

Transitivity in Turkish* —A study of valence orientation—

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In this paper, I examine verbal derivation in Turkish through a comparison between Old Turkic (Orkhun script) and other Turkic languages spoken in Central Asia. In particular, I examine the direction of verbal derivation of transitives and intransitives. Furthermore, I have carried out statistical analysis of transitive and intransitive verbs found in a representative Turkish-Japanese dictionary.

Keywords: causative, anitcausative, intransitivization, transitivity, valence

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1. Introduction

Turkic languages, including Turkish, have agglutinative morphology and suffixing, and have been referred to as belonging to the ‘Altaic type’ by Japanese linguists (Kamei, T., Kono, R., and Chino, E. (eds.) 1995). This creates, with some exceptions, a one-to-one relationship between morphology and function. In this paper, I examine verbal derivation in Turkish through a comparison between Old Turkic (Orkhun script) and some other Turkic languages spoken in Central Asia. In particular, I examine the direction of the verbal derivation of transitives and intransitives. Furthermore, I have carried out a statistical analysis of transitive and intransitive verbs found in a representative Turkish-Japanese dictionary. Contrary to previous analyses (e.g., Haspelmath (1993); Nichols, Peterson, and Barnes (2004)), I have found that the number of Turkish verb pairs with a transitive to intransitive derivation are almost the same as those with an intransitive to transitive derivation.

Turkish - Language Profile

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- (a) Location: Republic of Turkey and surrounding areas (Bulgaria, Greece, Iran etc.) and Western Europe.
- (b) Genetic affiliation: Turkic Languages
- (c) Number of the speakers: 88,000,000~
- (d) Phonology:
 - (d-1) phonemes:
 - /a, e, ɪ, i, o, ö, u, ü/
 - /m,n,p,b,t,d,c,j,k,g,ŋ,ðʒ,f,s,z,ʃ,ʒ,h,v,ʎ,l,j,w,r/
 - (d-2) suprasegmental phonemes: stress
- (e) Morphosyntax
 - (e-1) agglutinating
 - (e-2) suffixing
 - (e-3) Both head and dependent marking, and head marking
 - (e-4) non-configurational
 - (e-5) case system: NOM-ACC
 - (e-6) constituent order
 - (e-6-1) relative order of A, S, O, and V: SV, AOV
 - (e-6-2) postposition
 - (e-6-3) adjective + noun
 - (e-6-4) AC + noun (AC: adnominal clauses)
- (f) Written tradition

2. Intransitivization and Transitivity in Turkish

We briefly review intransitivization and transitivity in Turkish. The predicate of (1b) is a transitive verb formed from the intransitive verb in (1a).

- (1) a. Çamaşır-lar kuru-yor. Intransitive
 laundry:PL dry:PROG
 “The clothes are drying” [Remark 4]
- b. Çamaşır-lar-ı kuru-t-uyor. Transitive
 laundry:PL-ACC dry:CAUS-PROG (dictionary entry form: *kurut-*)
 “Someone is drying the clothes.”
- c. Çocuk-lar-a çamaşır-lar-ı kuru-t-tur-uyor. Productive Causative
 child:PL-DAT laundry:PL-ACC dry:CAUS-CAUS-PROG
 “Someone is making the children dry the clothes.”

Turkish transitives are formed by adding a causative morpheme *-Dir, -t, -It, -Ir, -Ar, -Art* to an Intransitive stem. The intransitive root + a causative suffix is sometimes

lexicalized and labeled as a transitive verb in the Turkish dictionary in general as shown in (1b) (referred to as the pseudo-causative by Lewis 1990:152, or the **direct-manipulative causative** by Shibatani and Pardeshi 2002). The distinction between **direct causative** and **indirect causative** depends on whether the causee can be expressed overtly. Therefore, (1c) allows a causee (*Çocuk-lar-a*), and thus, it qualifies as an **indirect causative**.

The predicate of (2b) is an example of an intransitive verb derived from the transitive verb in (2a).

