Argument Reduction in Turkish[1] 4

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0 Introduction

This paper describes how the concept of predicate formation can be applied in the analysis of a series of Turkish verb forms which are all different in meaning, but which share a number of structural properties. Whereas in an approach based on Functional Grammar (henceforth: FG) the occurrence of a passive verb form in many languages (for instance of the Germanic group) is analysed in terms of 'Alternative Subject Assignment' (cf. Dik, 1989:209 ff), for languages which have a 'morphological' passive this approach leads to a number of problems. For a correct understanding of this mechanism, consider the following pair of sentences of English:

(1) a *(John) gave (that nice bunch of flowers) (to Mary)* (active)
John verdi (şu güzel çiçek demetini) (Mary'e)
'John Mary'e şu güzel çiçek demetini verdi'

b *(That nice bunch of flowers) was given (to Mary) {by John}* (passive)

Generally speaking, there is no difference in constituent order between an active and a passive sentence: the grammatical subject in both an active and passive sentence takes the first position. In (1a) the subject is 'John', and in (1b) it is 'that nice bunch of flowers'. The first argument term, however, that is, the underlying Agent term, occupies different positions: the Agent 'John' is the subject of the active sentence (1a), but is expressed by means of a 'by'-phrase in the passive sentence (1b), here *{by John}*. Furthermore, the Patient term 'that nice bunch of flowers' is the (direct) object of (1a) but the subject of (1b).

In terms of an FG-analysis, we can say that the syntactic function Subject has been assigned to the Agent-term in (1a), and to the Patient-term in (1b). Thus, the general syntactic pattern for the placement of constituents (in terms of syntactic functions) is left unaffected. In both cases constituent order can be described as Subject Verb Object. Such 'alternative orders' of Agent and Patient term (Agent expressed as Subject and Patient as Object in an active sentence versus Patient expressed as Subject and Agent as a 'by'-phrase in a pas-

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sive sentence) are found in many languages, and thus, these languages have the possibility to present a certain state of affairs from different perspectives. In (1a) the state of affairs is presented from the 'vantage point' (= perspective) of the Agent, *in casu* 'John', whereas by means of (1b) the state of affairs is syntactically presented from the point of view of the Patient term, namely, 'that bunch of flowers'. The choice between either one of these perspectives from which the state of affairs is being presented is signalled by verbal morphology: active versus passive.

The reasons why one should want to present a state of affairs from a different point of view are manifold. Firstly, a speaker might 'empathise' more with the second argument entity than with the first argument entity, and that might lead to a preference for (1b) over (1a). Secondly, a first argument entity (Agent) which is pragmatically speaking 'given' will be expressed as definite, and a first argument which is 'new' is usually expressed as indefinite. In combination with a definite second argument entity (Patient) these differences may lead to constructions which may be opposed in the following fashion:

(2) a *The man killed the dog*
adam öldürdü köpeği
'Adam köpeği öldürdü'

b *The dog was killed (by a man)*
'Köpek (bir adam tarafından) öldürüldü'

Thus, in case of a definite Agent plus definite Patient, the Agent will appear as the Subject of an active sentence (2a), whereas in case of an indefinite Agent plus a definite Patient, preference will be given for the expression of the only definite term (here: the Patient) as the Subject of a passive sentence. Thirdly, when the first argument is not sufficiently known or identifiable, or when according to the speaker's assessment of the information to be conveyed the first argument is regarded 'irrelevant', a passive construction might be a good alternative to present the state of affairs:

(3) *The dog was killed*
'Köpek öldürüldü'

For Turkish, however, this situation is somewhat different and the question may be raised whether passives of Turkish constitute a class of constructions which are similar to those of English and comparable languages. The reasons are quite simple. Firstly, whereas the verbal morphology of passive constructions in great many languages is realised by means of auxiliary verbs, Turkish

has a so-called morphological passive, that is, a passive verb is derived from an (active) verb stem by means of a suffix. Secondly, since a passive verb is of a derivative nature, for which a general predicate formation rule can be set up, it can be compared to another class of derived forms that are produced by a similar type of rule, namely reflexives and reciprocals. When the number of arguments the verbs belonging to this class can take is compared to the number of arguments of the verb stems they are derived from, it may be assumed that the derived verb forms all share the property of having a 'reduced argument structure'. This leads to the expectation that, at least for passives of Turkish, expression of the term denoting the Agent is not always possible, just because of the fact that it is the first argument position that has been reduced (removed).

This paper is organised as follows: In section 1 passive constructions will be discussed and a rule for the formation of passive verbs will be presented. In section 2, a similar rule will be proposed for the formation of reflexive verb forms. The difference between the two types of formation is that when compared to the verb forms the derived forms are based on, in a passive predicate the argument position for the Agent term has been reduced, and in a reflexive predicate the Patient position has been reduced. Section 3 will deal with the formation of reciprocal verbs, and the results will be compared to the analysis of passives and reflexives respectively. Section 4 will go into some implications of the present analysis, and section 5 will present some conclusions.

