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Grammaticalization and Lexical Expression of Tropative from a Typological  
Perspective

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**Abstract**

This report is dedicated to typology of tropative, which is a verbal derivational category having a meaning “X considers Y to be Z”. This term (from Vulgar Latin *tropare* — to find) was introduced in Pierre Larche’s article about Classical Arabic language. In the report, verbs and clauses with a similar semantics and also a derivational category having a meaning “Y is considered to be Z” (*reverse tropative*) are considered. During the research, 169 natural, 14 constructed and 4 extinct languages were processed separately using a *cross-section method*, which involved an online questionnaire offered to native speakers of natural languages and users of constructed languages. Survey participants translated sentences containing *direct* and reverse tropative from Russian, English, Persian, Spanish, or Ukrainian language. As a result, tropative systems of processed languages were categorized by the tropative grammaticalization degree, direct and reverse constructions correlation and some other parameters. Expectedly, 186 of 187 languages appeared to be able to express some type of tropative with a single exception of Arrernte. The most standard situation is a tropative expressed lexically (Z not incorporated into verb) but using 1 finite clause. In this case a tropative verb is more often polysemic (e.g. Turkish *saymak* or Arabic *hasiba* “count”, Persian *dānestan* “know”) than monosemic, reverse tropative is a passivation of a direct one (however, there are some languages with independent reverse constructions, like Zulu or North Russian Romani).

**Keywords:** tropative, grammaticalization degree, typology, direct and reverse constructions.

**Introduction**

Tropative is a lexical derivational category having a meaning “X considers Y to be Z”. This term was introduced in [Larche 1996] and used again in [Jacques 2013] with a meaning “an affix constructing a verb ‘to find Z’ from an adjective Z or a verb ‘to be Z’”. X is to be named *subject*, Y is an *object*, Z is a *characteristic*.

However, in this article verbs and clauses with a similar meaning will also be considered. Furthermore, Larche and Jacques describe *direct positive* constructions only. This article also turns to *reverse* (i.e. “Y is considered to be Z”) and *negative* (i.e. “X does not consider Y to be Z” or “Y is not considered to be Z”) ones.

There are different approaches to defining tropative, which are all used in my paper:

1. *Grammaticalized (morphological)* — original definition (i.e. an affix forming a verb “to consider to be Z” from a verb “to be Z” or a noun/adjective Z). Must be integrated into characteristics.
2. *Syntactical* — like a finite clause in a form of a triadic predicate T(X, Y, Z), tropative can be either grammatical or lexical (i.e. expressed with a verb). Must be expressed with 1 finite clause.
3. *Semantical* — like a statement ‘Subject X has an opinion, that object Y is Z’, expressed either syntactically or with a polypredicative construction. All the elements must be specified.
4. *Basic* — a conception of a personal meaning about some object, expressed either with semantical tropative or with a statement of a type ‘Y is supposedly Z’

### **Classification of tropative constructions**

Let us consider 5 situations to contrast approaches mentioned in Introduction:

1. Arabic: *h-b-b* “to be desirable or favourite” – *ista-h<a>bb<a>* “to like, to consider to be favorite”, *h-r-m* “to be prohibited” – *ista-hr<a>m<a>* “to consider to be prohibited”
2. A clause of a type “I find him smart”
3. A polypredicative construction of a type “I think that he is smart”
4. A sentence of a type “Y is probably Z” (subject is not specified, no difference between direct and reverse constructions)
5. A sentence of a type “Y is Z” (no explicit meaning of opinion)

Sentence/Definition	Grammatical	Syntactical	Semantical	Basic
1	tropative	tropative	tropative	tropative
2	no	tropative	tropative	tropative
3	no	no	tropative	tropative
4	no	no	no	tropative
5	no	no	no	no

Thus, sentence 1 is definitely a tropative construction and sentence 5 is definitely not. As far as sentences 2 to 4 are concerned, they might be or not be considered as tropative. In terms of this article, all of them are to be named tropative and classified in correspondence to a number of a sentence (sentence 1 is the 1<sup>st</sup> class, while sentence 4 is the 4<sup>th</sup> one).

