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# Reciprocals in Turkish

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**Abstract:** This paper discusses various reciprocalization strategies in Turkish, including lexical, pronominal, and verbal reciprocals, as well as the collective and discontinuous constructions that appear with symmetric predicates. We propose that there are two distinct sources of reciprocity in Turkish: *symmetry* and *distributivity–reciprocity*. Lexical and verbal reciprocals are established via symmetry, whereas pronominal reciprocals are formed via distributor–reciprocator operators introduced by the reciprocal pronoun *birbiri* 'each other'. We argue that the verbal reciprocal morpheme *-(I)ş* is ambiguous between a symmetric reciprocal head ($v_{\text{RECP}}$) and a pluractional head ($v_{\text{PL}}$). The symmetric reciprocal head $v_{\text{RECP}}$ turns an asymmetric transitive predicate into a symmetric transitive predicate by creating two event variables as subevents of a single eventuality and permutes the thematic roles across the arguments of the predicate. Our proposal builds on the idea that symmetric predicates introduce plural events consisting of atomic subevents as their parts. This double-sourced analysis allows us to account for a range of facts involving collective and discontinuous constructions. We argue that both discontinuous and collective constructions are transitive and that collective constructions are formed through a combination of the two reciprocal sources (symmetry and distributivity–reciprocity) with an unpronounced reciprocal pronoun. We also provide an account of the reciprocal–pluractional syncretism of the *-(I)ş* suffix, arguing that the symmetric reciprocal head $v_{\text{RECP}}$ and the pluractional head $v_{\text{PL}}$ share a common [PL] feature spelled out as *-(I)ş*.

**Keywords:** reciprocals; symmetry; pluractionality; Turkish



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## 1. Introduction

This paper discusses the properties of lexical, verbal, and pronominal reciprocals in Turkish. Our goals are to provide (i) a detailed description of various reciprocal strategies in Turkish and (ii) an account of these reciprocal constructions that captures their properties. We argue that there are two main sources of reciprocity in Turkish: The first one is distributivity–reciprocity introduced by the reciprocal pronoun *birbiri* 'each other' in the spirit of Heim et al. (1991) and LaTerza (2014) and the second one is symmetry, which is either lexically encoded in the verb or added in the syntax by the verbal reciprocal head $v_{\text{RECP}}$ whose surface realization is the suffix *-(I)ş*. Following Dimitriadis (2008), Winter (2018), and Siloni (2012), we argue that symmetry requires a plurality of events, where a predicate is distributed over two atomic subevents of a single eventuality and the individual arguments are permuted across thematic roles. Thus, we argue that the verbal reciprocal head $v_{\text{RECP}}$ carries interpretable symmetry and plurality features, [SYM, PL].

We also analyze the reciprocal–pluractional syncretism associated with the morpheme *-(I)ş*. In Turkish, *-(I)ş* appears on both symmetric verbal reciprocals, as well as on some pluractional predicates that do not involve any symmetry or reciprocity. We argue that pluractional predicates are created by a distinct pluractional head ($v_{\text{PL}}$) that carries an interpretable plural [PL] feature. We argue that the *-(I)ş* morpheme spells out the [PL] feature on the verb and that reciprocal–pluractional syncretism follows from underspecification (Halle and Marantz 1993; Embick and Marantz 2008). Key and Ótott Kovács (2022) independently arrived at the same conclusion regarding the event plurality of the verbal reciprocals and the syncretism of *-(I)ş* in Turkish.

One of the main threads of the discussion focuses on the nature of collective constructions and discontinuous reciprocals in Turkish that appear with symmetric verbs as well as verbal reciprocals. Collective constructions are expressions wherein the arguments of a predicate are conjoined in the subject position as in (1), whereas discontinuous constructions are expressions wherein one of the arguments is introduced via a comitative phrase, as in (2).

(1) a. Alex and Sam corresponded. collective construction
b. Deniz ve İlkay evlen-di.
Deniz and İlkay marry-PAST
'Deniz and İlkay got married.'

(2) a. Alex corresponded with Sam. discontinuous construction
b. Deniz İlkay-la evlen-di.
Deniz İlkay-WITH marry-PAST
'Deniz married İlkay.'

We show that the common property shared across these constructions is symmetry. Following Komlósy (1994), Rákosi (2003), and Dimitriadis (2004), we argue that the comitative phrases in discontinuous constructions are true arguments. We further argue that both pronominal and verbal reciprocals in Turkish always require two distinct arguments. Reciprocal/symmetric relations are established across members of distinct sets of individuals (e.g., subject and object) but not among the same set (e.g., subject only). In the case of discontinuous constructions, reciprocity/symmetry is established across members of the subject and the discontinuous phrase. In the case of pronominal reciprocals, the first set is provided by the subject, and the second set is established by the reciprocal pronoun (anaphoric to the subject). Finally, we argue that collective constructions are exactly the same as the pronominal reciprocals with symmetric predicates, except that the reciprocal pronoun is unpronounced. Symmetry can be a lexical property of a verb, as in *evlen* 'marry', or it can be established in the syntax via the verbal reciprocal head $v_{\text{RECP}}$. We provide a set of recoverability conditions under which the reciprocal pronoun can remain unpronounced and argue that symmetric predicates are among the licensors of this silence.

The remainder of this paper is organized as follows. Section 2 introduces the three reciprocalization strategies. Section 3 provides a detailed syntactic and semantic description of the verbal reciprocals and compares them with the pronominal reciprocals. Section 4 presents a semantic analysis of verbal and pronominal reciprocals and shows how our proposal accounts for a range of reciprocal constructions. Section 5 briefly discusses the pluractional use of the *-(I)ş* suffix and presents the vocabulary insertion rule that accounts for the reciprocal–pluractional syncretism. Section 6 concludes the discussion.

## 2. Reciprocal Constructions

Turkish uses three strategies for constructing reciprocal meanings wherein two (or more) participants in an event stand in a mutual relation. The first strategy is what Siloni (2012) calls a lexical reciprocal similar to English verbs such as *kiss, date, etc.* Turkish has a few inherently symmetric verbs, such as *evlen* 'marry', *boşan* 'divorce', and *çık* 'date', and a few that are ambiguous between a symmetric and an asymmetric reading, such as *sarıl* 'hug', which establishes symmetric reciprocal readings under discontinuous and collective constructions.

(3) Deniz İlkay-la evlen-di.
Deniz İlkay-WITH marry-PAST
'Deniz married İlkay.' (= (2-b)) discontinuous construction

(4) Deniz ve İlkay evlen-di.
Deniz and İlkay marry-PAST
'Deniz and İlkay got married.' (= (1-b)) collective construction

The second strategy involves verbal reciprocalization, whereby a verb appears with the *-(I)ş* suffix, which has been analyzed as the reciprocal morpheme by Kornfilt (1997) and Göksel and Kerslake (2004) and as an intransitivizer by Yükseker (2008). Verbal reciprocals are formed by combining *-(I)ş* with a transitive verb, and they behave like lexical reciprocals in that they allow both collective and discontinuous constructions and they entail a symmetric relation between the participants.

(5) Deniz İlkay-a bak-tı.
Deniz İlkay-DAT look-PAST
'Deniz looked at İlkay.'

(6) Deniz İlkay-la bak-ış-tı.
Deniz İlkay-WITH look-RECP-PAST
'Deniz and İlkay looked at each other.' discontinuous construction

(7) Deniz ve İlkay bak-ış-tı.
Deniz and İlkay look-RECP-PAST
'Deniz and İlkay looked at each other.' collective construction

In (5), the verb assigns lexical DATIVE case to its internal argument, which is not available in the discontinuous construction. Instead, the internal argument appears with the COMITATIVE case. The collective construction does not seem to have an internal argument at all. Based on these facts, verbal reciprocals, in general, have been analyzed as arity-reduction operations by Reinhart and Siloni (2005; a.o.), and Yükseker (2008) proposed the same for Turkish. In this paper, we argue that a discontinuous phrase marked with COMITATIVE case is an argument and that the collective constructions are underlyingly transitive.[1]

As we mentioned above, the morpheme *-(I)ş* is syncretic between a symmetric verbal reciprocal and a pluractional. The pluractional reading is clearly visible with intransitive predicates, as they do not have any internal arguments, which makes it impossible to obtain a reciprocal or symmetric reading.

(8) a. Çocuk-lar koş-tu.
kid-PL run-PAST
'Kids ran.'

b. Çocuk-lar koş-uş-tu.
kid-PL run-VPL-PAST
'Kids ran about (in a disorganized manner).'
'*Kids ran towards each other.'

(9) Çatı-da sarkıt-lar ol-uş-tu.
roof-LOC icicle-PL become-VPL-PAST
'Icicles formed on the roof.'
'*Icicles formed for/with/towards/... each other.'

Notice that the sentences in (8-b) and (9) have no symmetric or reciprocal readings. Descriptively, (8-b) entails that there were many running events in various directions in a disorganized manner. This was noticed by Göksel and Kerslake (2004). The pluractional status of (9) is less clear at first look. *ol-uş* 'become-VPL' is derived from the change-of-state verb *ol* 'become', which is an achievement predicate. The contribution of *-(I)ş* is an added process reading turning the predicate into an accomplishment. Descriptively, *oluş* entails that some entity came into existence and that it happened incrementally over an extended period of time. A similar predicate is *gel-iş* 'develop', which is derived from *gel* 'come'. In Section 5, we briefly discuss the pluractional reading of *-(I)ş* and argue that the various types of meanings (as in (8-b) and (9)) arise as a result of the plural events interacting with individual, temporal, spatial, and lexical aspect properties involved in a clause. However, we do not provide a complete picture, as our focus is on reciprocals. Key and Ótott Kovács (2022) provide an in-depth analysis of the pluractionality of *-(I)ş*.[2]

Let us clearly articulate our position regarding the reciprocal–pluractional syncretism before mentioning a more complex case. We argue that symmetric verbal reciprocals and pluractionals have different syntactic and semantic structures. Symmetric verbal reciprocals are formed with a $v_{\text{RECP}}$ head, which has interpretable symmetric and plural features [SYM, PL], whereas pluractionals are formed with a $v_{\text{PL}}$ head, which has an interpretable plural feature [PL]. We motivate these features in Section 4.

(10) *Symmetric Verbal Reciprocal* *Pluractional*


Throughout, we gloss the *-(I)ş* morpheme either as RECP (symmetric reciprocal) or VPL (pluractional) depending on its function.[3] We argue that the *-(I)ş* morpheme can realize either head as it spells out the feature [PL].

Our proposal involves two distinct heads, which predicts that we should be able to see the pluractional head $v_{\text{PL}}$ combining with a transitive predicate as well.[4] However, so far, we have only shown its pluractional use with intransitive verbs. In fact, it is possible to combine the pluractional head $v_{\text{PL}}$ with a transitive verb, the result of which is weak reciprocity (as a corollary of distributivity with plurals) but not symmetric reciprocity. However, we defer this discussion until the end of Section 3.2.2 (example (76)), as it presupposes an understanding of various types of reciprocity.

The third and final strategy for expressing reciprocal relations between two participants in an event in Turkish is the use of the pronominal *birbiri* 'each other'.[5] The pronominal *birbiri* is a complex pronoun that consists of two instances of *bir* 'one' and the possessive/partitive suffix *-i*, and it further agrees with the antecedent in person and number. The verb does not have any special form. The reciprocal meaning is contributed by the reciprocal pronoun.

(11) Deniz ve İlkay birbirin-e bak-tı.
Deniz and ilkay each.other-DAT look-PAST
'Deniz and İlkay looked at each other.'

(12) Deniz ve ben birbiri-m-iz-e bak-tı-k.
Deniz and I each.other-1-PL-DAT look-PAST-1.PL
'Deniz and I looked at each other.'

(13) Siz birbiri-n-iz-e bak-tı-n-ız.
You.PL each.other-2-PL-DAT look-PAST-2-PL
'You (all) looked at each other.'

With pronominal reciprocals, the subject is required to be plural.