1 Passives

As is known, the formation of a passive verb in Turkish is a productive process and virtually any new verb entering the language can be made passive. A passive verb form can be distinguished from its active counterpart on the basis of a suffix, that is attached onto the verb stem: 1) after a vowel *-n;* 2) after a stem ending in *-l* the suffix is *-(V)n;* 3) for certain verb stems we get *-nVl;* and 4) in other cases we find *-(V)l.* These suffixes are in complementary distribution. The occurrence of these suffixes can be exemplified as follows:

(4) a *Eleman* ***ara-n-****iyor*
staff member seek-pass-pres2
'Staff wanted'

b *Bu araç bir saat sonra* ***bul-un****-du*
this car one hour later find-pass-past1
'This car was found after an hour"

c *Genelde Türkiye'de domuz et-i* ***ye-nil****-me-z*
generally Turkey-loc pig meat-CM eat-pass-neg-pres1
'Generally one does not eat pig meat in Turkey'

d *Sigara* ***iç-il-****me-z*
cigarette smoke-pass-neg-pres1
"One does not smoke"
'No smoking'

Typically, in all these sentences there is no reference to the Agent entity involved in the act described by *ara, bul, ye*, or *iç*. So in the examples presented here the Turkish equivalent of a 'by'-phrase is lacking, but expression of an Agent is very well possible, although in a rather complex way. Whereas Indo-European languages usually express the Agent in a passive sentence by means of a preposition (English: *by;* Dutch: *door;* German: *von*; French: *par*), the Turkish way of expressing the Agent is by means of a postposition, *tarafından,* and in some cases, by means of the adverbial suffix -*CA* (cf. Bazin, 1968: 48). Aissen (1979: 78) comments on the postposition *tarafından* that native speakers consider its usage as 'unnatural'. Examples of passive sentences with an Agent-phrase are:

(5) a *Bu araç bir saat sonra* ***polis tarafından*** *bul-un-du*
this car one hour later police by find-pass-past1
'This car was found by the police after an hour"

b *Eski bakan* ***hükümet-çe*** *affed-il-di*
former minister government by pardon-pass-past1
'The former minister was pardoned by the government'

In the latter example, taken from Underhill (1976: 333), the referent of the Agent-phrase is an 'institution' rather than an 'individual person'. Especially, in official writing this type of expression is widely used. Compare (6 a-b), texts which were both found on the very same place, which also exemplify this opposition. On the other hand, also the expression of an 'institution' can be carried out by *tarafından,* as is clearly shown by (6 c-e):

(6) a *Bu yol-lar ve basamak-lar* ***Leyla Aksel tarafından*** *yap-tır-ıl-mıştır*
this path-pl and step-pl L.A. by build-caus-pass-past3
'These paths and steps have been made built by L.A.'

b *Mezarlık-lar-ımız-ın temizlik, bakım ve onarım-ı*
graveyard-pl-'our'-gen cleaning, maintenance and repair-ps3

Büyük Şehir Belediyesin-ce *yap-ıl-makta-dır*
Greater City Municipality-by do-pass-pres3-emph

'The cleaning, maintenance and repair of our graveyards is done by the Municipality of the Greater City'

c *Bütün bina-lar* ***Kızılay tarafından*** *kullan-ıl-ır duruma gir-mişti*
all building-pl Red Cross by use-pass-pres1 state bring-pastperf
'All buildings have come into a state of being used by the Red Cross'

d ***Dünya Sağlık Teşkilatı tarafından*** *nüfus konusunda hazırla-n-an*
World Health Organisation by population with regard prepare-pass-SP

bir rapor-da yer alan rakam-lar-a göre...
a report-loc having a place figure-pl-dat according to

'According to the figures in a report (being) prepared by the WHO'

e ***Berlin Eyalet Mahkemesi tarafından*** *bugün yap-ıl-an açıklama-da...*
Berlin Province Court by today do-pass-SP statement-loc
'In the statement issued today by the Provincial Court of Berlin...'

1.1 Reduction of the First Argument

The examples presented above are all based on transitive verb stems, which implies that any of these verbs, be it used in its active or passive form, is always associated with two participants: an Agent and a Patient. Now, if it were the case in Turkish that passive morphology could only be applied to transitive verbs, and if it were the case that the expression of the Agent in a sentence based on a passive verb were possible in all circumstances, then the situation would very much resemble the way the opposition active versus passive could be explained and accounted for in languages such as English. We can assume that the underlying principle is 'Alternative Subject Assignment'.

However, there are a few arguments in favour of an alternative view for the formation of passive constructions in Turkish. Firstly, not only transitive verbs, but intransitive verbs too can take a passive morpheme. Consider the following example which is based on the intransitive verb *git:*

(7) *Sora sora Bağdat'-a bile* ***gid-il****-ir*
asking Baghdad even go-pass-pres1
'BY asking one even goes (as far as) Baghdad'

In sentences such as (7) addition of an Agent phrase is impossible: it would lead to an ungrammatical construction.

Secondly, in a number of cases a twofold interpretation is possible for the passive verb. For instance, (8) can be interpreted as a (normal) passive, 'by someone' (that is, by some unspecified Agent), or along the lines of 'by itself' (by some unspecified Cause).