### **Method of research**

During the research, elicitation method variant called *cross-section method* was used. This means that examples of tropative constructions were received from informants. It is different from classical elicitation in the way that the shortest possible questionnaire for translation is offered instead of a proper one, and fillers (sentences not connected to the topic under examination) are not used.

This method involves informants translating 4 sentences:

1. I consider him to be intelligent.
2. He is considered to be intelligent
3. I do not consider him to be intelligent
4. He is not considered to be intelligent

From Russian, English, Persian, Spanish or Ukrainian.

The reason for application of a method other than traditional, which is grammarbooks and vocabularies analysis, is the fact that tropative is rarely grammaticalized — i.e., it is usually expressed with a separate lexeme, subordinate clause, etc.. Thereby, it is rarely mentioned in grammar descriptions: no information about tropative was found in grammarbooks of languages with tropative class 2 to 4, and it might be ignored even in class 1 languages. This method (as well as standard elicitation) does not allow to explore all means of expressing tropative in a language, but that is not the purpose of research. Furthermore, negative statement (i. e. statement about absence of tropative) is not made: tropative class might be upgraded further, but not downgraded.

The reason for using cross-section method instead of standard elicitation is its usability on minor and endangered languages. It is almost impossible to collect data from several native speakers of many languages, thus, it is necessary to use available data from 1 informant without any generalization. Furthermore, using this method on major languages as well as minor ones allows the research to be methodically uniform. The second reason is

convenience for participants not having to fill in a large questionnaire. The risk of an informants' mistake is a disadvantage that cannot be avoided.

During the research, 187 languages were processed: 169 of them are natural, 14 are artificial and 4 are extinct. Typological conclusions are only based on natural non-extinct languages.

### **Models in natural languages**

#### *1<sup>st</sup> degree models*

1<sup>st</sup> class languages are those containing 1<sup>st</sup> degree constructions (Arabic type). It must be admitted that 1<sup>st</sup> class of tropativity is quite a rare feature. 2 main parameters exist to classify grammaticalized tropative:

A. *Strong* (1) tropative can be applied to any stem of a certain type, while *weak* (0) one can be applied just to some stems.

B. It might be either monosemic (1) or polysemic (0).

All 4 combinations exist, e.g.:

A1B1 in Lakota:

(1) *wakhan* 'sacred' — *wakhan-la* 'to find sacred'

(2) *ksapa* 'intelligent' — *ksapa-laka* 'to find intelligent'

A1B0 in Chukchi (*ly* – triadic predicate copula (can mean 'to consider smb to be smb', 'to set or hire smb to be smb', etc.)

A0B1 in Turkish:

(3) *kötu* 'bad' — *kötu-mse-mek* 'to consider bad'

(4) *akıllı* 'intelligent' — *\*akıllımsamak*

A0B0 in Nanai:

(5) *ule* 'good' — *ule-si-uri* 'to consider good'

(6) *sebden* 'funny' — *sebden-si-uri* 'to have fun'

(7) *murunku* 'intelligent' – *\*murunkusiuri*

#### *2<sup>nd</sup> degree models*

2<sup>nd</sup> degree constructions might be used both in class 1 language as an additional way of tropative expression, and as a main type (2<sup>nd</sup> class language) if grammatical tropative is not detected. 2<sup>nd</sup> degree models exist in the majority of languages, and in most cases, they are the main type to express tropativity. 1 main parameter exist to classify syntactical analytical (i. e. non-grammaticalized) tropative, which is a polysemy of a tropative verb.

E.g., Ukrainian language tropative model includes 2<sup>nd</sup> class monosemic construction. Verb *vvažati* 'to have an opinion' is used.