(14) *Deniz birbirine bak-tı.
Deniz each.other look-PAST
'Deniz looked at each other'

In this section, we have shown that Turkish uses three strategies for expressing events involving reciprocal relations. In the next section, we run a battery of tests to highlight the differences between these strategies, mainly focusing on the verbal and pronominal strategies.

## 3. Properties of Verbal and Pronominal Reciprocals

In this section, we analyze some morphological, syntactic, and semantic properties of the verbal and pronominal reciprocals to identify the syntactic position of the verbal reciprocal head and its semantic properties in comparison with the pronominal reciprocals.

We also discuss the collective and discontinuous constructions that appear with symmetric verbal reciprocals.

### *3.1. Position of the Reciprocal Head*

Reinhart and Siloni (2005) treat reciprocalization as an arity-reduction operation and propose that arity-changing operations can apply in the lexicon or in the syntax. This is denoted as the Lex-Syn parameter.

(15) Lex-Syn parameter (Reinhart and Siloni 2005, p. 391)
UG allows arity (valence-changing) operations to apply in the lexicon or in the syntax.

The Lex-Syn parameter builds on the assumption that the lexicon has a generative component and that certain operations happen in the lexicon. Pursuing this assumption, Siloni (2008, 2012) provides a range of tests that highlight the differences between various types of reciprocals and argues that the differences follow from whether the reciprocalization is syntactic or lexical, while we do not adopt the Lex-Syn parameter, as it is incompatible with our distributed morphology assumptions and because we also have evidence to believe that verbal reciprocalization is syntactic rather than lexical, we share the intuition behind Siloni's proposal that some reciprocals are "more lexical" in nature. In DM terms, "more lexical" corresponds to operations that are closer to the root (Embick and Marantz 2008). In the following, we use productivity and morphosyntactic evidence to show that the reciprocal head must be introduced very low on the verbal spine, close to the root.

#### 3.1.1. Productivity & Idiosyncrasy

Productivity is treated as a distinguishing property between inflectional and derivational morphology, where inflection is considered to be more productive than derivation (Stump 1998; Booij 2006; Haspelmath 2002; a.o.), while derivation has been associated with a generative component in the lexicon, inflection has been associated with the syntax. Syntactic processes are relatively more productive (barring gaps and semantic constraints) compared to lexical processes. In the following, we show that verbal reciprocalization is less productive than the pronominal strategy. The distribution of the verbal reciprocal does not seem to be systematic, and it is highly idiosyncratic, while we do not assume that a generative mechanism exists in the lexicon, we account for the difference by making reference to the root-versus-non-root composition following the standard DM assumptions (Embick and Marantz 2008; Harley and Noyer 2000, among others).

A large number of transitive and ditransitive verbs allow for reciprocalization with the pronominal strategy but disallow the verbal reciprocalization strategy.[6]

(16) a. Deniz ve İlkay birbiri-ler-in-e dokun-du-lar.
Deniz and İlkay each.other-3PL-POSS-DAT touch-PAST-3PL
'Deniz and İlkay touched each other.'

b. *Deniz ve İlkay dokun-uş-tu-lar.
Deniz and İlkay touch-VPL-PAST-3PL
'Deniz and İlkay touched each other.'

(17) a. Deniz ve İlkay birbiri-ler-in-i besle-di-ler.
Deniz and İlkay each.other-3PL-POSS-DAT feed-PAST-3PL
'Deniz and İlkay fed each other.'

b. *Deniz ve İlkay besle-ş-ti-ler.
Deniz and İlkay touch-VPL-PAST-3PL
'Deniz and İlkay fed each other.'

Pronominal reciprocalization is available for all lexical aspect types, and it is transparent. Verbal reciprocalization is highly restricted. Some stative verbs are available for verbal reciprocalization, and others are not. Accomplishments seem to be unavailable for verbal

reciprocalization.[7] Achievements are mostly available but also mostly lead to semantic drift. Activities are mostly available and transparent, but some activities lead to semantic drift. Semelfactives are available for verbal reciprocalization but often display semantic drift. Table 1 provides a short list of verbs along with their distributions. The "Semantic Drift" column indicates the drift associated with the verbal reciprocalization. Pronominal reciprocalization does not lead to semantic drift.[8]

**Table 1.** Reciprocals and lexical aspect.

| Gloss | Verb | Pronominal | Verbal | Semantic Drift |
|---|---|---|---|---|
| State | | | | |
| know | *bil* | ✓ | ✗ | |
| love | *sev* | ✓ | ✓ | 'make love' |
| Activity | | | | |
| carry | *taşı* | ✓ | ✗ | |
| kiss | *öp* | ✓ | ✓ | |
| beat | *döv* | ✓ | ✓ | 'fight' |
| Achievement | | | | |
| bend | *eğ* | ✓ | ✗ | |
| accept | *kabul et* | ✓ | ✗ | |
| become offended with | *küs* | ✓ | ✓ | |
| find | bul | ✓ | ✓ | 'meet' |
| Accomplishment | | | | |
| educate | *eğit* | ✓ | ✗ | |
| make food for | *yemek yap* | ✓ | ✗ | |
| Semelfactive | | | | |
| collide | *çarp* | ✓ | ✓ | |
| hit | *vur* | ✓ | ✓ | 'shoot each other in (a duel)' |

Within the DM framework, the lack of productivity and idiosyncratic interpretation (semantic drift) of a morpheme is usually associated with root phenomena. The facts noted above point towards root attachment (or close to root) for the verbal reciprocal head $v_{\text{RECP}}$.

3.1.2. Interaction with Voice-Alternating Operations

In this section, we provide further support for the low attachment of the verbal reciprocal morpheme using Mirror Principle (Baker 1985) theoretic suffix ordering, as well as semantic composition. First of all, the *-Iş* suffix appears closest to the root and intervenes any tense, aspect, modality, or negation marker and the root, as shown in (18).

(18) Çocuk-lar bak-ış-a-mı-yor-lar-dı.
kid-PL look-RECP-ABIL-NEG-IMPF-3PL-PAST
'The kids could not look at each other.'

While a verbal reciprocal can be further causativized, a causativized verb cannot be turned into a reciprocal using the verbal strategy. Instead, the pronominal strategy must be used. This indicates that the verbal reciprocal morpheme must attach below the CAUS head.

(19) Ayşe ve çocuk bak-ış-tı.
Ayşe and kid look-RECP-PAST
'Ayşe and kid looked at each other.'

(20) a. Ayşe çocuk-lar-ı bak-ış-tır-dı.
Ayşe kid-PL-ACC look-RECP-CAUS-PAST
'Ayşe made the kids look at each other.'

b. *Ayşe çocuk-lar-ı bak-tır-ış-tı.
Ayşe kid-PL-ACC look-CAUS-RECP-PAST
'Ayşe made the kids look at each other.'

(21) a. *Ayşe ve çocuk kedi-ye bak-tır-ış-tı.
Ayşe and kid cat-DAT look-CAUS-RECP-PAST
'Ayşe and the kid made each other look at the cat.'

b. Ayşe ve çocuk birbiri-ler-in-i kedi-ye bak-tır-dı.
Ayşe and kid each.otherPL-POSS-ACC cat-DAT look-CAUS-PAST
'Ayşe and the kid made each other look at the cat'

Finally, verbal reciprocals can be combined with the passive morpheme, which results in an impersonal passive. This is not possible for the pronominal strategy. We take this to indicate that the Voice/Impersonal head occurs above the verbal reciprocal head $v_{\text{RECP}}$.

(22) a. Bun-dan sonra, Ali-yle öp-üş-ül-me-yecek.
this-ABL after Ali-WITH kiss-RECP-PASS-NEG-FUT
'From now on, no one shall kiss Ali.'
'Lit: After this, it will not be kissed with Ali.'

b. *Bun-dan sonra, Ali-yle öp-ül-üş-me-yecek.
This-ABL after Ali-WITH kiss-PASS-RECP-NEG-FUT
'From now on, no one shall kiss Ali.'
'Lit: After this, it will not be kissed with Ali.'

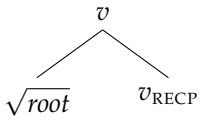
(23) *Bun-dan sonra birbiri-(yle) öp-üş-ül-me-yecek.
this-ABL after each.other-WITH kiss-RECP-PASS-NEG-FUT
'From now on, each other will not be kissed.'

3.1.3. *-(I)ş* Attaches to Roots or *v*

In the preceding sections, we showed that the verbal reciprocal suffix *-(I)ş* attaches lower than passive and causative-forming heads. We also showed that verbal reciprocals are idiosyncratic (not productive) and often lead to semantic drift whereby the combination of the verb and the $v_{\text{RECP}}$ creates a special meaning. For example, *gör* 'see' becomes *görüş* 'meet' rather than a transparent 'see each other' meaning. All of these factors point to a low attachment, probably at the root level.

Distributed morphology distinguishes between the inner domain and the outer domain. The inner domain corresponds to the category free root and the first category-defining head above the root, whereas the outer domain is anything outside the inner domain. Embick and Marantz (2008) argue that the combination of the root and the category-defining head can lead to special interpretations, whereas the combinations in the outer domain lead to predictable interpretations. In light of the observations noted above, we argue that *-(I)ş* is a verbalizing head that can attach directly to roots.

(24) *Reciprocal v can attach to roots.*




Notice that our statement regarding the nature of the reciprocal *v* involves *can* but not *does*. There is a limited number of verbs (mostly verbs describing correspondence, e.g., *messaging*) that involve ditransitive frames.

(25) Deniz İlkay-a mektup/SMS/mesaj/DM yolla-dı.
Deniz İlkay-DAT letter/SMS/message/DM send-PAST
'Deniz sent a letter/SMS/message/D(irect) M(message) to İlkay.'

(26) Deniz İlkay-a şaka yap-tı.
Deniz İlkay-DAT joke make-PAST
'Deniz teased İlkay.'
Lit: 'Deniz made a joke to İlkay.'

(27) Tellak Deniz-e kese at-tı.
bath.attendant Deniz-DAT bath.rub throw-PAST
'The bath attendant gave Deniz a rub.'

All the verbal frames listed above consist of an agent, a recipient, and a theme argument. The verbal reciprocal forms of these constructions involve the combination of the theme argument and the *-lAş* suffix, as shown below.

(28) Deniz ve İlkay mektup-laş-tı.
Deniz and İlkay letter-LAŞ-PAST
'Deniz and İlkay corresponded via letter.'

(29) Deniz ve İlkay şaka-laş-tı.
Deniz and İlkay joke-LAŞ-PAST
'Deniz and İlkay made jokes to each other.'

(30) ?Deniz ve İlkay kese-leş-ti.
Deniz and İlkay bath.rub-LAŞ-PAST
'Deniz and İlkay rubbed each other in the bath.'

Following Gedik (2019), we analyze the *-lAş* suffix in these constructions to be bimorphemic, consisting of a verbalizing head (*-lA*) and the reciprocal morpheme *-(I)ş*. This is supported by the fact that *-lA* can occur with some of these constructions on its own without the reciprocal meaning.

(31) Deniz İlkay-ı şaka-la-dı.
Deniz İlkay-ACC joke-LA-PAST
'Deniz teased İlkay.'

(32) Tellak Deniz-i kese-le-di
bath.attendant Deniz-ACC bath.rub-LA-PAST
'The bath attendant gave Deniz a rub in the bath.'

The *-lA* suffix is not very productive by itself. For example, clauses in which the theme of a correspondence frame is verbalized are not acceptable.[9]

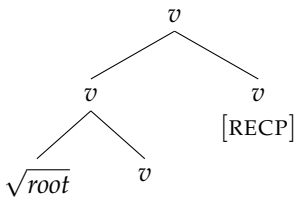
(33) ?/*Deniz İlkay-ı mektup-la-dı.
Deniz İlkah-ACC letter-LA-PAST
'Deniz lettered İlkay.'

(34) ?/*Deniz İlkay-ı mesaj-la-dı.
Deniz İlkah-ACC letter-LA-PAST
'Deniz texted İlkay.'