- (2) a. Çocuk-lar-ı yık1-yor. Transitive
 child:PL-ACC wash:PROG
 “(Someone) is washing children.”
- b. Çocuk-lar yıkan-ıyor. Intransitive
 child:PL wash:PROG (dictionary entry form: yıkan-)
 “Children are washing (themselves).”
- c. Çocuk-lar (birisi tarafından) yıka-n-ıyor. Passive
 laundry:PL someone by wash:PASS-PROG
 “Children were being washed (by someone).”

Intransitivization of a verb is formed by adding a **passive**, **reflexive**, or **reciprocal** suffix such as *-Il*, *-(I)n*, or *-(I)ş*, respectively. The transitive verb stem + the intransitivizing suffix are often **lexicalized** as a causative suffix and are identified as an intransitive verb (pseudo-passive, Lewis 1990:152) in the dictionary. One cannot determine from the morphological shape alone whether the given form is intransitive or passive; only context allows for the function to be determined. In other words, if an agent is expressed overtly, it is passivization, whereas if an agent is suppressed on the lexical level, it is intransitivization. In (2b), no agent other than “children” can be found, therefore it is intransitivization. Thus, in this paper, **we differentiate causative from transitivity and passive from intransitivization**. However, there are some problems in determining whether a given verbal form is intransitive or transitive. For instance, consider the example of a transitive and an intransitive pair such as *tut-* “take” and *tut-uş-* “take each other, catch fire.” The derived intransitive sometimes has an idiomatic meaning. In this example, although *tut-* has a reciprocal suffix, it also has the idiomatic meaning “catch fire.” Thus, it is not easy to determine whether the given verbal form qualifies as transitive or intransitive.

Note that we use the term “valence increase” as a cover term for transitivity in general and “valence decrease” for intransitivization.

- (3) Transitivity (overt marking of **valence increase**) in a broad sense

a. Vi > Vt [with agent] / Vcaus [with causee]

Intransitivization (overt marking of **valence decrease**) in a broad sense

b. Vt > Vant-caus [without agent] / Vrcp / Vref

3. Direction of morphological derivation of Transitives and Intransitives: Previous studies

3.1. Haspelmath (1993)

Haspelmath (1993) argues the morphological derivation of transitives and intransitives in 31 languages, including Turkish. Haspelmath defines his classification as follows:¹

C (causative): The inchoative verb is basic and the causative verb is derived (e.g., *öl*- “die,” *öl-dür*- “kill”).

A (anticausative): The causative verb is basic and the inchoative verb is derived (e.g., *boz*- “break,” *boz-ul*- “be broken”).

E (equipollent): Both are derived from the same root (e.g., *öğre-n*- “learn,” *öğre-t*- “teach”).

S (suppletive): Different verb roots are used (e.g., *gir*- “enter,” *sok*- “put in”).

L (labile): The same verb is used both in the inchoative and in the causative sense (e.g., *as*- “exceed,” *as*- “surpass”).

A/C: Ratio of anticausative to causative pairs

% non-dir.: Percentage of non-directed pairs (E, S, L)

Haspelmath’s (1993) results for the Turkish sampling are presented in Table 1 and the A/C ratio shows that Turkish has a directed causative alternation (A/C 0.51).

Table 1							
Total	A	C	E	L	S	A/C	% non-dir.
30	9	17.5	2.5	0	1	0.51	12
(Haspelmath, 1993:101)							

3.2. Turkish verbs: Based on the revised Japanese verb list in Jacobsen (1990)

Kuribayashi (2010) presents a sampling of 353 Turkish verbs based on a revised Japanese verb list from Jacobsen (1990). This exhaustive list includes the derivational pattern of Japanese verbs. The ratio of anticausative to causative pairs (Table 2) is (A/C: 0.52), showing that the result is almost the same as Haspelmath’s (1993) sampling (A/C: 0.51).

¹ Turkish examples S and L are mine.

Table 2

Total	A	C	E	L	S	A/C	% non-dir.
353	106	201	30	2	14	0.52	13

3.3. Direction of morphological derivation in Old Turkic (Orkhon inscription)

The Orkhon script (Turkish runes) is the oldest record of the Turkic language available today. It was found in the Mongolian highlands in the 19th century in an inscription dating back to the 8th century (Ergin 1988; Tekin 2010). Our aim is to compare this with modern Turkic languages and introduce a historical perspective.