There is a wide range of lexical meanings for polysemic tropative verbs. The most common of them are:

- The verb "to count" (e.g., Russian *sčitaj*, Latin *putare*, Persian *be hesāb āvardan*, Arabic *h-s-b*)
- The verb "to know" (e.g., Persian *dānestan*, Talish *zinə*)
- Perception (e.g. Greenlandic *isigi-*, Breton *-aneañ* 'see')
- Speech (e.g. Dolgan *diə* 'say')
- Possession (e.g. Polish *mieć* 'have', English *find*, Lithuanian *laikyti* 'hold')

#### *3<sup>rd</sup> degree models*

3<sup>rd</sup> degree constructions might be used both in class 1-2 languages as an additional type of construction, and as a main type (3<sup>rd</sup> class language) if syntactical tropative is not detected. As a rule, semantical polypredicative (i.e. non-syntactical) tropative construction looks like this, e.g. Kashubian:

(8) *jô mēsł-ã ze òn je mądri*  
 1sg think-1sg CONJ 3sg.m COP.3sg intelligent  
 “I think he is smart” (Kashubian)

2 clauses: *jô mēsłã* “I think” and *òn je mądri* “He is smart”.

But actually, it is not essential that X be a subject of a main clause. An example can be found in Tok Pisin:

(9) *tingting bilong mi, em i saveman*  
 opinion belong 1sg 3sg be.3sg intelligent  
 “Opinion belongs to me, that he is smart”

X (1sg) is an object of a main clause.

#### *4<sup>th</sup> degree models*

4<sup>th</sup> degree constructions might be used both in class 1-3 as an additional way to express tropative, and as a main type (4<sup>th</sup> class language) if semantical tropative is not detected. Descriptive (non-semantical) tropative construction looks like this:

(10) *akamai ‘o ia mana’o ‘o ia*  
 intelligent be.3sg 3sg opinion be.3sg 3sg  
 “There is an opinion that (s)he is smart” (Hawaiian)

X is not expressed, no difference between direct and reverse constructions. X is 1sg if not stated by the context.

#### *Unique model in Arrernte*

It is not actually obligatory to express tropative explicitly. Even in class 1-4 languages it is possible to use a sentence “Y is Z” in a meaning close to class 4 construction despite the fact that the source of information, which is a personal meaning, is not expressed. However, Arrernte model is unique because such sentence is a main type of construction in that language — no tropative is detected at all. Informant, a native speaker of Arrernte, answered:

“(0) *re akeltye*  
 3sg smart

‘(S)he is smart’

is ‘He is knowledgeable’. Something either is, or isn’t. ‘Consider’ is a shade of grey from English”. This answer means that personal opinion cannot be expressed explicitly at all — only the information is stated without mentioning the source of it.

#### *Direct-reverse symmetry and asymmetry*

Correlation between direct and reverse tropative constructions in a language is also explored. As a rule, reverse construction is a result of grammatical passivation of a direct one. Those languages are called *direct-reverse symmetric*. Direct-reverse asymmetric languages also exist. There are 3 types of asymmetry:

1) Direct constructions are formed syntactically, while reverse constructions are replaced with direct ones, X is either 3pl, or indefinite, or Y. Such type of asymmetry was found in Silezian:

(11) *Jo mum go za inteligyntn-ego*  
 1sg have.1sg 3sg.ACC PREP intelligent-m.ACC  
 “I consider him to be intelligent”

(12) *maj-um go za inteligyntn-ego*  
 have-3pl 3sg.ACC PREP intelligent-m.ACC  
 “They consider him to be intelligent”

2) Reverse constructions are formed syntactically, while direct ones belong to the 3<sup>rd</sup> class. Such type of asymmetry was found in North Russian Romani:

(13) *Me gin-av so jov syi godjavir*

- 1sg count-1sg CONJ 3sg COP.3sg intelligent  
‘I think (s)he is smart’
- (14) *Jovsyi gin-ela-pe godjavir*  
1sg COP.3sg count-3sg-PASS intelligent  
‘(S)he is considered to be smart’
- 3) Both types are formed syntactically, but different verbs are used. Such type of asymmetry was found in Zulu:
- (15) *ngi-ca<ba>nga uhlakanipha*  
1sgS-think<3sgO> intelligent  
‘I consider him (her) to be intelligent’ (monosemic verb *uku-ca<ba>nga* is used)
- (16) *u-bheka uhlakanipha*  
3sg-look intelligent  
‘(S)he is considered to be intelligent’ (the verb *uku-bheka* ‘to look’ is used)