(35) ?Deniz İlkay-ı DM-le-di.
Deniz İlkah-ACC letter-LA-PAST
'Deniz DMed İlkay.'

It is unclear to us why these verbs are acceptable with *-lAş*, which we analyze as *-lA* + RECIPROCAL, but not with *-lA*. This could be a frequency effect or completely idiosyncratic.[10] The crucial point for our purposes is that the verbal reciprocal can sometimes combine with verbs such as *şakala* 'joke/tease', which is derived from a noun plus a verbalizing suffix. This indicates that the reciprocal head can sometimes attach to a category-changing *v*.

(36) *Reciprocal v can attach to a category-defining v.*




Given the DM assumptions regarding inner and outer domains, our analysis predicts that when the reciprocal combines with *la*, its meaning should be predictable and transparent. This is mostly true but not without exception. The symmetric reciprocal verb *karşılaş* 'run into', which is derived from *karşı* 'across' plus *la*, which means 'greet/meet/welcome (e.g., at the door)', is not fully transparent. It does not mean 'We welcomed each other.' The internal structure (*lAş*) is a lot more complex than we can discuss here. See Gedik (2019) for a thorough discussion of its various analyses. Our main goal in this section has been to show that the verbal reciprocal head $v_{\text{RECP}}$ attaches close to the root.

### *3.2. Semantic Properties*

This section discusses the interpretive properties associated with pronominal and verbal reciprocals. First, we show that pronominal and verbal reciprocals are compatible with a range of reciprocal situations and that the best characterization of Turkish pronominal reciprocals is weak reciprocity rather than strong reciprocity. Next, we show that the verbal reciprocal head $v_{\text{RECP}}$ in Turkish creates irreducibly symmetric predicates as defined by Dimitriadis (2008) and establishes symmetric reciprocals.

#### 3.2.1. Reciprocal Situations

Langendoen (1978) observed a range of relations with differing truth conditions but that are usually grouped under the term reciprocity. Later work by Lichtenberk (1985), Kanski (1987), and Dalrymple et al. (1998) (among others) showed a wider range of situations that can be expressed by reciprocals. Langendoen (1978) shows that most of the reciprocal situations can be handled by weak reciprocity. In the following, we first show that weak reciprocity captures the meaning of reciprocals in Turkish. Then, we discuss how symmetry can be further encoded into a weak reciprocal by means of a symmetric predicate.

Langendoen (1978) defines strong and weak reciprocity as in (37) and (38). Strong reciprocity corresponds to situations wherein every member of a set is in a reciprocal relation with every other member of the/another set. On the other hand, weak reciprocity implies that every member of the set is in some reciprocal relation but that it does not have to be the case that everyone member in a reciprocal relation with every other member.[11]

(37) Strong Reciprocity — Langendoen (1978, p. 179)
$(\forall x, y \in A)(x \neq y \rightarrow xRy)$

(38) Weak Reciprocity — Langendoen (1978, p. 179)
$(\forall x \in A)(\exists y, z \in A)(x \neq y \wedge x \neq z \wedge xRy \wedge zRx)$

Weak and strong reciprocity yield the same relations when the reciprocal relation holds between two individuals only. The difference shows up in cases when more than two individuals are involved in a situation. Consider a situation in which the plural noun phrase 'kids' contains four individuals {a,b,c,d}. Furthermore, assume that the kids are in a reciprocal (*look at each other*) relation as in (39).

(39) Kids are looking at each other.

Strong reciprocity requires 12 distinct ordered pairs, whereas weak reciprocals can function with 4. A strong reciprocal expression can be truthfully uttered only in the strong reciprocal

scenario in (40), whereas a weak reciprocal expression can be truthfully uttered in weak scenarios such as in (41) and (42), as well as the strong reciprocal scenario in (40).

(40) Strong Reciprocal Scenario
*look at* = $\{\langle ab\rangle, \langle ba\rangle, \langle ac\rangle, \langle ca\rangle, \langle ad\rangle, \langle da\rangle, \langle bc\rangle, \langle cb\rangle, \langle bd\rangle, \langle db\rangle, \langle cd\rangle, \langle dc\rangle\}$

(41) Weak Reciprocal Scenario 1
*look at* = $\{\langle ab\rangle, \langle bc\rangle, \langle cd\rangle, \langle da\rangle\}$

(42) Weak Reciprocal Scenario 2
*look at* = $\{\langle ab\rangle, \langle ba\rangle, \langle cd\rangle, \langle dc\rangle\}$ (also symmetric)

Reciprocals in Turkish denote weak reciprocity but not strong reciprocity. Both the pronominal reciprocal in (43) and the verbal reciprocal in (44) can be truthfully uttered in the weak reciprocal scenarios presented above ((41) and (42)). The strong reciprocity reading in (40) is not entailed. They can both be followed-up by (45) felicitously.

(43) Çocuk-lar birbiri-ler-in-e bak-tı.
kid-PL each.other-3PL-POSS-DAT look-PAST
'The kids looked at each other.'

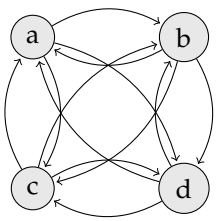
(44) Çocuk-lar bak-ış-tı.
kid-PL look-RECP-PAST
'The kids looked at each other.'

(45) Ama herkes herkes-e bak-ma-dı.
but everyone everyone-DAT look-NEG-PAST
'However, it's not the case that everyone looked at everyone.'

Langendoen (1978) argues that most of the types he discusses can be subsumed by weak reciprocity. We showed that the situations accommodated by weak reciprocity ((41) and (42)) subsume situations expressed by symmetric reciprocity (42) but not strong reciprocity (40). We do not have more to add to this debate, and for the sake of simplicity and exposition, we assume that Turkish pronominal reciprocals denote weak reciprocals. The weakness assumption factors in as an existential quantifier when we define the reciprocal meaning for pronominal reciprocals in Section 4.

At this point, we step back to clarify a few points regarding reciprocity and symmetry. Langendoen (1978), Kanski (1987), and Dalrymple et al. (1998) describe reciprocal situations. The reciprocal situations we have discussed so far are strong and weak reciprocity (in addition to the symmetric and intermediate reciprocity mentioned in Footnote 11). All of these reciprocal situations and the meanings provided by Langendoen (1978) are about the pairing up of individuals in a reciprocal situation. They say nothing about the predicate. The predicate can be symmetric (as in *date*) or it can be asymmetric (as in *see*). For example, strong reciprocity describes a situation wherein every member of a set is in some relation (R) with every member of another set and vice-versa, but the relation (R) itself can be asymmetric. This was sketched in (40). The diagram below clarifies this with an illustration.

(46) *Strong Reciprocity among four individuals*



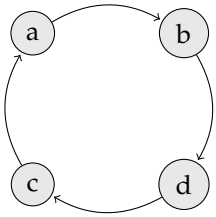

The diagram (46) has four nodes representing individuals and 12 arcs representing the asymmetric relation (R) (*look at*). There are 12 arcs, which indicates that there is a total of 12

*looking-at* events. Each of these events can be associated with a distinct time, space, etc., but they do not have to be.[12] Notice that strong reciprocity also subsumes symmetric reciprocity, as defined in (i) in Footnote 11. This is simply because there are two arcs between each pair, as highlighted in (47). Again, the arcs represent the asymmetric relation *look-at*, but the described eventuality is a symmetric reciprocal situation.

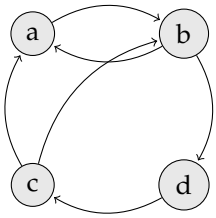
(47) *Strong and symmetric reciprocity*


Let us now turn our attention to a simple example of weak reciprocity. The following diagram in (48) suffices to represent weak the reciprocity given in (38). Alternatively, a slightly more complicated scenario is given in (49).[13]

(48) *An instance of weak reciprocity among four individuals*




(49) *A slightly more complicated instance of weak reciprocity among four individuals*




The key point we want to highlight here is that in all of these reciprocal situations, the predicate is asymmetric. Reciprocity in all these situations stems from the distribution of individuals over an asymmetric event, resulting in a number of distinct asymmetric events. Following Heim et al. (1991) and LaTerza (2014), we argue that all of these can be derived with the reciprocal pronoun, which introduces a distributor–reciprocator handling the distribution of events in a particular way. None of these scenarios matches the meaning of the symmetric verbal reciprocal head head $v_{\text{RECP}}$ (realized as *-(I)ş*). The contribution of $v_{\text{RECP}}$ is to turn an asymmetric predicate into a symmetric predicate. Thus, Langendoen's (1978) symmetric reciprocity schematized in (47) describes a different situation from the verbal symmetric reciprocals in Turkish, which we schematize as in (50).

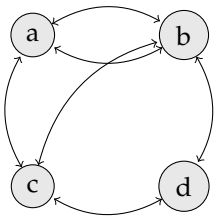
(50) *Symmetric reciprocity caused by the symmetric verbal reciprocal*


Notice that the the arc in (50) is bidirectional, indicating symmetry. An important distinction between Langendoen's (1978) symmetric reciprocity described in (47) and the symmetric relation in (50) is the number of arcs that represent the events; while (47) contains two distinct events that can be associated with a single time reference or two distinct time references, (50) can be associated with a single time reference entailing simultaneity. In the next section, using Siloni's (2012) counting-of-events test, we show that this prediction is

borne out. This accounts for the fact that pronominal reciprocals come out as ambiguous between a single event reading and a plural event reading under the counting test, whereas the symmetric verbal reciprocals in Turkish are always interpreted as single events. We argue that the ambiguity in the pronominal construction follows from whether the two asymmetric arcs between two individuals in a reciprocal situation are associated with the same time reference or two distinct references.

One final point to note is that the reciprocity contributed by distributivity–plurality is independent of the symmetry introduced by a symmetric predicate. Thus, the two can be combined to obtain reciprocal events wherein the relation between the participants is symmetric. We sketch this for an instance of weak reciprocity in (51).

(51) *An instance of weak reciprocity with a symmetric predicate*




To make the example more concrete, assume that the bidirectional arcs in (51) represent the symmetric predicate *date*. Intuitively, (51) describes a scenario wherein a number of individuals are involved in various dating events. The events of dating can occur at different times, but in each event, the relation must be symmetric (i.e., if *a* dated *b* at time $t_0$, then *b* dated *a* at time $t_0$ as well). In Section 4, we argue that this is exactly the meaning of collective constructions as in (52), where the symmetric relation is established by the $v_{\text{RECP}}$ head and the reciprocity (distribution of the symmetric event across individual pairs) is established by the unpronounced reciprocal pronoun *birbiri*.

(52) Çocuk-lar öp-üş-tü.
kid-PL kiss-RECP-PAST
'The kids kissed each other'.

3.2.2. Symmetry

In this section, we provide a range of arguments to show that the verbal reciprocal in Turkish encodes symmetry. A binary relation (R) is symmetric if for all x and y, and R(x,y) is logically equivalent to R(y,x) (Winter 2018). For example, many predicates involving mutual agreement are symmetric.

(53) a. Deniz İlkay-la evlen-di.
Deniz İlkay-WITH marry-PAST
'Deniz married İlkay.'

b. İlkay Deniz-le evlen-di.
İlkay Deniz-WITH marry-PAST
'İlkay married Deniz.'

The verb *evlen* 'marry' is symmetric, and the two clauses in (53) mutually entail one another. Some other verbs that have necessarily symmetric readings are *boşan* 'divorce', *çık* 'date', and *bağlan* 'connect'.

(54) a. Deniz İlkay-dan boşan-dı.
Deniz İlkay-ABL divorce-PAST
'Deniz divorced İlkay.'

b. Deniz İlkay-la çık-tı.
Deniz İlkay-WITH date-PAST
'Deniz dated İlkay.'

As observed by many (Levin 1993; Dimitriadis 2008; Winter 2018; a.o.), symmetric predicates alternate with collective constructions[14] as in (55) and (56).