(8) a *Pencere **aç-ıl**-dı*
window open-pass-past1
'The window was opened / The window opened'

b *Bardak **kır-ıl-**dı*
glass break-pass-past1
'The glass was broken / The glass broke'

Also for (8) expansion by an adverbial phrase is possible, denoting either the Agent or the Cause of the process involved, as can be shown by:

(9) a *Pencere **Hasan tarafından** aç-ıl-dı* (Agent)
'The window was opened **by Hasan**'

a' *Pencere **kendiliğin-den** aç-ıl-dı* (Cause)
'The window opened **(by itself)**'

b *Bardak **Ayşe tarafından** kır-ıl-dı* (Agent)
'The glass was broken **by Ayşe**'

b' *Bardak **kendiliğin-den** kır-ıl-dı* (Cause)
'The glass broke **(by itself)**'

However, for (9a') and (9b') it is not possible to make a grammatical active construction on the basis of the same constituents. Whereas the active counterparts of (9a) and (9b), being *Hasan pencereyi açtı* and *Ayşe bardağı kırdı,* are grammatical, active counterparts of (9a') and (9b') are non-existent, which can be demonstrated by **Kendilik pencereyi açtı* and **Kendilik bardağı kırdı* respectively. This entails that for the pseudo-passive reading of (9a) and (9b) we are dealing with adverbial phrases rather than with Agent phrases. Thus, also (9a') and (9b') cannot be considered as being the result of Alternative Subject Assignment.

Thirdly, certain verbs can be used in sentences which are ambiguous with respect to a passive or reflexive interpretation, especially when they are analysed outside of their context. Both (10a) and (10b) can be read in two ways:

(10) a *Atlet yarış-tan* ***çek-il-****di*
athlete race-abl withdraw
1. 'The athlete was withdrawn from the race' (passive)
2. 'The athlete withdrew from the race' (reflexive)

b *Kaçırılan müdür orman-da* ***sakla-n-****dı*
kidnapped director forest-loc hide-pass-past1
1. 'The kidnapped director was hidden in the forest' (passive)
2. 'The kidnapped director hid himself in the forest' (reflexive)

Fourthly, in a number of cases the Agent phrase in a passive sentence can be regarded as the means to provide pragmatic information (11a) or just information at the background (11b-c) of which the proposition should be considered. According to Aissen (1979: 78) the Agent phrase of (11a) is 'focal'. The Agent phrases in (11b-c) provide additional information:

(11) a *Genç kız* ***baba-sı tarafından*** *iste-n-me-miş*
young girl father-ps3 by want-pass-neg-past2
'The young girl was not wanted by her father'

b *Gelebilecek ipucu-lar değenlendirmek için* ***polis tarafından***
'may come in' hints-pl evaluate in order to police by

özel bir merkez kur-ul-du
special a centre found-pass-past1

'In order to evaluate incoming hints a special centre
was founded by the police'

c *Dün akşam AH* ***üç kişi tarafından*** *kapalı bir araç-la kaçır-ıl-dı*
y. evening AH three people by closed a car-instr kidnap-pass-past1
'Yesterday evening AH was kidnapped by three people in a closed car'

In order to arrive at a generalised treatment of all these constructions, we may conclude that Alternative Subject Assignment is most probably not the most elegant way to describe the phenomena presented here, since the expression of an Agent phrase is 1) not very likely to occur; 2) 'marked', in the sense that it provides pragmatically determined information; 3) in many cases based on an adverbial phrase; 3) impossible when the passive is based on an intransitive verb stem. This leads to the insight that we might very well be dealing with (passive) verb stems which do not have a first argument position, but rather which have a predicate frame in which this position has been reduced.

The formation of a passive verb stem can be accounted for by a Predicate Formation Rule (for more detailed information, cf. Dik: 1989,1980; De Groot: 1987; Mackenzie: 1987), which describes the morphological derivation of a passive predicate. Such a rule takes a basic verbal predicate as input, delivers a derived predicate as its output, and it gives a description of the relationship between both predicates. Furthermore, it provides a statement for the semantic correspondence between output and input predicate. For a transitive verb like *sat*, such a rule could have the following shape:

(12) **PASSIVE VERB FORMATION**

Input:	sat_V	$(x_1)_{Ag}$ $(x_2)_{Pat}$
Mechanism:	1.	$(x_1)_{Ag} \rightarrow \emptyset$
	2.	$(x_2)_{Pat} \rightarrow (x_1)_{Proc}$
Output:	sat-ıl$_V$	$(x_1)_{Proc}$
Meaning:	'sat' is relevant for x_1 only.	

As is visible in (12) the number of argument positions in the input predicate *sat* is reduced from two to one in the output predicate *sat-ıl*. Another consequence of this operation is that the second argument of the input predicate appears as the first argument position of the output predicate. Hence, it inherits all privileges of a genuine first argument: subject verb agreement in passive constructions is expressed on the 'psychological' object. A third corollary of this type of predicate formation is that the semantic status of 'controller' (which can be ascribed to Agents) is changed to 'Processed'. Whereas due to the presence of an Agent active verbs are in most cases verbs describing a controlled event, their passive counterparts just denote an uncontrolled event.