Voice in Old Turkic

Passive:

Erdal (2004)

-(X)l-, *-tXl-*, *-tUrXl-*

Reflexive, Antipassive, Middle:

-(X)n-, *-lXn-*, rarely *-(X)d-*, *-(X)k-*

Transitive, Causative:

-Ur-, *-Ar-*, *-gUr-*, *-tUr-*, *-Xz-*, *-(X)t-*

Our survey is based on Ergin's (1988) wordlist.

Table 3

Total	A	C	E	L	S	A/C	% non-dir.
82	14	62	6	0	0	0.225	2.9
A: 7 pairs, C: 31 pairs, E: 3 pairs						(Kuribayashi, 2011)	
Total number of verbs in Ergin (1988): 203							

Sometimes it is difficult to determine whether a given form is transitive or causative. Example (4) illustrates the typical verb derivations.

(4)	A: <i>it-</i>	classify	<i>it-in-</i>	be classified
	C: <i>olur-</i>	sit down	<i>olur-t-</i>	make sit down
	E: <i>kubra-t-</i>	get together	<i>kubra-n-</i>	gather

Table 3 illustrates that Old Turkic predominantly shows a causative alternation. Thus, the A/C ratio is less than that of Turkish (e.g., 0.225 vs. 0.52). Among the Turkic languages, according to N. Osaki p.c., Kirgiz has a A/C ratio of 0.86 (31 verbs) or 1.00 (158 verbs).

3.4. Nichols et al. (2004)

Subsequent to Haspelmath (1993), Nichols et al. (2004) conducted a broad-based typological study of the derivation of verbs, taking more languages into consideration. They investigated verbs in two classes; namely, animate subject verbs such as *laugh* and *die*, and inanimate subject verbs such as *boil* and *break*.

The data presented below are of Altaic languages as discussed in Nichols et al. (2004).

Animate Verbs. High = more than one standard deviation above the mean frequency for that derivation.

Uyghur

Augment 6 Suppletion 2 High: Augm Type: Trans

Nanai

Augment 7 Suppletion 2 High: Augm Type: Trans

Mongolian

Augment 5.5 Double 0.5 Aux 1 Suppletion 1 n.d. 1 High: Aux Type: Neut

The results of the animate verbs show that Uyghur, an example from the Turkic languages, has a typical **transitive derivation** formed by adding a suffix to the intransitive basic form, as argued by Haspelmath.

Inanimate Verbs. High = more than one standard deviation above the mean frequency for that derivation.

Uyghur

Augment 3 Reduce 3 Double 1 n.d. 1 High: Reduce Type: Detrans

Nanai

Augment 2.5 Reduce 2.5 Double 1 Ablaut 1.5 n.d. 1 High: none Type: none

Mongolian

Augment 5 Reduce 2 Ablaut 1 n.d. 1 High: Augm Type: Trans

In contrast to animate verbs, the number of inanimate verbs in Uyghur shows that the number of the Augment types decreased to three examples, and the Reduced type appears. Therefore, the type of inanimate verbs in Uyghur may correspond to the **detransitive derivation**; in other words, the results from the animate type are different from the inanimate. It is important to notice that animacy plays a crucial role in Uyghur as in Nanai and Mongolian .

3.5. Turkish

Nichols et al. (2004) used Uyghur instead of Turkish as an example of a Turkic language. Therefore, I have surveyed the 18 pairs of Turkish verbs shown in appendix 2. based on the same classification employed in Nichols et al. (2004). The main correspondences investigated here are as follows:

Augmented	Induced verb is formally derived.
Reduced	Plain verb is formally derived.
Double derivation	Induced and plain are both formally derived.