(55) Deniz ve İlkay boşan-dı.
Deniz and İlkay divorce-PAST.
'Deniz and İlkay divorced.'

(56) Deniz ve İlkay ayrıl-dı.
Deniz and İlkay break.upPAST.
'Deniz and İlkay broke up.'

In addition to predicates that are always symmetric, there are some that can be interpreted symmetrically (and reciprocally) under collective constructions. One such predicate is *sarıl* 'hug'.[15] We call predicates that have an inherently symmetric meaning (e.g., *marry, divorce*, and *date*) and those that are compatible with a symmetric meaning when combined with a plural subject (e.g., *hug*) lexically symmetric predicates.[16]

(57) a. Deniz İlkay-a sarıl-dı.
Deniz İlkay-DAT hug-PAST
'Deniz hugged İlkay.' not symmetric

b. Deniz ve İlkay sarıl-dı.
Deniz and İlkay hug-PAST
'Deniz and İlkay hugged.' symmetric

Lexically symmetric verbs optionally surface with a reciprocal pronoun. An important point to note is that the reciprocal pronominal in these constructions receives the same case (including idiosyncratic lexical case) as the internal argument would take in transitive constructions.

(58) a. Deniz İlkay-a sarıl-dı.
Deniz İlkay-DAT hug-PAST
'Deniz hugged İlkay.'

b. Deniz ve İlkay sarıl-dı.
Deniz and İlkay hug-PAST
'Deniz and İlkay hugged.'

c. Deniz ve İlkay birbirin-e sarıl-dı.
Deniz and İlkay each.other-DAT hug-PAST
'Deniz and İlkay hugged each other.'

(59) a. Deniz İlkay-dan ayrıl-dı.
Deniz İlkay-ABL break.up-PAST
'Deniz broke up with İlkay.'

b. Deniz ve İlkay ayrıl-dı.
Deniz and İlkay break.up-PAST.
'Deniz and İlkay broke up.'

c. Deniz ve İlkay birbirin-den ayrıl-dı.
Deniz and İlkay each.other-ABL break.up-PAST
'Deniz and İlkya broke up with each other.'

The fact that the case morpheme on the optional reciprocal pronoun is lexically determined by the verb indicates that the pronoun is actually the internal argument of the verb, as

lexical case is assigned by verbs to their complements (Woolford 2006). It is worth noting that the lexically determined case on the optional pronoun in these verbs is distinct from the comitative case *-lE* 'with', which appears with the discontinuous verbal reciprocals (60) or the optional adjunct that denotes comitativity with any predicate (61).

(60) Deniz İlkay-la bakı-ış-tı.
Deniz İlkay-WITH look-RECP-PAST
'Deniz and İlkay looked at each other.'

(61) Deniz (İlkay-la) koştu.
Deniz İlkay-WITH run-PAST
'Deniz ran with İlkay.'

Lexically symmetric verbs differ from verbal reciprocals and align with pronominal reciprocals in this respect. The optional reciprocal pronoun always bears comitative case in verbal reciprocals. On the other hand, the case on the reciprocal pronominal (optional or not) is determined by the verb in the pronominal and the lexically symmetric constructions.

(62) a. Deniz İlkay-ı öp-tü.
Deniz İlkay-ACC kiss-PAST
'Deniz kissed İlkay.'

b. Deniz ve İlkay dakikalarca birbirin-i/*yle öp-tü.
Deniz and İlkay for.minutes each.other-ACC/*WITH kiss-PAST
'Deniz and İlkay kissed each other for minutes.'

c. Deniz ve İlkay dakikalarca (birbiri-yle/*ni) öp-üş-tü.
Deniz and İlkay for.minutes each.other-WITH/*ACC kiss-RECP-PAST
'Deniz and İlkay kissed each other for minutes.'

We take lexical case on the reciprocal pronoun in lexically symmetric verbs to be an indicator of argumenthood and transitivity. We argue that the collective constructions in Turkish are always transitive and that they are just like the pronominal reciprocals except that they allow the internal argument to be unpronounced. We argue the same for verbal reciprocals, which allows us to provide a unified analysis of reciprocity in Turkish. In Section 4, we provide the conditions under which the internal argument in a reciprocal construction can remain unpronounced.

Now that we have introduced symmetry and lexically symmetric predicates in Turkish, we move forward to show that verbal reciprocals in Turkish are symmetric. Adopting several tests from Siloni (2003, 2012) and Dimitriadis (2008), we show that verbal reciprocals in Turkish display properties of symmetric predicates.

Siloni (2003) shows that non-symmetric reciprocals lead to ambiguity when they are used with count adverbials, whereas reciprocals with symmetric predicates do not. For example, the pronominal reciprocal construction in (63) can mean a total of five or ten seeing events, whereas the lexically symmetric event in (64) allows for a total of five meeting events only.

(63) Alex and Sam saw each other five times.

(64) Alex and Sam met five times.

Dimitriadis (2004) argues that the difference is attributable to how events are counted across asymmetric and symmetric events. When an asymmetric event is counted, we have the option of counting the total number of events or counting the number of events attributable to each participant. With symmetric events, however, events can be counted only once. Siloni (2012) makes a similar claim, arguing that reciprocals formed in the lexicon are symmetric and that they introduce singular events, whereas reciprocals formed in the syntax introduce a plurality of events where the reciprocal is established via an

accumulation of subevents. We diverge from Siloni's (2012) proposal significantly, taking the counting test to be informative of a reciprocal predicate's symmetry property. With this assumption in place, we observe that the verbal reciprocals in Turkish are always symmetric. While (65) is ambiguous between a total of five or ten seeing events, (66) only allows for a total of five mutual seeing events.

(65) Deniz ve İlkay birbiri-ler-in-e beş defa bak-tı-lar.
Deniz and İlkay each.other-PL-POSS-DAT five time look-PAST-PL
'Deniz and İlkay looked at each other five times.'

(66) Deniz ve İlkay beş defa bak-ış-tı-lar.
Deniz and İlkay five time look-RECP-PAST-PL
'Deniz and İlkay looked at each other five times.'

Notice that this is what we foreshadowed at the end of Section 3.2.1. Reciprocity established with the reciprocal pronoun in (65) contains an asymmetric predicate, whereas that in (66) contains a symmetric predicate. Each symmetric event is counted only once, as it creates a single symmetric arc. On the other hand, reciprocity established with asymmetric predicates via reciprocal pronouns (which involves distributivity; see Section 4) requires two arcs per reciprocal event. When the arcs are bound to the same time variable, they are counted as singular; when they are bound to distinct time variables, they are counted as plural, leading to ambiguity.[17]

Another test proposed by Siloni (2012) is the 'I' versus 'we' readings of reciprocals. The sentence in (67) is three-way ambiguous, and the disambiguated meanings are given in (68).

(67) John and Mary told each other that they should leave. (Heim et al. 1991, p. 64)

(68) *Disambiguated Readings* (Heim et al. 1991, p. 64)

a. "*you* reading"
John told Mary that she should leave, and Mary told John that he should leave.

b. "*I* reading"
John told Mary that he should leave, and Mary told John that she should leave.

c. "*we* reading"
John told Mary, and Mary told John, "We should leave."

The distinction was originally highlighted by Higginbotham (1985) (who cites Daniel Finer's unpublished work). Heim et al. (1991) refer to the phenomenon as *the problem of grain* and name the readings "I", "you", and "we" readings for ease of exposition. Siloni (2012) shows that syntactic reciprocals, which correspond to our pronominal reciprocals, are ambiguous between "I" and "we" readings, whereas lexical reciprocals, which are symmetric, only allow a "we" reading. Consider the following example from Siloni (2012).

(69) *"I" reading available* (Siloni 2012, p. 263)

a. #John and Paul defeated each other in the final.
b. John and Paul said that they defeated each other in the final.

Sentence (69-a) is not felicitous, as it leads to a contradiction based on the assumption that defeat is an asymmetric event. (69-b) does not lead to a contradiction, as it allows the "I" reading to survive in a context wherein John said that he defeated Paul and Paul said that he defeated John in the final. Obviously, one of them must be lying, but the sentence is felicitous, and there is no contradiction.

While reciprocals formed with asymmetric predicates allow both "I" and "we" readings, symmetric predicates only allow a "we" reading, as shown in (70).

(70) John and Mary said they kissed.

a. "*we* reading"
'John and Mary said that they were involved in an event a mutual kissing.'

b. "*I* reading"
'#John said that he kissed Mary, and Mary said that she kissed John.'

The facts are similar in Turkish. Pronominal reciprocals allow both "I" and "we" readings, whereas verbal reciprocals only allow the "we" reading. We take this to be an indicator of verbal reciprocals being symmetric.

(71) Deniz ve İlkay birbiri-lerin-i final-de yen-dik-ler-in-i
Deniz and İlkay each.other-PL-ACC final-LOC beat-NMLZ-PL-POSS-ACC
söyle-di-ler.
tell-PAST-PL
'Deniz and İlkay said that they defeated each other in the final.' (*I reading available*)

(72) #Deniz ve İlkay final-de yen-iş-tik-ler-in-i söyle-di-ler.
Deniz and İlkay final-LOC beat-RECP-NMLZ-PL-POSS-ACC tell-PAST-PL
'Deniz and İlkay said that they defeated each other in the final.' (*I reading not available*)

While (71) is felicitous, as an "I" reading is available, (72) is not felicitous, as it amounts to reporting a contradiction.

A third and final diagnostic for symmetry in reciprocals is the availability of the so-called discontinuous reciprocals. Dimitriadis (2004) shows that discontinuous reciprocals are only available with symmetric predicates. In Turkish, discontinuous constructions are available with lexically symmetric predicates (73) and verbal reciprocals (74) but not with pronominal reciprocals (75). We take this as further support for the claim that verbal reciprocals in Turkish are symmetric.

(73) Deniz dün İlkay-la evlen-di.
Deniz yesterday İlkay-WITH marry-PAST
'Yesterday, Deniz married İlkay.' lexically symmetric

(74) Deniz dün İlkay-la bak-ış-tı.
Deniz yesterday İlkay-WITH look-RECP-PAST
'Yesteday, Deniz and İlkay looked at each other.' verbal

(75) *Deniz dün İlkay-la birbirin-e bak-tı.
Deniz yesterday İlkay-WITH each.other-DAT look-PAST
'Yesterday, Deniz and İlkay looked at each other.' pronominal

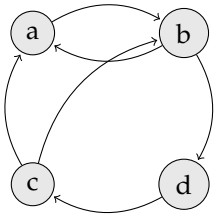
To sum up this section, we have shown that verbal reciprocals in Turkish encode symmetry, unlike pronominal reciprocals, which do not impose a symmetry requirement on the predicate. Before closing this section, we add a seemingly exceptional scenario wherein an ostensibly verbal reciprocal construction does not entail symmetry but instead leads to a weak reciprocity reading. Consider the sentence in (76), where the predicate is *it* "push".

(76) Çocuk-lar it-iş-ti.
kid-PL push-VPL-PAST
'Kids pushed each other.'

In Section 2, we mentioned the pluractional use of the *-(I)ş* morpheme with intransitive predicates and deferred the discussion of a transitive verb combining with the pluractional head $v_{\text{PL}}$. Here, we turn to a transitive verb combining with the pluractional head $v_{\text{PL}}$.

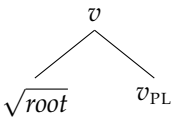
In plain English, (76) describes a situation wherein several random pushing events are happening among a group of kids. Predicate symmetry is not entailed. We sketched this scenario in (49), which we repeat below in (77).

(77) *A slightly more complicated instance of weak reciprocity among four individuals*




We argue that this is a welcomed result, and it is actually predicted by our proposal that *-(I)ş* is an underspecified morpheme that can realize the reciprocal head $v_{\text{RECP}}$, which hosts the features [SYMMETRIC, PLURAL], as well as the pluractional head $v_{\text{PL}}$, which hosts the feature [PLURAL] only. We argue that the non-symmetric weak reciprocal reading in (76) is simply a corollary of pluractionality, whereby the verb combines with the pluractional head and the syntactic structure is as in (78).