1.2 Impersonal Passives

In an analogous way to (12), the formation of passive verbs based on an intransitive verb can be described. Impersonal passives, of course, can never take a Agent phrase, due to the fact that such an argument position is absent. For a verb like *git* (see example (7)), the corresponding predicate formation rule could have the following shape:

(13) **IMPERSONAL (PASSIVE) VERB FORMATION**

Input:	git_V	$(x_1)_{Ag}$	$(x_2)_{Dir}$
Mechanism:	1.	$(x_1)_{Ag}$	$\rightarrow \emptyset$
	2.	$(x_2)_{Dir}$	$\rightarrow (x_1)_{Dir}$
Output:	$gid\text{-}il_V$	$(x_1)_{Dir}$	
Meaning:	'One goes to x_1' / 'It is gone to x_1'		

During the formation of an impersonal passive verb the semantic function of the (possibly present) second argument position does not change. The difference with the formation of a 'regular' passive, based on a transitive verb, is that the second argument of a transitive verb (the Patient) is the entity which is affected by the action described by the verb, whereas the second argument of an intransitive verb is not affected. Finally, also for the pseudo-passive (see examples (8)) a similar rule can be set up, although a semantic description is required that allows for a twofold interpretation.

(14) **PSEUDO-PASSIVE VERB FORMATION**

Input:	$kır_V$	$(x_1)_{Ag}$	$(x_2)_{Pat}$	
Mechanism:	1.	$(x_1)_{Ag}$	$\rightarrow \emptyset$	
	2.	$(x_2)_{Pat}$	$\rightarrow (x_1)_{Proc}$	
Output:	$kır\text{-}ıl_V$	$(x_1)_{Proc}$		
Meaning:	'kır' is relevant for x_1 only, with:			
Interpretation:	1.	$(x_1)_{Proc}$	breaks	(pseudo-passive)
	2.	$(x_1)_{Proc}$	is broken	(passive)

As a matter of fact, the rules presented in (12), (13) and (14) have a lot of properties in common. In principle, they indicate how a verbal predicate is deprived of its first argument position, and they describe what happens with the remaining argument positions. As we have seen, for transitive input predicates the Patient is shifted to Processed, but for intransitive input predicates no such shift occurs. This these rules can be generalised and reformulated as one rule which describes argument reduction of verbal predicates, leading to a passive predicate. Let P be an abstract verbal predicate and PASS an abstract

morpheme that signals argument reduction. The generalised formation rule is as follows:

(15) **ARGUMENT REDUCTION RULE**

Input:	P_V $(x_1)_{Ag}$ $(x_2)_{sf}$ ... $(x_n)_{sf}$	
Output:	P-PASS$_V$ $(x_1)_{sf}$... $(x_n)_{sf}$	
	1. P_V $(x_1)_{Proc}$	
Interpretation:	$(x_1)_{Proc}$ P-'s' / is P-'ed'	(pseudo-)passive
Output:	2. P_V $(x_1)_{sf}$	
Interpretation:	'One P-'s' in the relation sf to x_1	impersonal passive

2 Reflexives

Contrary to the (pseudo-)passive and the impersonal passive, the formation of the Turkish reflexive is not productive. Reflexive verb stems (having the suffix *-(V)n* are lexicalised, and generally speaking they have an alternative way of expressing reflexivity, namely by means of the reflexive pronoun *kendi*. This can be shown by the following examples:

(16) a *Hasan yıka-n-dı*
Hasan wash-refl-past1
'Hasan washed himself'

b *Hasan kendi-si-ni yıka-dı*
Hasan himself-acc wash-past1
'Hasan washed himself'

Other reflexive verb forms are for instance *besle-n, koru-n, tara-n, bul-un*. For the reflexive too we may assume that such forms were derived by means of a predicate formation rule. However, this process is not longer productive, so this rule describes only a mechanism parallel to the formation of passives which no longer can be applied. In any case, the following rule describes how lexicalised reflexives are related to a basic verbal predicate:

(17) **REFLEXIVE VERB FORMATION**

Input:	yıka$_V$	$(x_1)_{Ag}$ $(x_2)_{Pat}$
Mechanism:		$(x_2)_{Pat} \rightarrow Ø$

Output: yıka-n $_V$ $(x_1)_{Ag}$

Meaning: $(x_1)_{Ag}$ performs 'yıka' upon *himself*

An interesting phenomenon in relation to passives and reflexives is that certain derived verb forms allow for a twofold interpretation. Apart from (10a) the following examples illustrate that derived forms in *-n, -Vn,* and *-Vl* are homonymous and therefore ambiguous with respect to a passive or active interpretation:

(18) a *Hasan **besle-n**-di*
Hasan feed-pass/refl-past1
= 1. *Hasan bir kimse tarafından beslendi* (passive)
= 2. *Hasan kendisini besledi* (reflexive)

b *Kaçırılan müdür ormanda **sakla-n**-dı*
kidnapped director forest-loc hide-pass/refl-past1
1. 'The kidnapped director was hidden in the forest' (passive)
2. 'The kidnapped director hid himself in the forest' (reflexive)

c *Bu araç Amsterdam'-da **bul-un**-du*
this car Amsterdam-loc find-pass/refl-past1
1. 'This car was found in Amsterdam' (passive)
2. 'This car was (/found itself) in Amsterdam' (reflexive)

d *Atlet yarış-tan **çek-il**-dı*
athlete race-abl withdraw
1. 'The athlete was withdrawn from the race' (passive)
2. 'The athlete withdrew from the race' (reflexive)

This type of homonymy (and as a consequence, the possibility of lexical ambiguity) occurs only with predicates derived from a transitive basic predicate.

2.1 Reduction of other Arguments

Reflexives based on an intransitive input predicate are found too in Turkish. Although not many forms of this type can be found, clear examples are the following:

(19) a *söyle-n-mek* 'to speak to oneself'

b *mırılda-n-mak* 'to mumble to oneself'

c *(etrafına) bak-ın-mak* 'to look around'

In these cases it can be assumed that these forms constitute a subclass of reflexive forms in which argument reduction of the second or third argument has taken place. For (19a-b) we could say that one talks or mumbles to either someone else or to oneself. In the latter case the suffix *-n* reflects the reduced argument structure. In case of transitives we must assume, however, that the Patient term is retained, since expansion with an object is possible for both (19a) and (19b): *birşeyler söyle-n-di; birşeyler mırılda-n-dı.* As we have seen in the analysis of passives based on an intransitive input predicate, the derived forms based on the latter type of verb retain their second argument position.

3 Reciprocals

A verb form that contains the morpheme *-(I)ş* is in one sense structurally and semantically related to verb stems having the reflexive suffix. On the other hand, this suffix may express a number of unrelated functions as well. The following functions of this suffix can be distinguished. It expresses: 1) reciprocity; 2) collectivity; 3) completeness. Only for the first and second function we can assume that the process of argument reduction along the lines of what has been discussed above underlies the formation of such verbs. Therefore, the remaining function will not be discussed extensively.

3.1 Reciprocity

When the derivative suffix *-(I)ş* occurs in combination with a transitive verb stem it often expresses the meaning of reciprocity. Generally speaking, a transitive verb requires an Agent plus a Patient argument, the first argument of which can be expressed by means of a singular or plural term. Now, a derived verb which has a reciprocal meaning (expressed by the suffix *-(I)ş)* has only one argument position on which only a *plural* term can be inserted. This can be exemplified by the following:

(20)	etkile	$(x_1)_{Ag}\ (x_2)_{Pat}$	'to effect, influence'
	etkile-ş	$(x_1)_{Ag\ /\ Pat}$	'to influence each other'
	öp	$(x_1)_{Ag}\ (x_2)_{Pat}$	'to kiss'
	öp-üş	$(x_1)_{Ag\ /\ Pat}$	'to kiss each other'

For all these examples we may assume that the derived predicate frame has one argument position less than the verb from which it is derived: the argument position for the Patient term has been 'erased'. This reduced argument

structure is signalled by the morpheme *-(I)ş* and it tells us two things for an appropriate use of the verb: 1) the Agent term is plural (a non-singular entity), and 2) the (plural) referents of that term perform the action expressed by the verb 'upon each other' (which is not equal to 'upon themselves' - for which the reflexive plural pronoun *kendilerini* could be used).

However, an important factor in the description of reflexives and reciprocal verb forms is the 'degree of productivity'. It is not merely a theoretical question whether one could say that a certain type of formation, be it a nominal or verbal derivation, is productive or not, from a practical (say, descriptive) point of view productivity might well be a matter of degree. For certain types of derivation and even inflection it is safe to say that they are unproductive, and hence one could predict that application of the corresponding formative suffix will not occur with any word of Turkish, as for instance the Arabic pluralisation in *-at* as in *bahar-at,* or the derivational suffix *-ak* as found in *dur-ak.* On the other hand, even if in a fair number of descriptive grammars it is claimed that the (inflectional) rule called 'Final Stop Devoicing', stating that "final *t* in a noun becomes *d* when followed by a vowel", is productive the concept of productivity should not be taken in terms of a bipolar opposition in all cases *per se*, that is, productive versus unproductive. As I have shown elsewhere (cf. Van Schaaik, 1996), a dictionary survey reveals that only 37 % of nouns ending in *t* actually 'change *t* into a *d* before a vowel' and for nouns ending in *ç* and *p* (alternating with *c* and *b*) these figures are 90 % and 75 % respectively. Thus, it is difficult to say or predict whether a new noun ending in *t, ç,* or *p* entering the language will indeed follow the rule 'Final Stop Devoicing'.