Table 4

	Aug	Red	Dou	Amb	Conj	Aux	Adj	Abla	Sup	n.d	High	Type
animate 1-9	5	2	1	0	0	0	0	0	1	0	Aug	Trans
inanimate 10-18	5	2	1	0	0	0	0	0	0	1	Aug	Trans

The results are as follows:

Turkish

Animate Verbs. High = more than one standard deviation above the mean frequency for that derivation (see, Nichols et al. 2004:192).

Augment 5 Reduce 2 Double 1 Suppletion 1 High: Augm Type: Trans

Inanimate Verbs. High = more than one standard deviation above the mean frequency for that derivation (see, Nichols et al. 2004:196).

Augment 5 Reduce 2 Double 1 n.d. 1 High: Augm Type: Trans

The Turkish results show that there is no difference in animate or inanimate subject verbs. Both types of verbs are generally augmentative and the whole language corresponds to **transitive derivation** type. Compared with Uyghur, the derivation of the verb is the opposite of **inanimate** subject verbs. Namely, Turkish consistently uses a **transitive derivation**, while Uyghur uses a **detransitive derivation** only with **inanimate** subject verbs. Hence, we recognize a variation among Turkic languages.

To summarize our findings up to now:

1. Both Old Turkic (Orkhon inscription) and modern Turkish are languages which have a directional preference for derivation. Old Turkic corresponds to causative alternation (A/C: 0.225), and this causative alternation is still predominant (A/C 0.52) in modern Turkish, although it exhibits a decreased A/C ratio.
2. No difference is found between animate and inanimate subject verbs with respect to the direction of morphological derivation in Turkish.
3. Some variations (the ratio of augmented vs. reduced) exist among Turkic languages in the case of inanimate subject verbs (cf. 3.4. vs. 3.5.).

3.6. Takeuçi (1990) (Tentative Version)

Haspelmath's and Nichols's studies use only 18 verbs in their sampling. Thus, we have insufficient data to describe the given languages as a whole. I decided to conduct a large-scale investigation of the verbs that appear in a larger dictionary, namely Takeuçi's

(1990) Turkish-Japanese Dictionary, which consists of 437 pages and includes 16,000 words. There are a total of 2,204 lexical entries in the dictionary. During the study, I was assisted by a native Turkish speaker, Ms. Seval Dirik. This study is part of a larger research project conducted by the National Institute for Japanese Language and Linguistics (NINJAL). The derivational paradigm is as follows:

<i>anla-</i>	“understand (Vi), understand (Vt)”
<i>anlat-²</i>	“explain, make to understand”
<i>anlaş-</i>	“understand each other, agree”

Extraction criterion: count once per verbal derivation

New pairing: *anla-* vs. *anlaş-* (cf. previous pairing: *anla-* vs. *anlat-*)

In this survey, we define the transitive-intransitive pairing as *anla-* (Vt) - *anlaş-* (Vi), but not as *anla-* (Vi) - *anlat-* (Vt). By this definition, the derived verb *anlat-* (Vt) is excluded from the pairing. This definition is completely different from Jacobsen’s (1990) revised Japanese verbal table which was based on Japanese verbal semantics. The previous pairing dismissed the transitive and intransitive usages that occur with the same verb. Our functional opposition based on the extraction of verbs then estimates that among the 2,204 verbs, 349 transitive verbs do not have a corresponding intransitive form, and 583 intransitive verbs do not have a corresponding transitive form (see Table 6). In addition, 392 transitive verbs have intransitive counterparts, and 404 intransitive verbs have transitive counterparts (see, Table 5).

Table 5. Transitive (valence increase) –Intransitive (valence decrease) pairs

Total	A	C	E	L	S	A/C	% non-dir.
852	404	392	30	22	4	1.03	6.5

Table 6. Other verbs

Total	Vi	Vt	E	L	S	A/C	% non-dir.
1,352	583	349	–	–	–	–	–

Table 7. Total of verbs

Total	Vi	Vt	E	L	S	A/C	% non-dir.
2,204	987	741	30	22	4	–	–

² The ‘double transitive’ discussed in Matsumoto (2000) gives an interesting clue to the paradigm: *bunu anladım* ‘I understood this’; *bunu anla-t-ti* ‘I explained this’; *ona bunu anla-t-ti* ‘I explained this to him/her.’ Here, the suffix *-t-* is involved in the process of valence increase.