*Positive-negative symmetry and asymmetry*

Correlation between positive and negative tropative constructions in a language is also explored. Almost always negative construction is a result of grammatical negation of a positive one. Those languages are called *positive-negative symmetric*. Single positive-negative asymmetric language is known, which is Aymara (in reverse constructions). In that language, both types are formed syntactically, but different verbs are used.

- (17) *jupa chi'qhi-ta siwa*  
3SG intelligent-ABL say.PASS  
‘I do not consider him (her) to be intelligent’ (the verb *siwa* ‘to be told about’ is used)
- (18) *jupa jan chi'qhi-ru unta-si*  
3sg NEG intelligent-ALL see-PASS  
‘(S)he is not considered to be intelligent’

**Models in constructed languages**

This part is the most unusual in the research from the view of traditional typology and theoretical linguistics in general. Obviously, such type of research has some disadvantages. Firstly, an author of a language can set exact rules, so, the chance of some question being ungoverned is lower. However, this is not applicable when language community is large. On the other hand, an author might manage the question after being asked, which will not allow to get information about usage of tropative (or any other construction) under normal circumstances. This risk might be omitted by avoiding participation of authors and excluding individual languages (those not having any community other than author(s)) from sample or separating community languages from individual ones. The other argument against constructed language processing in typological research is that constructed languages (except for Esperanto) are not native for any user, so, answers might be influenced by a native language of an informant. This risk cannot be omitted and must be always considered. However, introducing a special subsample for constructed languages separated from the rest of the typological sample indicates that difference between natural and constructed languages is taken into account. Furthermore, the main reason for ignoring constructed languages is probably a tradition.

But it also has a lot of advantages. Firstly, including constructed languages into typological research would help to compare the grammar models of constructed languages with those of natural languages and realize if non-native status of constructed languages really influences the answers. Furthermore, it would help to realize which models might be considered the easiest/the most difficult by authors of languages (speakers’ attitude towards

grammar) and selected depending on the purpose of a language, which is useful both for typologists and for language constructors. Finally, it will increase awareness of constructed language issues.

*Tropative in Esperanto*

Esperanto was designed to be *progressive*, i. e. as easy to learn as possible. It means that constructions used in it should have been the easiest. The research has shown that Esperanto tropative is 2<sup>nd</sup> class monosemic, direct-reverse and positive-negative symmetric.

- (19) *mi opini-as li-n saĝa homo*  
1sg consider(trop.)-pres 3sg-ACC intelligent person  
“I consider him/her to be intelligent.”
- (20) *li opini-at-as saĝa homo*  
3sg consider(trop.)-pass-pres intelligent person  
“(S)he is considered to be intelligent.”
- (21) *mi ne opini-as li-n saĝa homo*  
1sg NEG consider(trop.)-pres 3sg-ACC intelligent person  
“I do not consider him/her to be intelligent.”
- (22) *li ne opini-at-as saĝa homo*  
3sg NEG consider(trop.)-pass-pres intelligent person  
“(S)he is not considered to be intelligent.”

*Tropative in Klingon*

Klingon was designed to be *regressive*, i. e. as unnatural and difficult to use as possible, because due to “Star Trek” plot it was to be used by an alien race. The research has shown that Klingon tropative is 2<sup>nd</sup> or 3<sup>rd</sup> class, polysemic (the verb ‘to believe’ is used), positive-negative symmetric and direct-reverse asymmetric (direct constructions in the meaning of reverse ones). It is doubtful if 2<sup>nd</sup> class can be assigned because ‘e’ might be considered a subordinate clause marker, but the verb *Har* is transitive.