Returning to the case of *-(I)ş,* many forms must be considered as lexicalised. Therefore, the meaning of those verbs stems, in terms of 'reciprocal', 'collectivity' or 'completeness', cannot always (other than by guess-work) be derived on the basis of a general meaning of the suffix. So, from a descriptive point of view 'meaning' must be regarded as a matter of semantic description, and with respect to the number and type of arguments such a predicate takes this descriptive aspect will boil down to an appropriate way of subcategorising. Yet, it can never be excluded that new formations with *-(I)ş* will ever occur. Irrespective of the question whether this formation is productive, the following rule gives at least an idea how a reciprocal verb relates to its basic predicate:

(21) **RECIPROCAL VERB FORMATION**

Input:	öp $_{V}$	$(x_1)_{Ag}$ $(x_2)_{Pat}$
Mechanism:		$(x_2)_{Pat} \rightarrow Ø$

Output: öp-üş $_V$ $(x_1)_{Ag / Pat}$

Meaning: A plural $(x_1)_{Ag}$ performs 'öp' upon *one another*

As we have seen in the analysis of reflexives, the argument reduced nature of the derived predicate can be 'detected' by trying to add a Patient term. This leads to an ungrammatical construction, as can be exemplified by (22a), whereas (22b) shows that, quite similar to the case of reflexives, a Patient term can be based on the reciprocal pronoun *birbirlerini,* but only in combination with the transitive basic predicate.

(22) a **birbirlerini öp-üş-üyor-lar* 'they kiss each other'

b *birbirlerini öp-üyor-lar* 'they kiss each other'

So far we have dealt with transitive input verbs only. But also intransitive verbs may get a 'reciprocal' meaning when expanded by the suffix *-(I)ş*. Consider the following pair of verbs, the second of which (23b) can be paraphrased by (23c):

(23) a bak $_V$ $(x_1)_{Ag}$ $(x_2)_{Dir}$ 'to look at...'

b bak-ış $_V$ $(x_1)_{Ag}$ 'to look at one another'

c birbirlerine bak-mak 'to look at one another'

Again, it is clear that the derived verb *bak-ış* has a reduced argument structure, since it cannot be expanded by a term expressing Direction: **birbirlerine bak-ış-tı-lar* 'they looked at one another'.

3.2 Collectivity

As was shown in the previous section, intransitive verbs, that is, verbs which do not have a position for an argument having the semantic function Patient, but which may have a position with some other semantic function can take the suffix *-(I)ş* as well. Apart from reciprocity, the derived meaning is in many cases 'togetherness', or in other words, the verb expresses an action which is simultaneously performed by a multiple (plural) Agent, as can be shown by the following examples:

(24) a *ağla-ş-tı-lar* 'they (all) wept together'

b *gül-üş-üyor-lar-dı* 'they (all) were laughing together'

For this type of formations we cannot assume that argument reduction is involved, but rather, we observe that the attachment of the morpheme *-(I)ş* only signals the (derived) meaning of 'collectivity'. Thus, the examples listed in (24) have the following underlying structures:

(25) a ağla $(x_1)_{Ag}$ 'to weep'
ağla-ş $(x_1)_{Ag}$ 'to weep together'
b gül $(x_1)_{Ag}$ 'to laugh'
gül-üş $(x_1)_{Ag}$ 'to laugh together'

The concept of 'togetherness', however, can be expressed for certain transitive verbs as well. In this case the morpheme *-(I)ş* also signals the reduction of the argument position for a Patient term: this position is not retained since the expression of an object leads to an ungrammatical construction. Furthermore, a reciprocal interpretation is not possible. This is shown by the following examples (26 a-c) and their structures (26d):

(26) a *(arkadaş-ların-ı) bekle-di-ler*
'they waited for their friends'

b *(*arkadaş-ların-ı) bekle-ş-ti-ler*
'they (all) waited together' (*for their friends)

c *bekle-ş-ti-ler* 'they waited together' *birbirlerini bekle-di-ler* 'they waited (for) each other'

d bekle (Ag) (Pat) 'to wait for so.thing / so.one' (transitive)
bekle-ş (Ag) 'to wait together' (intransitive)

Another example is provided by (27), where the verb *söyle-ş* 'to talk together / to converse' may be thought of as derived from the transitive *söyle* 'to say / to sing':

(27) *Fransızca söyle-ş-ti-ler, ama ben anlıyorum elbette*
French talk-coll-past1-P3 but I understand-pres2-S1 surely
'They spoke French with one another, but I surely understand (it)'

As becomes clear on the basis of these examples, the expression of 'togetherness' (collectivity) implies that the (derived) verb has an intransitive structure, irrespective of the fact whether the input predicate is transitive or intransitive. In that sense, the formation of reciprocal and collective verbs follows the same

principle: intransitive input predicates remain intransitive and transitive verbs become intransitive.

