རྒོད་པས་།
   bod kyi   bsod-nams nyams-pa dang vdre-srin kun   mgo-rgod-pa-s,
   Tibetan-GEN welfare   decay   and   demon   all   head undomesticated
   མི་   ནག་པོ་   ཀུན་   གྱི་   གློ་བ་   ར་   གསོལ་ ནས་།
   mi   nag-po kun gyi glo-ba ra   gsol nas.
   person black   all-GEN hearts LOC   accept
   Tibetan's Buddhism decays and demons who are rampant recklessly perplex nu-merous persons fond of the wicked industry. (*Ba Xie*)

In the context of the sentence, མགོ་རྒོད་པ་ *mgo rgod pa(po)* should be clearly ana-lyzed as an adjective predicate, parallel with the verb ཉམས་པ་ *nymas pa*, in which -ས་ *–s* is the predicate ending, meaning "barbarous and unruly". If we analyze such a construc-tion independently, the ambiguity is indeed in existence. For example, མགོ་གྲུང་པོ་ *mgo grung po* can be interpreted as a nominal phrase "brilliant brain" or as an exocentric

construction adjective "intelligent". The latter, hence, can modify any other nouns: མི་མགོ་གྲུང་པོ་ *mi mgo grung po* "an intelligent person".

This paper discusses the machine automatic identification and the tagging of linguistic phenomena aiming to provide references for further studies. It will also practically enlighten the compiling of Tibetan dictionaries, language teaching and learning , and Tibetan translation. It is especially worthy of notice that exocentric construction adjectives can be taken as an independent unit and thus established as a standard of the identification of particles. By far, Guan Bai, in his discussion, has mentioned this phenomenon as a particle unit, which are called compounds of a noun + an adjective with transferred meanings[9]. For example, གནམ་སྔོན་པོ་ *gnam sngon po* "blue sky" is a phrase. However, when the meaning is as a metephor transferred, it is used as a folk oath "testimony by God"(simply included in *Tibeto-Chinese Dictionary* as *"gnam dpan du vdzugs pavi mnav tshig cig" As God as my witness*). Here, "blue sky" is transferred to "God", distinctly different from གནམ་དྭངས་པོ་ *gnam dwangs po* "sunny day". In this connection, we do hope that the discussion will draw the continuous exploration of this linguistic phenomenon in academic circle so as to deepen ontological studies on Tibetan grammar.

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