- (23) *val ghaH ‘e’ vI-Har*  
intelligent 3sg TOP 1S.3O-believe  
“I consider him/her to be intelligent.”
- (24) *val ghaH ‘e’ Har-lu’*  
intelligent 3sg TOP believe-0S.3O  
“(S)he is considered to be intelligent.”
- (25) *val ghaH ‘e’ vI-Har-be’*  
intelligent 3sg TOP 1S.3O-believe-NEG  
“I do not consider him/her to be intelligent.”
- (26) *val ghaH ‘e’ Har-lu’-be’*  
intelligent 3sg TOP believe-0S.3O-NEG  
“(S)he is not considered to be intelligent.”

*Tropative in Emoji*

This part of research is the most controversial — not only because it is a part of constructed language processing, but also because it is not typical at all to process Emoji even from the view of traditional constructed language studies. Again, tradition is probably the most important reason for leaving Emoji without any attention. Non-native status of Emoji is its common feature with almost all constructed languages. The rational disadvantage of this subpart (not shared with the rest constructed part) is that Emoji lacks

grammar. However, separating Emoji from the rest of the constructed subsample indicates that difference between usual conlangs and Emoji is considered.

Firstly, processing Emoji would help to compare its model to grammar models of standard constructed and natural languages. Furthermore, it is meant to increase awareness of linguistic issues of Emoji.

Absence of grammar will help to realize which constructions are the most iconic and understandable, because this language was designed to be universal. Its purpose is common with Esperanto, so it must be expected that their models have much in common.

The research has shown that Emoji tropative is 2<sup>nd</sup> class and positive-negative symmetric as well as Esperanto, but unexpectedly direct-reverse **asymmetric**.

- (27)     think   intelligent  
1sg-ZWJ-m      3sg-ZWJ-m  
“I consider him/her to be intelligent”
- (28)     
3sg-ZWJ-m      be.famous      intelligent  
“(S)he is considered to be intelligent”
- (29)      think   intelligent  
1sg-ZWJ-m      NEG      3sg-ZWJ-m  
“I do not consider him/her to be intelligent”
- (30)      
3sg-ZWJ-m      NEG      be.famous      intelligent  
“(S)he is not considered to be intelligent”

## Conclusion

As a result of research, the following conclusions were made:

1. Several classes of tropative systems exist, and the 2<sup>nd</sup> one, which is syntactical analytical, is the most common.
2. 1<sup>st</sup> class tropative can be strong (applicable to any stem) or weak (applicable to some stems), monosemic or polysemic.
3. 2<sup>nd</sup> class tropative can be monosemic or polysemic. The most common polysemy is mental or possessive.
4. Reverse constructions are usually a result of direct constructions grammatical passivation, but there are some exceptions (of different types: syntactical expression of only 1 type or independence of constructions).
5. Negative constructions are usually a result of positive constructions grammatical negation, but there is a single exception of Aymara.
6. 2<sup>nd</sup> class tropative with no exceptions on Rules 4 and 5, might be considered the easiest (therefore it is used in Esperanto), but direct-reverse asymmetric (with independent constructions) system is also iconic (therefore it is used in Emoji), but direct-reverse asymmetric system with direct constructions only might be considered the most difficult (therefore it is used in Klingon).

To sum up all the research, HSE Tropative Database (<http://artemorekhov1999.pythonanywhere.com>, might be modified soon) was designed

together with colleagues, Senior Instructor Oleg S. Volkov and BA student Artyom I. Orekhov.

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## **Conventional notations**

- 1, 2, 3 - 1st, 2nd, 3rd person  
0 - indefinite person  
S - subject (agent), O - object (patient)  
sg - singular, pl - plural, du – dual  
m - masculine, f – feminine  
pres - present tense  
ACC - accusative case  
INS - instrumental case  
ABL - ablative case  
ALL - allative case  
COP – copula  
ep – epinthese  
EQU – equative  
evid – evidentiality  
ind – indicative  
ipfv – imperfective  
NEG – negation  
PASS - passive voice  
supp – suppose  
ZWJ - zero-width joiner