3.3 Completeness

In a number of cases, verbs in *-(I)ş* may express (a certain degree) of 'intensity' or 'completeness'. For instance, the intransitive verb stem *dol-* means 'to get full' and its derived form *dol-uş* expresses the idea of 'to crowd (into)', in the sense of 'completely'. Consider the following examples:

(28) a *Komşu-lar içeri dol-uş-tu-lar*
neighbours-pl inside fill up-past1-P3
'The neighbours crowded the interior'

b *Rolls'-a dol-uş-muş altı adam sabırsızlık içinde-ydi*
R-dat filled six man impatient in-past1
'The six men that 'filled' the Rolls were impatient'

c *Amerikan asker-ler-i de ortalığa dol-uş-muş-tu*
American soldier-pl-CM too around fill-past-perf
'Also American soldiers were every-were around'

Other example of 'completeness' or 'intensity' is the verb *titre-ş* 'to shiver all over', which exists side by side with *titre-* to shiver, tremble'; *kok-uş* 'to smell rotten' which can be thought of as expressing a more 'intensive' idea than *kok* 'to (have a) smell'. The verbs here are all intransitive, so argument reduction cannot play a role in the formation of the derived verb stems.

4 Some Implications

One of the implications of the point of view defended here, namely that the structural and semantic properties of passive, reflexive, and reciprocal verb stems can be accounted for by saying that they are morphologically derived from a basic predicate by means of a predicate formation rule, is that in some cases a basic predicate is not available (any more). An intransitive verb such as *ısı-n-mak* 'to get warm' may be thought of as being derived from the hypothetical verb stem **ısı-*, and quite similarly other intransitive verbs like *öğre-n-mek* 'to learn' and *tüke-n-mek* 'to be used up' might be derived from **öğre-* and **tüke-* respectively.

The reason behind this idea is that they all exist side by side with their causative counterparts, which are all transitive: *ısı-t-mak* 'to warm up', *öğre-t-*

mek 'to teach' and *tüke-t-mek* 'to use up'. For the former type of verbs we assume a one-place predicate structure, and for the latter type a two-place (Ag-Pat) structure. As we shall see below, the formation of a causative verbal predicate can, generally speaking, more or less be seen as being based on an opposite mechanism to passives and the like. Whereas argument *reduction* underlies the formation of passives, argument *introduction (*or *expansion)* is the mechanism that brings about a causative verb. This can be exemplified by opposing a basic predicate with its causative counterpart:

(29) a *Hasan çay yap-tı*
Hasan tea make-past
'Hasan made tea'

b *Hasan eş-in-e çay yap-tır-dı*
Hasan wife-ps3-dat tea make-cause-past
'Hasan had his wife make tea'

In (29a) the transitive verb *yap* requires the expression of two terms, an Agent and a Patient, expressed here as *Hasan* (Ag) and *çay* (Pat). In (29b), however, *Hasan* is the Agent (the Causer) and *eşi* the Patient (the Causee) of *yap-tır,* but *eşi* is simultaneously the Agent of the ('hidden') verb *yap,* of which *çay* can be seen as the (original) Patient. Thus, for *yap-tır* a three-place structure can be assumed: Causer/Agent, Causee/ Patient/Agent, Patient.

Now, an interesting question is based on the following observation. A transitive verb can be made passive by argument reduction or it can be made causative by argument introduction. So, we find side by side the one-place predicate *öp-ül* 'to be kissed', the two-place predicate *öp* 'to kiss' and the three-place predicate *öp-tır* 'to make to kiss'. However, once a (transitive) verb is made passive *(öp-ül)*, the result cannot be made causative *(*öp-ül-dür*: '?to be caused to be kissed'*)*, but applying these formational rules the other way around is not problematic: once a (transitive) verb is made causative *(öp-tür)*, the result can be made passive *(öp-tür-ül:* 'to be made/caused to be kissed'*)*. Similar observations can be made for reflexives. A reflexive verb cannot be made causative, but a causative verb can be made passive but not reflexive: *yıka* leads to *yıka-n* (reflexive: 'to wash oneself') but not to **yıka-n-dır* (reflexive plus causative: 'to make someone wash himself'), and *yıka* leads via *yıka-t* (causative: 'to make (someone) wash (something)') to *yıka-t-ıl* (causative plus passive: 'to be washed by some intermediary Agent') but not to **yıka-t-ın* (causative plus reflexive). The question is of course: how can this be explained?

When we look at the assumed underlying structures of the derived predicates, we observe that a passive verb has one argument position only, having the semantic function Processed (see section 1.1). Such verbs, expressing a Process, occur as a matter of fact as basic predicates as well, as for instance in *Buz eridi* 'The ice melted', and causativising such a verb is possible: *Ben buz-u eri-t-ti-m* 'I melted (made melt) the ice'. In case of a causative verb which is based on a verb like *eri* 'to melt', we may assume that the original Processed does not get the semantic function Patient, but that it obtains a kind of 'double status' (Processed/Causee), due to the fact that an argument position for a Causer-term has been introduced. Although a passive verb, like *öp-ül,* has only one argument position for a Processed term (as I advanced in section 1.1), we still know that the referent of such a term could also be viewed in the role of Patient, due to the mere fact that if someone is kissed, (s)he is kissed by *someone*. Thus, no matter how the state of affairs is presented, from the viewpoint of Agent (leading to an active verb) or from the perspective of the Patient (as expressed by the passive verb form), the underlying semantic information tells us that there are always two participants, and for a passive verb we can assume that the double function Processed/Patient is relevant.