(78) *Pluractional*




In our proposal, there is nothing to prevent a transitive verb from combining with a pluractional or a verbal reciprocal head (barring selectional idiosyncrasies). This suggests that a transitive verb should be combinable with a pluractional or a symmetric verbal reciprocal. (76) illustrates a case of a pluractional head combining with a transitive verb. Below, we show that the same verb can combine with a symmetric verbal reciprocal that entails symmetry. For this, we need to consider scenarios with three or more individuals because a symmetric situation is a logical consequence of a pluractional transitive involving two individuals.

Remember that discontinuous reciprocals require symmetry. Sentences (79) and (80) indicate that a discontinuous construction with three or more participants entails symmetry but not mere pluractionality.

(79) Mavi-ler yeşil-ler-le it-iş-ti.
blue-PL green-PL-WITH push-RECP-PAST
'The blues pushed the greens.'

(80) Deniz ve İlkay Erk ve Selin-le it-iş-ti.
Deniz and İlkay Erk and Selin-WITH push-RECP-PAST
'Deniz and İlkay pushed Erk and Selin.'

The reciprocal constructions in (79) and (80) entail symmetry either between the groups or across members of each group. Simple pluractionality does not capture the meanings according to which the individual members of each group randomly push one another, as depicted in (77). This is one of the reasons why we posit two distinct heads: $v_{\text{RECP}}$, which carries the features [SYM, PL], and $v_{\text{PL}}$, which carries the feature [PL]. We argue that while symmetry and pluractionality share a common property of plurality of events, they are not the same.

To summarize this section, we have argued that verbal reciprocals formed with the reciprocal head $v_{\text{RECP}}$ encode symmetry. Some transitive verbs can be combined with a pluractional head ($v_{\text{PL}}$) to achieve a type of weak reciprocity when combined with a plural subject, but the weak reciprocal reading and the symmetric reading have different morphosyntactic structures and entailments, while event plurality combined with a plural subject of a transitive verb can lead to a weak reciprocal reading (which covers symmetric

scenarios involving two individuals), and entailment of predicate-level symmetry requires more than just pluractionality.

### *3.3. Discontinuous Reciprocals*

In this section, we discuss the properties of the so-called discontinuous reciprocals where the reciprocation holds between the subject and the oblique argument introduced by the comitative postposition/case (*ile/(-y)lE*). We argue that the discontinuous phrase is an argument but not an adjunct.[18] This is significant for our analysis of how symmetric and non-symmetric reciprocals are built in Turkish.

Symmetric reciprocals seem to alternate between a collective construction and a discontinuous construction, as in (81) and (82).

(81) Ali ve Ayşe uzun uzun bak-ış-tı.
Ali and Ayşe long long look-RECP-PAST
'Ali and Ayşe looked at each other for a long time.' collective construction

(82) Ali uzun uzun Ayşe-yle bak-ış-tı.
Ali long long Ayşe-WITH look-RECP-PAST
'Ali and Ayşe looked at each other for a long time.' discontinuous construction

The two constructions are usually considered to be derived from one another or from a transitive counterpart. Reinhart and Siloni (2005) treat collective constructions like those in (81) as being derived from a transitive base via an arity-reduction operation. Siloni (2001) treated the discontinuous construction as being derived from the collective construction.[19] Lakoff and Peters (1969) and Winter (2018) derive transitive symmetric predicates from their collective counterparts. Dimitriadis (2004) argues that the collective constructions are derived from the discontinuous constructions. Following Dimitriadis (2004), we argue that discontinuous constructions are transitive and that the verbal reciprocal operation does not reduce the arity of the verb. Instead, it creates a symmetric predicate. We also argue that collective constructions are like discontinuous constructions except that their internal arguments are unpronounced.

Let us start by establishing the argument status of the comitative phrases in discontinuous constructions. Komlósy (1994) shows that the discontinuous phrase in reciprocals can be bound existentially, unlike the optional comitative phrase, which can be generally added to any predicate. The verbal reciprocal construction in (83-b) entails that Deniz kissed with someone, whereas the non-reciprocal construction in (84-b) does not.

(83) a. Deniz İlkay-la öp-üş-tü.
Deniz İlkay-WITH kiss-RECP-PAST
'Deniz kissed with İlkay.'

b. Deniz öp-üş-tü.
Deniz kiss-RECP-PAST
'Deniz kissed with someone.'

(84) a. Deniz İlkay-la koş-tu.
Deniz İlkay-WITH run-PAST
'Deniz ran with İlkay.'

b. Deniz koş-tu.
Deniz run-PAST
'Deniz ran.'

Another piece of evidence for the argument status of the discontinuous phrase provided by Komlósy (1994) is that only the reciprocal construction (85) allows a reciprocal pronoun, whereas the non-reciprocal construction (86) does not, nor does the pluractional formed with *-(I)ş* (87).

(85) Deniz ve İlkay (birbiri-yle) öp-üş-tü.
Deniz and İlkay each.other-with kiss-RECP-PAST
'Deniz and İlkay kissed (each other).' reciprocal

(86) Deniz ve İlkay (*birbiri-yle) koş-tu.
Deniz and İlkay each.other-WITH ran-PAST
'Deniz and İlkay ran (*with each other).' non-reciprocal

(87) Deniz ve İlkay (*birbiri-yle) koş-uş-tu.
Deniz and İlkay each.other-WITH ran-RECP-PAST
'Deniz and İlkay ran around (*with each other).' pluractional

A third argument comes from Dimitriadis (2004), who shows that ordinary comitative phrases do not require the comitative adjunct to participate in the event and receive the same thematic roles as the subject, whereas the discontinuous phrase is required to receive the same thematic roles as the subject.

(88) Deniz alışveriş-i İlkay-yla (birlikte) yap-tı.
Deniz shopping-ACC İlkay-WITH (together) do-PAST
'Deniz did the shopping (together) with İlkay.' non-reciprocal

(89) Deniz İlkay-la (*birlikte) bak-ış-tı.
Deniz İlkay-WITH (together) look-RECP-PAST
'Deniz and İlkay looked at each other (*together).' reciprocal

While in (88), the comitative adjunct *İlkay* does not have to do any shopping (they might be just standing by while Deniz is doing the shopping), in (89), Deniz and İlkay must be engaged in the mutual event of looking at one another, requiring the discontinuous phrase to be both the agent and the theme of the event. Another thing to note is that comitative phrases can be accompanied by the collectivity-denoting adjunct *birlikte* 'together', whereas discontinuous phrases cannot.

Our treatment of the discontinuous phrase as an argument predicts that it should be able to accommodate any type of argument, including common nouns, R expressions, pronouns, reflexive pronouns, and reciprocal pronouns. Examples (90)–(94) show that this is exactly the case.

(90) Deniz çocuk-la bak-ış-tı.
Deniz kid-WITH look-RECP-PAST
'Deniz and the kid looked at each other.'

(91) Deniz onun-la bak-ış-tı.
Deniz her/him-WITH look-RECP-PAST
'Deniz and she/he looked at each other.'

(92) Deniz İlkay-la bak-ış-tı.
Deniz İlkay-WITH look-RECP-PAST
'Deniz and İlkay looked at each other.'

(93) Deniz kendisi-yle (ayna-da) bak-ış-tı.
Deniz self-WITH mirror-LOC look-RECP-PAST
'Deniz and himself/herself looked at each other (in the mirror).'

(94) Deniz ve İlkay (birbiriy-le) bak-ış-tı.
Deniz and İlkay each.other-with look-RECP-PAST
'Deniz and İlkay looked at each other.'

Now that we have provided some argumentation for the argument status of discontinuous phrases, we compare the properties of discontinuous constructions with those of collective constructions and argue that collective constructions are discontinuous constructions with an optionally silent reciprocal pronoun. This gives us a unified syntactic and semantic analysis of reciprocals in Turkish. The first notable difference is that the

discontinuous construction can have a singular subject, whereas the collective construction requires a plural subject.[20]

(95) Çocuk-lar / *çocuk bak-ış-tı.
kid-PL / kid look-RECP-PAST
'The kids looked at each other. / *The kid looked at each other.'

(96) Çocuk-lar / çocuk İlkay-la bak-ış-tı.
kid-PL / kid İlkay-WITH look-RECP-PAST
'The kids and İlkay looked at each other. / The kid and İlkay looked at each other.'

We argue that the ungrammaticality of the collective construction with a singular subject is due to exactly the same reason as why a pronominal reciprocal is ungrammatical with a singular subject, i.e., the reciprocal pronoun (97).[21] The reciprocal pronoun *birbiri* optionally surfaces in collective constructions, as shown in (94), and it requires a plural antecedent.

(97) Çocuklar / *çocuk birbirin-i gör-dü.
kid-PL / kid each.other-ACC see-PAST
'The kids saw each other. / *The kid saw each other.'

The second difference is that the collective construction is ambiguous between a reading wherein the reciprocity holds between the members of the subject or between each member of the subject and an existentially bound argument, whereas an existentially bound reading is not available in the discontinuous construction.

(98) Deniz ve İlkay öp-üş-tü.
Deniz and İlkay kiss-RECP-PAST
'Deniz and İlkay kissed.'
a. Reading 1 : kiss = $\{\langle deniz, ilkay\rangle, \langle ilkay, deniz\rangle\}$
b. Reading 2 : kiss = $\{\langle\langle deniz, x\rangle\ \langle x, deniz\rangle\rangle, \langle\langle ilkay, y\rangle, \langle y, ilkay\rangle\rangle\}$

The existentially bound reading schematically sketched in (98-b) as Reading 2 is not available when the discontinuous phrase is overtly expressed (unless the discontinuous phrase contains an existentially quantified overt comitative phrase, e.g., *birileriyle* 'with some people').[22] This is not surprising, as we have shown earlier in (83-b) that when the object is null, it can be interpreted as existentially bound. Once the reciprocal pronoun is overtly expressed as in (94), the existentially bound reading disappears. This indicates that clauses such as (98) are simply ambiguous between an existentially bound reading and a reading wherein the silent argument is a reciprocal pronoun—essentially two distinct syntactic structures.

A more important distinction between the collective and discontinuous constructions regards the sets from which they draw the individuals that stand in a reciprocal relation. In collective constructions, the individuals seem to be drawn from the subject set, whereas in the discontinuous constructions, reciprocity cannot hold between the members of a single argument (e.g., subject). Instead, it has to hold across the members of the subject and the object sets.

(99) Ali ve Ayşe bak-ış-tı.
Ali and Ayşe look-RECP-PAST
'Ali and Ayşe looked at each other. '
a. look.at = $\{\langle ali, ayşe\rangle, \langle ayşe, ali\rangle\}$
b. look.at = $\{\langle\langle ali, x\rangle\ \langle x, ali\rangle\rangle, \langle\langle ayşe, y\rangle, \langle y, ayşe\rangle\rangle\}$

(100) Ali ve Ayşe Deniz-le bak-ış-tı.
Ali and Ayşe Deniz-WITH look-RECP-PAST
'Lit:Ali and Ayşe looked at each other with Deniz'
'Ali and Deniz looked at each other and Ayşe and Deniz looked at each other.'
a. look.at = $\{\langle\langle ali, deniz\rangle, \langle deniz, ali\rangle\rangle\ \langle\langle ayşe, deniz\rangle, \langle deniz, ayşe\rangle\rangle\ \}$

b. *look.at = $\{\langle\langle ali, ayşe\rangle, \langle ayşe, ali\rangle\rangle, ...\}$

This phenomenon is not peculiar to Turkish, and it has been observed by many. In fact, Frajzyngier (2000) states that the comitative phrase extends the scope of the reciprocal to the other argument as the coparticipant in the event. However, this does not explain why reciprocal relations cannot be established within the subject set when an object is present. Instead, we argue that the reciprocal constructions are always transitive and that reciprocal relations are always generated across two distinct sets of individuals introduced by two distinct arguments. Reciprocal relations established within the subject set are an illusion created by the fact that the reciprocal pronoun is unpronounced.