4. Statistical Analyses

We conducted statistical analyses for three sets: the Old Turkic corpus, Jacobsen's verbal list for the Turkish corpus, and the Takeuçi corpus. Because the total numbers in each corpus vary, it was reasonable to employ the chi-square test for each to determine the morphological direction of the verbal derivation. Tables 8 and 9 depict the results of the IBM SPSS Statistics 19 analyses.

4.1. Residual Analysis**

Table 8. Types of derivation by language corpus

			Corpus			Total
			Old Turkic	Jacobsen	Takeuçi	
Types	Anticausative	Frequency	14	106	404	524
		expected frequency	33.4	143.7	346.9	524.0
		adjusted residuals	- 4.5	- 4.8	6.8	
	Causative	frequency	62	201	392	655
		expected frequency	41.7	179.7	433.6	655.0
		adjusted residuals	4.6	2.7	- 4.9	
	Others	frequency	6	46	56	108
		expected frequency	6.9	29.6	71.5	108.0
		adjusted residuals	- .4	3.7	- 3.3	
Total	frequency	82	353	852	1287	
	expected frequency	82.0	353.0	852.0	1287.0	

**Our analyses are concerned with intransitive-transitive pairs. The criterion for the level of significance is as follows:

Residual analysis: ± 1.96 Level of significance set at .05

± 2.58 Level of significance set at .01

As shown in the results of the residual analyses, while the number of **anticausative alternation in the Old Turkic corpus** ($-4.5 < -2.58$) and **anticausative alternation in Jacobsen's Turkish corpus** ($-4.8 < -2.58$) is **significantly small**, the number of **anticausative alternation in the Takeuçi corpus** ($6.8 > 2.58$) is **significantly high** (Table 8. first shaded area). Furthermore, the number of **causative alternation in Old Turkic** ($4.6 > 2.58$) and **in Jacobsen's Turkish corpus** ($2.7 > 2.58$) is **significantly high**. In contrast, the number of **causative alternation in the Takeuçi corpus** ($-4.9 < -2.58$) is **significantly small** (Table 8. second shaded area).

In conclusion, the anticausative alternation in Jacobsen's Turkish corpus is a small number at the .01 level of significance, and the causative alternation is a large number at the .01 level of significance. In the Old Turkic corpus, the anticausative alternation is small at the .01 level of significance, while the causative alternation is large at the .01 level of significance. Our findings with regard to the Takeuçi corpus suggest a reexamination of the predominance of causative alternation in the Jacobsen (2004) and Haspelmath (1993).

4.2. Anti-Causative (A) type or Causative (C) type?

Next, I applied statistical analysis to the A/C ratio and employed the chi-square test with the degree of freedom = 1.

Table 9: Direction of derivation

Language corpus	A vs. C	Total of A-S	χ^2 test (one variable)
Old Turkic	14, 62	82	$\chi^2 = 30.316$ df = 1 p < .000
Jacobsen	106, 201	353	$\chi^2 = 29.397$ df = 1 p < .000
Takeuçi	404, 392	852	$\chi^2 = .181$ df = 1 n.s.
Haspelmath	18, 35	60	$\chi^2 = 5.453$ df = 1 p = .020
Nichols	8, 20	36	$\chi^2 = 5.143$ df = 1 p = .023

As a result, in the Old Turkic corpus ($\chi^2 = 30.316$) and in Jacobsen's Turkish corpus ($\chi^2 = 29.397$), causative alternation is significantly large at the .01 level of significance. By contrast, the Takeuçi corpus shows no significant difference between the causative and anticausative alternations.

5. Summary

We can summarize our findings as follows.

1. Previous studies report that, in Turkish, the intransitive forms are often basic and the transitive forms are derived from them. However, in some cases, the transitive forms are basic and the intransitives are derived from them. Rarely are the transitives and intransitives identical. Contrary to these previous studies, our survey of a Turkish dictionary indicates that it is not always the case that the transitives derived from intransitives are predominant (cf. Table 8: Takeuçi's Turkish corpus).
2. Old Turkic (Orkhon inscription) has a tendency to form transitives from intransitives. Furthermore, the directional tendency of the morphological derivation varies according to the animacy of the subject (cf. 3.4.). In other words,

it is worth considering whether Turkish truly shows the typical typological properties of Turkic languages.