When a passive verb, the first argument of which already has a twofold semantic function, is made causative, we would expect that yet another semantic function should be assigned to that argument, namely Causee (=Agent). Thus, the hypothetical **öp-ül-dür* would be a two-place predicate with an Agent (=Causer) term plus a second term which can be characterised as having a threefold function, (Processed/ Patient)/ Causee (=Patient). Perhaps this multitude of functions is of a conflicting nature: one cannot be 'Processed/Patient' as contributed by the passive morpheme and Causee (=Patient) of the causative morpheme at the same time. This might provide an explanation why such formations do not occur, since the information cannot be retrieved any more of which part of the verb (passive or causative) the second argument term is the Patient.

On the other hand, a passive verb derived from of a causative verb may occur. We presented the example *öp-tür-ül:* 'to be made/caused to be kissed'. For such verbs, however, we may assume a reduced argument structure, although expansion with Causer and Agent phrases seems to be possible in a number of circumstances. Consider:

(30) *Kız (bu adam tarafından) (oğlan-a) öp-tür-ül-dü*
girl this man by boy-dat kiss-caus-pass-past1
'The girl was made kissed by the boy by this man'

For (30) the following line of interpretation should be followed: From *Kız öp-tür-ül-dü* follows that *Kız öp-ül-dü,* that is, *Kız öp-me-di.* Hence, *kız* is the Processed/Patient of the passive *öp-tür-ül.* The contribution of the causative morpheme is that it expresses that 'a Causer (= *bu adam*) caused the Agent (= *oğlan)* to kiss the girl'. In other words, 'the girl is kissed {by someone (the Agent) who is caused by an intermediary (the Causer)}. Since we can assume a three-place argument structure for *öp-tür*, with the functions Agent/Causer, (Agent)/Patient, and (Patient)/Processed, we may say, in a completely parallel fashion to the derivation of normal passives, that its passive counterpart *öp-tür-ül* has a one-place structure because not one but two arguments have been reduced. Compare the following:

(31) a öp-tür $_V$ $(x_1)_{Ag\text{-}1}$ $(x_2)_{(Ag\text{-}2)\,/\,Pat\text{-}1}$ $(x_3)_{Pat\text{-}2}$
Causer Causee

b öp-tür-ül $_V$ $[(x_1)_{Ag\text{-}1}$ $(x_2)_{(Ag\text{-}2)\,/Pat\text{-}1}\,]$ $(x_3)_{Proc\,/\,(Pat)}$
Causer Causee

→ öp-tür-ül $_V$ $(x_1)_{Proc\,/\,(Pat)}$

Another series of constraints on combining various derivational morphemes is found in the domain of verbs based on the suffix *-(I)ş.* For instance, reciprocal verbs nor those expressing collectivity or completeness can be made passive (**öp-üş-ül, *gül-üş-ül, *dol-uş-ul)*, due to their already reduced argument structure, but to a certain extent reciprocals can be made causative. Taking again *öp* as a basic predicate, we find the reciprocal *öp-üş*, the causative reciprocal *öp-üş-tür,* and even the passive causative reciprocal *öp-üş-tür-ül.* For *öp-üş* we may assume a one-place structure (which requires a 'plural' term), for *öp-üş-tür* we can say that an Agent (=Causer) has been introduced and that the second argument has the semantic function (Agent)/Patient (=Causee), and for *öp-üş-tür-ül* again a one-place structure may be assumed, namely, Agent/ Processed. A construction that exemplifies this type of verbs is:

(32) *Bu horoz-lar döv-üş-tür-ül-dü*
this rooster-pl fight-rec-caus-pass-past1
'These roosters were made fight with each other'

Whereas *öp-üş* has one argument only (AgentPatient), its causative counterpart *öp-üş-tür* has an Agent term (=Causer) plus a Patient term (= AgentPatient; = Causee), the passive form of the latter derivation, *öp-üş-tür-ül*, has one term only since the Causer has been reduced: AgentPatient/Processed.

5 Conclusions

In this article I have tried to show that passive, reflexive, and reciprocal verb forms of Turkish can be compared to one another by assuming that their derivation is based on a predicate formation rule, that describes how and which argument of a basic predicate is reduced. This rule is basically of the same type for all derivations, but the difference between specific realisations is found in the type of argument that is involved in the reduction process. For passives we assume that the first argument (Agent) is reduced, for the formation of a reflexive verb it is the second argument (Patient) that is reduced, and for reciprocals it is again the second argument, but the first argument gets the double function AgentPatient. This latter function expresses the fact that both Agent and Patient are one and the same plural entity. In that sense, reciprocals very much resemble reflexives. For the verbs expressing collectivity and completeness no reduced structure can be established. Finally, for a number of derived verb forms the relationship with the causative morpheme was touched upon, but since the primary aim of this paper was to show how the mechanism of argument reduction may explain how passives, reflexives, and reciprocals are derived, a more precise account of phenomena concerning the relationship between argument reduction and argument introduction remains for further investigation.

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