So far, we have argued that verbal reciprocals in Turkish are transitive constructions and can surface as either discontinuous constructions or collective constructions. We have argued that collective constructions are simply transitive constructions with an unpronounced reciprocal pronoun. We left open two points: (1) conditions under which the reciprocal pronoun can remain unpronounced and (2) the contribution of the reciprocal pronoun in clauses with a verbal reciprocal.

Let us start with the conditions under which the reciprocal pronoun can remain unpronounced. The optionality of the reciprocal pronoun correlates with its recoverability. We discuss two environments in which it can remain unpronounced. The first environment is in the presence of a symmetric predicate. The predicate can be lexically symmetric or it can be created in the syntax with the verbal reciprocal head $v_{\text{RECP}}$. We hypothesize that the presence of a symmetric verb licenses the reciprocal pronoun to be unpronounced, as it is still possible to recover the reciprocity information from the verb. A non-symmetric verb cannot license the reciprocal pronoun to remain unpronounced unless there is some other way to recover the reciprocity of the event.

(101) Deniz ve İlkay (birbiriy-le) evlen-di / bak-ış-tı.
Deniz and İlkay each.other-WITH marry-PAST / look-RECP-PAST
'Deniz and İlkay married /looket at each other.'

(102) Deniz ve İlkay *(birbirin-e) bak-tı.
Deniz and İlkay each.other-DAT look-PAST
'Deniz and İlkay looked at each other.'

While the reciprocal pronoun in (102) cannot be dropped, there are contexts in which it is droppable once a proper antecedent from which the reciprocity information can be recovered is identified. As shown by Şener and Takahashi (2010), arguments can remain silent in Turkish fairly easily.[23] We observe that the same holds for reciprocal pronouns in certain contexts, as in (103).

(103) a. Ali ve Ayşe birbirini gördü. Başka kim birbirini gördü?
Ali and Ayşe each.other saw. else who each.other saw
'Ali and Ayşe saw each other. Who else saw each other?'
b. Deniz ve İlkay (birbirini) gördü.
Deniz and İlkay each.other saw
'Deniz and İlkay saw each other'

Now that we have provided the conditions under which reciprocal pronouns can remain unpronounced, we turn our attention to the contribution of the reciprocal pronoun in symmetric verbal reciprocals. Instead of attempting to understand the contribution of the reciprocal pronoun in a verbal reciprocal construction, we reverse the problem and attempt to understand the contribution of the verbal reciprocal head in a pronominal reciprocal construction. Consider the pronominal reciprocal construction in (104).

(104) Deniz ve İlkay birbirin-e bak-tı.
Deniz and İlkay each.other-DAT look-PAST
'Deniz and İlkay looked at each other.'

Following Heim et al. (1991), we assume that the reciprocal pronoun has a double duty of a distributor and reciprocator, which pairs every member of the subject set with some distinct member of the object set (which is anaphoric to the subject set).[24] This is exactly what the reciprocal pronoun does in (104). The second member of the (near) minimal pair formed by (104) and (105) shows that the contribution of the verbal reciprocal morpheme is symmetry of the predicate.

(105) Deniz ve İlkay birbiri-yle bak-ış-tı.
Deniz and İlkay each.other-WITH look-RECP-PAST
'Deniz and İlkay looked at each other.'

Descriptively, (105) denotes that each member of the subject and some distinct member of the anaphoric pronoun looked at each other and that the relation was symmetric. All the tests we applied in Section 3.2.2 regarding the symmetric reciprocals hold here as well.

To summarize this section, we have argued that all the reciprocals in Turkish are transitive. The comitative phrases in discontinuous constructions are arguments, and the collective constructions are simply discontinuous constructions with an optionally unpronounced reciprocal pronoun. In the next section, we provide an analysis of how symmetry is established and how it relates to plurality and reciprocity to account for the fact that the *-(I)ş* suffix appears with both symmetric reciprocals and pluractionals.

## 4. Plurality, Symmetry, and Reciprocity

So far, we have presented a range of facts regarding the pronominal and verbal reciprocals in Turkish. Some of the key highlights are as follows. Verbal reciprocals are formed with the morpheme *-(I)ş*, which is ambiguous between a pluractional and a reciprocal. Verbal reciprocals in Turkish are necessarily symmetric.[25] Subjects of verbal reciprocals need not be plural, and they allow a symmetric reciprocal with a reflexive pronoun (93). On the other hand, pronominal reciprocals do not allow singular subjects or a reciprocal relation with a reflexive pronoun. In addition to these facts, we have also built some arguments in favor of treating verbal reciprocals as transitive constructions (at least semantically; both collective and discontinuous constructions). In the following, we build a semantic analysis that accounts for the facts discussed above. The organization of this section is as follows. We first discuss the relation between plurality of events and symmetry, providing a semantic analysis of symmetric verbal reciprocals. Next, we provide an account of pronominal reciprocals, treating the reciprocal pronoun *birbiri* as a complex lexical item that contains a distributor and a reciprocator in its denotation. Finally, we combine the two to account for sentences such as (105), which contain both a reciprocal pronoun and a verbal reciprocal morpheme.

### *Building Symmetric Predicates*

A two-place predicate is symmetric if and only if exchanging its arguments preserves the truth values (Dimitriadis 2008). For example, the verbal reciprocal constructions in (106) entail one another.

(106) a. Deniz İlkay-la bak-ış-tı.
Deniz İlkay-WITH look-RECP-PAST
'Deniz and İlkay looked at each other.'

b. İlkay Deniz-le bak-ış-tı.
İlkay Deniz-WITH look-RECP-PAST
'İlkay and Deniz looked at each other.'

In addition to the discontinuous constructions above, the collective construction in (107) is also in a mutual entailment relation with the sentences in (106).

(107) Deniz ve İlkay bak-ış-tı.
Deniz and İlkay look-RECP-PAST
'Deniz and İlkay looked at each other.'

Finally, all the sentences in (106) and (107) are in mutual entailment with the sentence in (108).

(108) Deniz looked at İlkay and İlkay looked at Deniz (and the two events overlapped).

An important question raised by these facts is whether the symmetric constructions in (106) and (107) denote single events or multiple overlapping events. Siloni (2012) observes that they behave like singular events under count adverbials. For example, the symmetric reciprocal in (66), where a symmetric relation between two individuals is modified by the adverbial *beş defa* 'five times', cannot mean that there were ten distinct events. It can only mean that there were five symmetric events. In Section 3.2.2, we discussed how the singular count reading is established.

Another key point regarding symmetric relations is that two arguments hold the same set of thematic roles. For example, in (109), both the subject and the discontinuous argument are the AGENT and THEME in the relation.

(109) Deniz İlkay-la bak-ış-tı.
'Deniz İlkay-WITH look-RECP-PAST
'Deniz and İlkay looked at each other.'

Siloni (2001, 2012) proposes a lexical reciprocalization operation that bundles thematic roles and adds a symmetry diacritic.

(110) Reciprocal bundling
V(ACC) $[\theta_i][\theta_j] \longrightarrow V_{SYM}[\theta_i - \theta_j]$ (Siloni 2012, p. 280)

One of the main motivations behind Siloni's thematic bundling is collective constructions, which are treated as intransitives by (Siloni 2012). The intransitivity assumption requires the same argument to receive two theta roles and both of the theta roles to be assigned to a single argument. Siloni provides (111) as an illustration.

(111) a. Verb entry: *kiss* $[Ag][Th]$
b. Reciprocalization output: $\text{kiss}_{SYM}[Ag - Th]$
c. Syntactic representation: John and $\text{Mary}_{Ag-Th}$ $\text{kissed}_{SYM}$.

Siloni (2012) suggests two possible ways to interpret collective constructions with thematic bundling: as collective or distributive. In the collective reading, all the members of the subject are collectively involved in a single reciprocal event similar to *gather* or *lift a piano collectively*. This works well with the observation that symmetric events seem to be singular under the adverbial counting test. However, the collective reading seems to be problematic for the collective constructions in Turkish, as collective predicates can be modified by the adverb *(hep) birlikte* '(all) together' but the symmetric collective constructions cannot.[26]

(112) Deniz ve İlkay masa-yı birlikte taşı-dı-lar.
Deniz and İlkay desk-ACC together carry-PAST-PL
'Deniz and İlkay carried the desk together.'

(113) *Deniz ve İlkay birlikte bak-ış-tı-lar.
Deniz and İlkay together look-RECP-PAST-PL
'Deniz and İlkay kissed together.'[27]

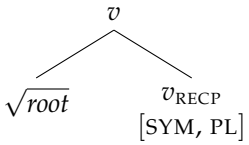
The distributive reading also leads to a problem. As identified by (Dimitriadis 2008) and acknowledged by Siloni (2012), thematic bundling leads to a reflexive reading when the predicate is distributed over the members of the subject, which is not the appropriate

reading of collective constructions. A second problem regarding distributivity noted by (Siloni 2012) is that it requires a multiplicity of events, as a single event cannot involve two identical roles (Bresnan 1982; Parsons 1990; Carlson 1998; among others). However, this seems to contradict the observation that collective constructions denote singular events for counting, as they are symmetric.

To sum up the problem, a symmetric event requires each of its arguments to hold both of the theta roles assigned by the predicate, count as a singular event under count adverbials, and not necessarily be interpreted to have a collective subject. To account for these facts, Dimitriadis (2008) resorts to an analysis that utilizes the idea of plurality of events following Link (1998). Using Link's specifying relation between events, Dimitriadis (2008) proposes that a symmetric event consists of two eventualities of the same type, with permuted roles for its participants. He suggests that counting adverbials target the superevent specified by subevents. The idea that symmetric events are pluralities of events is adopted by Siloni (2012), Winter (2018) among others and also proposed independently for verbal reciprocals by Rubinstein (2009) and recently by Al-Raba'a et al. (2022). In the following, we adopt the view that symmetric predicates denote a plurality of events, where two atomic events are proper parts of an event and the predicates associated with the events are of the same type with permuted arguments (Dimitriadis' (2008) intuition).

We propose that the verbal reciprocals in Turkish are built in the syntax by combining a reciprocal head ($v_{\text{RECP}}$) with the verbal root or the verbalizer head as in (114). The reciprocal head contains information regarding plurality and symmetry. This is required, as simple plurality does not suffice to yield a symmetric predicate, and symmetry is not possible without plurality. Plurality and symmetry are coded as interpretable features [SYM, PL].

(114) *Verbal Reciprocal*




Semantically, the reciprocal head $v_{\text{RECP}}$ takes a two-place predicate and returns a symmetric plural predicate with two atomic events as proper parts of a larger event. The denotation of $v_{\text{RECP}}$ is given in (115). We represent the atomic *proper part-of* relation with "$<$".

(115) $[\![v_{\text{RECP}}]\!] = \lambda R_{\langle e,e,v,t\rangle}\lambda y\lambda x\lambda e[\exists e', e'' < e \ \wedge R(y)(x)(e') \wedge R(x)(y)(e'')]$

For example, the predicate *kiss* in (116) becomes the symmetric reciprocal predicate (117).