3. Jacobsen's Turkish corpus, whose list of verbs is based on a particular language (e.g., Japanese), might be biased (cf. Table 8).

The goal of Haspelmath's work was to contrast the causative with the inchoative, as its subtitle indicates. Nichols's work was aimed at contrasting the transitivity with the intransitivity process. Our survey of a Turkish dictionary is similar to Nichols' study. We understand that anticausativization is a subclass of intransitivity. Hence, if the definition of transitivity varies, the results of the survey will change. This makes our survey of a Turkish dictionary a tentative one.

Appendix

1. Definitions³

(1) Haspelmath (1993:90-91)

An **inchoative/causative verb pair** is defined semantically: it is a pair of verbs which express the same basic situation (generally a change of state, more rarely a going-on) and differ only in the **causative** verb meaning includes an agent participant who causes the situation, whereas the **inchoative** verb meaning excludes a causing agent and presents the situation as occurring spontaneously.

In the **anticausative** alternation, the causative verb is basic and the inchoative verb is derived (hence, the term anticausative, which was coined in Nedjalkov and Sil'nickij 1969).

(2) Nichols et al. (2004:149-152)

A set of 18 basic verb glosses and their semantic causative counterparts is used here as a convenient probe to test whether a language tends to treat intransitives as basic and transitives as derived, vice versa, both, or neither.

We emphasize that this is not a study of causatives or causativization; it is a study of valence orientation which uses causative pairings as its survey instrument.

The verb for 'teach' consists of 'learn' plus another morpheme; we call this correspondence AUGMENTED because there is overt marking of valence increase.

In Russian, 'learn' (plain) is derived from 'teach' (induced) by the addition of a suffix; we call this correspondence REDUCED because there is overt marking of valence decrease.

(3) Kulikov (2010:392)

In cases where the markers of the passive and anticausative overlap, passives without an overtly expressed agent can be distinguished from anticausatives only by semantic criteria. The standard description of this semantic opposition

³ Underlines are mine.

is given as follows by Comrie (1985b:326): “Passive and anticausative differ in that, even where the former has no agentive phrase, the existence of some person or thing bringing about the situation is implied, whereas the anticausative is consistent with the situation coming about spontaneously.”

2. Our 18 pairs of Turkish verbs (cf. Nichols et al., 2004)

pair	plain	induced	plain	induced
1	laugh	make laugh	gül	güldür
2	die	kill	öl	öldür
3	sit	seat	otur	oturt
4	eat	feed	ye	yedir
5	learn, know	teach	öğren	öğret
6	see	show	gör	göster
7	be/become angry	make angry	kız	kızdır
8	fear, be afraid	scare	ürk	ürküt
9	hid, go into hiding	hide	gizlen	gizle
10	boil	boil	kayna	kaynat
11	burn, catch fire	burn, set fire	yan	yak
12	break	break	kop	kopar
13	open	open	açıl	aç
14	dry	make dry	kuru	kurut
15	be/become straight	straighten	doğrul	doğrult
16	hang	hang	asıl	as
17	turn over	turn over	çevir	-
18	fall	drop	düş	düşür

plain = the semantic non-causatives; induced = the semantic causatives

Abbreviations

Adj: adjective, Abl: ablaut, ACC: accusative, Amb: ambitransitive, Aug(ment): augmented, Aux: auxiliary change, CAUS: causative, Conj: conjugation class change, DAT: dative, Detrans: detransitive, Dou(ble): double derivation (labile), Neut., neutral, n.d.: no derivation, PASS: passive, PL: plural, PROG: progressive, RCP: reciprocal, RED: reduced, REF: reflexive, SG: singular, Sup: suppletion, Vanticaus: anti-causative, Vi: intransitive, Vt: transitive.

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