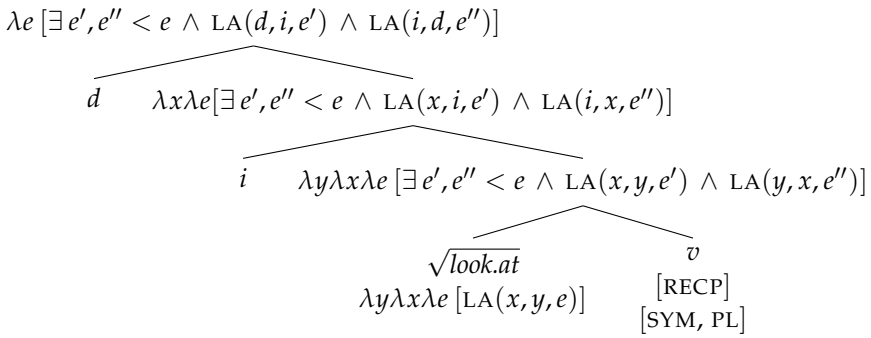
(116) $[\![kiss]\!] = \lambda y\lambda x\lambda e\ [kiss(x, y, e)]$

(117) $[\![kiss_{SYM}]\!] = \lambda y\lambda x\lambda e[\exists e', e'' < e \wedge kiss(x, y, e') \wedge kiss(y, x, e'')]$

Now that we have defined the semantic contribution of the verbal reciprocal head, we can start deriving the reciprocal constructions we discussed in the previous sections and show how our proposal accounts for them. We start with the discontinuous constructions with singular subjects and objects, which is the simplest case in our analysis. Consider the discontinuous construction in (118). Its partial compositional derivation is given in (119), where the symmetric predicate first combines with the internal argument and then with the external argument.[28] Following Davidson (1967) (among many others), we assume that the predicate of events is existentially closed. However, we do not show it in the derivations below to save space on the tree diagrams.

(118) Deniz İlkay-la bak-ış-tı.
'Deniz İlkay-WITH look-RECP-PAST
'Deniz and İlkay looked at each other.'

(119)




One thing to note is that pronominal reciprocals do not allow reflexives, which is usually encoded in the semantics of the reciprocal pronoun (Heim et al. 1991). However, verbal reciprocals in Turkish are completely acceptable with a reflexive pronoun, as shown in (93). Our proposal does not block reflexives in verbal reciprocals and predicts that they can occur in symmetric verbal reciprocals simply because the verbal reciprocal is a symmetric predicate without any restrictions on what the internal argument can be, as long as the thematic (and any other independent) conditions are met.[29]

The next complication is to account for the discontinuous constructions with plural arguments (subject, object, or both). In doing so, we limit our attention to a relatively simple but ambiguous sentence given in (120). We consider this to be a relatively simple case, as we merely added a plural subject with two members. However, the sentence is at least two-way ambiguous between a collective and distributive reading.[30]

(120) Deniz ve İlkay Ayşe-yle it-iş-ti.
Deniz and İlkay Ayşe-WITH push-RECP-PAST
'Deniz and İlkay pushed with Ayşe.'

a. Scenario for the collective reading.
⟨*deniz*, *ilkay*⟩ ⟷ *ayşe*
Deniz, İlkay, and Ayşe are playing a game in which they need to push a cart from both ends against each other. On the one side of the cart is Ayşe, and on the other side of the cart is Deniz and İlkay teaming up to push the cart together.

b. Scenario for the distributed reading.
*deniz* ⟷ *ayşe*
*ilkay* ⟷ *ayşe*
Deniz, İlkay, and Ayşe are playing a game in which they push each other. The goal is to push the opponent outside a mat. Ayşe is the stronger player, and she has been pushing a lot of her opponents outside the mat. First, Deniz and Ayşe push each other. Then, İlkay and Deniz push each other. Deniz and İlkay never push one another.

The distributive and collective readings are independent of the verbal reciprocal. They arise as a result of the plurality of the subject and have nothing to do with the verbal reciprocal. The same kind of ambiguity arises even when the verb is not reciprocal, as in (121).

(121) Deniz ve İlkay Ayşe-yi it-ti.
Deniz and İlkay Ayşe-ACC push-PAST
'Deniz and İlkay pushed Ayşe.'

The contribution of the verbal reciprocal is symmetry, just as in the singular case discussed earlier. Following Link (1983, 1998), we assume that the domain of individuals

(D) forms a join-semilattice, with the sum operation ($\oplus$) forming plural individuals from atomic individuals.

(122) a. Atomic individuals = $\{a, b\}$;
b. Plural individual = $a \oplus b$.

Elements in the domain of individuals are partially ordered by the part-of relation ($\leq$), such that $a \leq b$ if and only if $a \oplus b = b$ for some $a, b \in D$.

(123) Part-of relations[31]
a. $a \leq a \oplus b$;
b. $b \leq a \oplus b$.

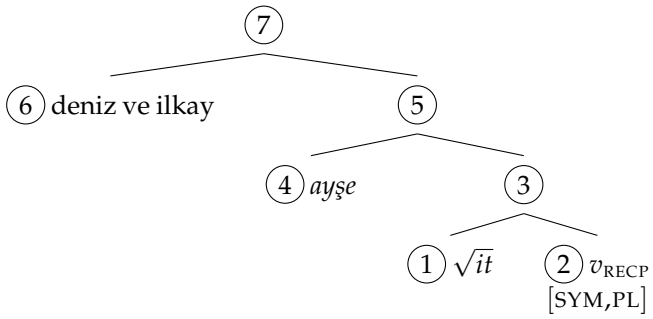
Following Lasersohn (1992), Artstein (1997), Landman (2000), Rubinstein (2009), and Siloni (2012), among others, we assume that the domain of events is similar to the domain of individuals in terms of plurality. This serves as the basis of our account of symmetry presented above.

As for the ambiguity in (120), we assume that plurals make available a covert distributive operator following Heim et al. (1991), Schwarzschild (1993), among many others. Adopting a version of Lasersohn's (1998) distributivity operator as given in Champollion (2017), we define the distributivity operator as in (124), which distributes the atomic individuals of a plural individual over a predicate.

(124) Lasersohn's distributivity operator (D) (Champollion 2017, p. 176).
$[\![D]\!] = \lambda P_{\langle e,vt\rangle} \lambda X \lambda e \forall y [y \leq_{atom} X \rightarrow \exists e' [e' \leq e \wedge P(y)(e')]]$[32]

The ambiguity is due to the presence or absence of the covert distributivity operator. When the distributivity operator is not present, the subject is interpreted as the sum of the individuals, leading to a collective interpretation as in (125).[33] When the distributivity operator is present, atomic individuals in the subject are distributed over events introduced by the distributivity operator as in (126).

(125) *Collective reading of (120)*




(1) $[\![\sqrt{it}]\!] = \lambda y \lambda x \lambda e\, [\text{PUSH}(x, y, e)]$

(2) $[\![v_{\text{RECP}}]\!] = \lambda R_{\langle e,e,v,t\rangle} \lambda y \lambda x \lambda e [\exists e', e'' < e \wedge R(y)(x)(e') \wedge R(x)(y)(e'')]$

(3) $[\![itiş]\!] = \lambda y \lambda x \lambda e\, [\exists\, e', e'' < e \wedge \text{PUSH}(x, y, e') \wedge \text{PUSH}(y, x, e'')]$

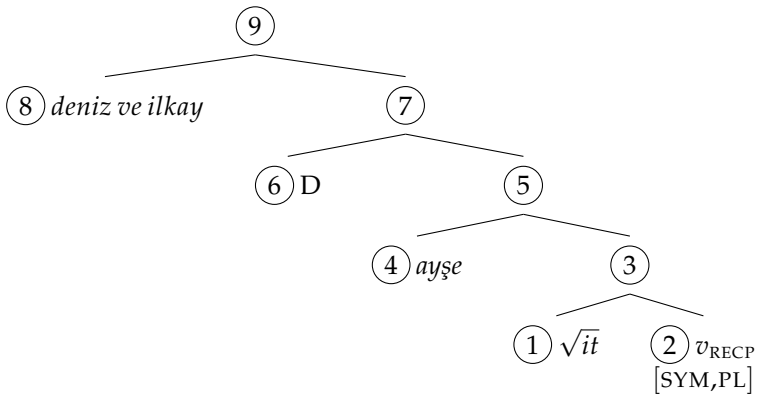
(4) $[\![ayşe]\!] = a$

(5) $[\![ayşe'yle\ itişti]\!] = \lambda x \lambda e [\exists\, e', e'' < e \wedge \text{PUSH}(x, a, e') \wedge \text{PUSH}(a, x, e'')]$

(6) $[\![deniz\ ve\ ilkay]\!] = d \oplus i$

(7) $[\![deniz\ ve\ ilkay\ ayşe'yle\ itişti]\!] =$
$\lambda e\, [\exists\, e', e'' < e \wedge \text{PUSH}(d \oplus i, a, e') \wedge \text{PUSH}(a, d \oplus i, e'')]$

(126) *Distributive reading of (120)*




(1) $[\![\sqrt{it}]\!] = \lambda y \lambda x \lambda e\, [\text{PUSH}(x, y, e)]$

(2) $[\![v_{\text{RECP}}]\!] = \lambda R_{\langle e,e,v,t\rangle} \lambda y \lambda x \lambda e [\exists e', e'' < e \ \wedge R(y)(x)(e') \wedge R(x)(y)(e'')]$

(3) $[\![itiş]\!] = \lambda z \lambda x \lambda e_5 \exists e_3, e_4 [e_3, e_4 < e_5 \ \wedge \ \text{PUSH}(x, z, e_3) \ \wedge \ \text{PUSH}(z, x, e_4)]$

(4) $[\![ayşe]\!] = a$

(5) $[\![ayşe'yle\ itişti]\!] = \lambda x \lambda e_5 \exists e_3, e_4 [e_3, e_4 < e_5 \ \wedge \ \text{PUSH}(x, a, e_3) \ \wedge \ \text{PUSH}(a, x, e_4)]$

(6) $[\![\text{D}]\!] = \lambda P_{\langle e,vt\rangle} \lambda X \lambda e_1 \forall y [y \leq_{atom} X \rightarrow \exists e_2 [e_2 \leq e_1 \wedge P(y)(e_2)]]]$

(7) $[\![\text{D}\ ayşe'yle\ itişti]\!] = \lambda X \lambda e_1 \forall y [y \leq_{atom} X \rightarrow \exists e_2 [e_2 \leq e_1 \wedge \exists e_3, e_4 [e_3, e_4 < e_2 \wedge \text{PUSH}(y, a, e_3) \wedge \text{PUSH}(a, y, e_4)]]]$

(8) $[\![deniz\ ve\ ilkay]\!] = d \oplus i$

(9) $[\![deniz\ ve\ ilkay\ \text{D}\ \ ayşe'yle\ itişti\ ]\!] = \lambda e_1 \forall y [y \leq_{atom} d \oplus i \rightarrow \exists e_2 [e_2 \leq e_1 \wedge \exists e_3, e_4 [e_3, e_4 < e_2 \wedge \text{PUSH}(y, a, e_3) \wedge \text{PUSH}(a, y, e_4)]]]$

So far, we have provided an account of verbal reciprocals with discontinuous phrases. We have argued that the contribution of the verbal reciprocal morpheme is symmetry, which we analyzed as two distinct atomic events that form a single plural event with arguments permuted. We then showed how this analysis derives the meanings for verbal reciprocal constructions with singular and plural arguments. We have shown that the collective versus distributive readings of clauses with plural subjects is independent of symmetric reciprocity introduced by the verbal reciprocal and adopted the view that plurality makes available a covert distributivity operator. Then, we provided a compositional analysis of the ambiguous sentences with plural subjects. In the following, we provide an account of pronominal reciprocals, which we combine with our verbal reciprocal analysis. Finally, we argue that collective constructions with verbal reciprocals are exactly this combination plus an unpronounced reciprocal pronoun.

Heim et al. (1991) analyze pronominal reciprocals in English and argue that expressions such as *each other* are complex, consisting of a distributor and a reciprocator, and that the semantics of a reciprocal expression consist of four components given in (127).

(127) *Components of reciprocals* (Heim et al. 1991, p. 66)
group-denoting antecedent — distributor — reciprocator — predicate

In their analysis, Heim et al. (1991) treat *each* as a distributor over the plural subject and *other* as an anaphoric reciprocator that is bound by the plural subject. The distributor universally quantifies over the plural subject and matches each (atomic) part of the subject with each member of the plural object (anaphoric to the subject). This creates strong reciprocity, as schematized in (128).

(128) John and Mary saw each other.
*saw* = $\{\langle jm\rangle, \langle mj\rangle, \langle jj\rangle, \langle mm\rangle\}$

This is not welcomed, as it also creates reflexive relations. To overly simplify the situation, the reciprocator *other* adds a distinctness requirement between the two members of a plural expression to avoid this problem, resulting in the schematic representation shown in (129).[34]

(129) John and Mary saw each other.
*saw* = $\{\langle jm\rangle, \langle mj\rangle\}$

One of the main goals of Heim et al.'s (1991) analysis is to provide a fully compositional account of reciprocals in English by deriving them as a combination of the meaning of *each* and the meaning of *other*. They argue that the anaphoric pronoun *each other* is merged in the object position but that the quantifier piece *each* covertly raises above the VP to establish a distributive predicate, whereas *other* remains in the object position and receives its value, as it is bound by the subject.

LaTerza (2014) provides a similar account of the English reciprocal pronoun *each other* within the event semantics framework. LaTerza's (2014) main goal is to account for the floating nature of *each* as a single distributivity operator, as in (130).

(130) a. Each of the children will sing two songs.
b. The children will each sing two songs. *floating each*
c. The children will sing two songs each. *binomial each*

While the technical details of the two accounts differ, they share a common core: (1) reciprocal expressions consist of distributivity and reciprocity (i.e., distinctness), and (2) English reciprocal pronoun *each other* can be analyzed completely compositionally (i.e., one meaning for *each* and one meaning for *other*).

The reciprocal pronoun in Turkish is similar to the English reciprocal pronoun *each other* in that it contains a distributor and a reciprocator. However, a completely compositional analysis seems more difficult. Morphologically, the reciprocal pronoun *birbiri* can be analyzed as in (131).

(131) bir-bir-i
one-one-POSS
'each other'

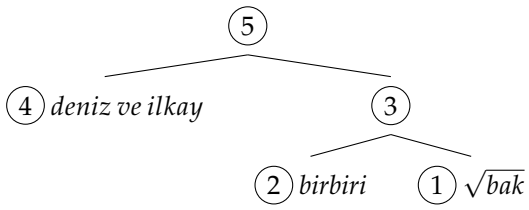
The reciprocal pronoun *birbiri* contains two instances of *bir* 'one/a', which can be interpreted as the existential quantifier, and a possessive morpheme. Unlike in English, it is not very clear which one of the components brings in the distributor and which one brings in the reciprocator. For this reason, we do not attempt to provide a compositional morphological account of *birbiri*. Instead, we treat it as an atomic lexical item with the denotation in (132).[35]

(132) $[\![birbiri]\!] = \lambda P_{\langle e,e,v,t\rangle}\lambda X\lambda e\forall x[x \leq_{atom} X[\exists y \leq_{atom} X \wedge x \neq y] \wedge \exists e' \leq e \wedge P(x,y,e')]$

Given the denotation of *birbiri* as in (132), the compositional derivation of the clause in (133) is given in (134).

(133) Deniz ve İlkay birbiri-ler-in-e bak-tı-lar.
Deniz and İlkay each.other-PL-POSS-DAT look-PAST-PL
'Deniz and İlkay looked at each other.'

(134) *Pronominal reciprocal*




(1) $[\![\sqrt{bak}]\!] = \lambda y \lambda x \lambda e\, [\text{LOOK-AT}(x, y, e)]$

(2) $[\![birbiri]\!] = \lambda P_{\langle e,e,v,t\rangle} \lambda X \lambda e \forall x [x \leq_{atom} X[\exists y \leq_{atom} X \wedge x \neq y] \wedge \exists e' \leq e \wedge P(x, y, e')]$

(3) $[\![birbirilerine\ baktılar]\!] =$
$\lambda X \lambda e \forall x \leq_{atom} X[\exists y \leq_{atom} X \wedge x \neq y \wedge \exists e' \leq e \wedge \text{LOOK-AT}(x, y, e')]$

(4) $[\![deniz\ ve\ ilkay]\!] = d \oplus i$

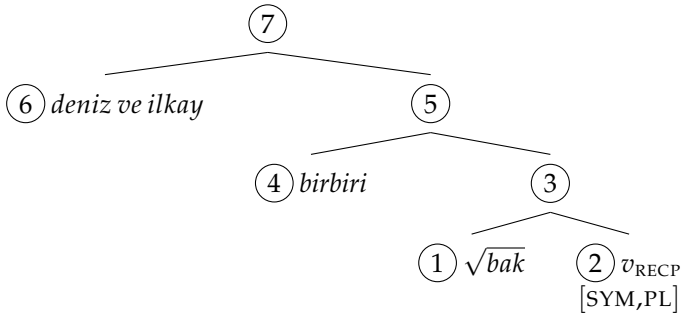
(5) $[\![deniz\ ve\ ilkay\ birbirilerine\ baktılar]\!] =$
$\lambda e \forall x \leq_{atom} d \oplus i[\exists y \leq_{atom} d \oplus i \wedge x \neq y \wedge \exists e' \leq e \wedge \text{LOOK-AT}(x, y, e')]$

The denotation in (134) captures all the facts we have discussed regarding the pronominal reciprocals in Turkish. It represents weak reciprocity and avoids a reflexive reading. It also accounts for the plurality requirement on the antecedent of the reciprocal pronoun. This follows from the fact that there must be at least two individuals to satisfy the distinctness requirement of the two individuals ($x \neq y$). Next, we turn to the combination of a pronominal reciprocal with the verbal reciprocal as in (135).

(135) Deniz ve İlkay birbiri-yle bak-ış-tı.
Deniz and İlkay each.other-WITH look-RECP-PAST
'Deniz and İlkay looked at each other.'

The main intuition is that the reciprocity introduced by the reciprocal pronoun *birbiri* is distinct from and independent of the symmetry encoded by the verbal reciprocal suffix *-Iş*. While the main components of pronominal reciprocals are plurality, distributivity, and distinctness, verbal reciprocals are created by virtue of turning an asymmetric predicate into a symmetric predicate. Combining the two results in a meaning according to which the members of the subject and the object (reciprocal pronoun) are in a weak reciprocal relation and the relation is necessarily symmetric. (135) is an illustration of such a combination, and (136) provides its compositional derivation.

(136) *Symmetric pronominal reciprocal (-Iş + birbiri)*




(1) $[\![\sqrt{bak}]\!] = \lambda y \lambda x \lambda e\, [\text{LOOK-AT}(x, y, e)]$

(2) $[\![v_{\text{RECP}}]\!] = \lambda R_{\langle e,e,v,t\rangle} \lambda y \lambda x \lambda e[\exists e', e'' < e\ \wedge R(y)(x)(e') \wedge R(x)(y)(e'')]$

(3) $[\![bakış]\!] = \lambda y \lambda x \lambda e_5\, [\exists\, e_3, e_4 \leq e_5 \wedge \text{LA}(x, y, e_3) \wedge \text{LOOK-AT}(y, x, e_4)]$

④ $[\![birbiri]\!] = \lambda P_{\langle e,e,v,t\rangle}\lambda X\lambda e_1\forall x \leq_{atom} X[\exists y \leq_{atom} X \wedge x \neq y \wedge \exists e_2 \leq e_1 \wedge P(x,y,e_2)]$

⑤ $[\![birbiriyle\ bakıştılar\ ]\!] = \lambda X\lambda e_1\forall x \leq_{atom} X[\exists y \leq_{atom} X \wedge x \neq y \wedge \exists e_2 \leq e_1 \wedge \exists\, e_3, e_4 \leq e_2 \wedge \text{LA}(x,y,e_3) \wedge \text{LA}(y,x,e_4)]$

⑥ $[\![deniz\ ve\ ilkay]\!] = d \oplus i$

⑦ $[\![deniz\ ve\ ilkay\ birbiriyle\ bakıştı]\!] = \lambda e_1\forall x \leq_{atom} d \oplus i[\exists y \leq_{atom} d \oplus i \wedge x \neq y \wedge \exists e_2 \leq e_1 \wedge \exists\, e_3, e_4 \leq e_2 \wedge \text{LA}(x,y,e_3) \wedge \text{LA}(y,x,e_4)]$

The contributions of the pronominal and verbal reciprocal are independent. The verbal reciprocal creates a symmetric predicate, whereas a pronominal reciprocal creates a distributed reciprocation reading. The combination of the two leads to a symmetric reciprocal, which is exactly the denotation of collective constructions with verbal reciprocals as in (137). We do not observe any difference between the meaning of the collective construction in (137) and the verbal and pronominal constructions in (135).[36] We simply argue that these collective constructions have an unpronounced reciprocal pronoun, the silence of which is licensed by the symmetric predicate.

(137) Deniz ve İlkay bak-ış-tı-lar.
Deniz and İlkay look-RECP-PAST-PL
'Deniz and İlkay looked at each other.'

## 5. Accounting for Reciprocal–Pluractional Syncretism

Plural–reciprocal syncretism is common (Gluckman 2019). We previously mentioned that the *-(I)ş* suffix has a pluractional reading, which is very clear when it combines with an unergative or an unaccusative. While we do not go into all the details of the pluractionality of the *-(I)ş* suffix, we briefly discuss a couple core cases to establish the pluractionality of the *-(I)ş* suffix. For a more detailed account of pluractionality associated with *-(I)ş*, see Key and Ótott Kovács (2022).

The term pluractional was coined by Newman (1990) to describe verbs that denote a plurality or multiplicity of the verb's action. Lasersohn (1995) defined pluractional markers as indicators of "multiplicity of actions, whether involving multiple participants, times, or locations". Mattiola (2019) defines pluractionality as "plurality of situations involving a repetition in time, space, and/or participants". The pluractional morpheme $v_{\text{PL}}$ in Turkish (glossed as VPL in the examples below) has all the properties described by Lasersohn (1995) and Mattiola (2019). When the subject is plural, pluractionality denotes a multiplicity of actions, each of which is carried out by a distinct member of the set denoted by the plural subject. This is illustrated in (138).

(138) Kuş-lar uç-uş-tu.
bird-PL fly-VPL-PAST
'The birds flew about (in a disorganized manner).'

The pluractional verb *uçuş* requires another plurality in the clause over which the actions can be distributed. In (138), the plural subject provides this. When the subject is singular, pluractionality leads to unacceptability, as in (139). However, (139) improves significantly when some temporal or spatial modifier introducing a plurality of times or places is introduced, as in (140).

(139) *Kuş uç-uş-tu.
bird fly-VPL-PAST
'The flew about (in a disorganized manner).'

(140) Kuş (sabahtan beri ora-dan ora-ya) uç-uş-tu.
Bird morning since there-ABL there-DAT fly-VPL-PAST
'The bird flew all around since morning.'[37]

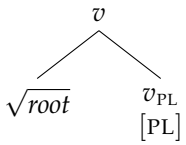
The pluractional morpheme also appears with derived accomplishment verbs, where the verb root is a change-of-state predicate and the pluractional morpheme introduces an additional process reading, resulting in an accomplishment. Consider the unaccusative change-of-state verb *ol* 'become'. In this case, the pluractional suffix adds a process reading involving a process of growing/developing/coming into existence over time, and the event is homogeneous, as in (141-b). Notice that the subject is singular and the plurality of the action is distributed over some period of time in (141-b), yielding a process reading.

(141) a. Top elma ol-du.
ball apple become-PAST
'The ball turned into an apple.'

b. (Ağaç-ta) elma ol-uş-tu.
tree-LOC apple be-VPL-PAST
'An apple grew on the tree.'

The contribution of the pluractional morpheme in (138) and (141-b) shows some variation. In (138), it creates a plurality of actions distributed over a set of individuals introduced by the subject, thus requiring the subject to be plural. In (141-b), it creates an event-internal plurality of actions, leading to an accomplishment (process + change of state) derived from an achievement (change of state) and thus not requiring a plural subject. The common contribution of *-Iş* in these examples is plurality.[38] Hence, we argue that the pluractional constructions in Turkish are created in the syntax by combining the verbal root with the pluractional head $v_{\text{PL}}$. The pluractional head carries the feature [PL]. Semantically, the pluractional head creates a plurality of events, which can be distributed over individuals, times, or places. The syntactic structure resembles that presented in (142).

(142) *Pluractional verb*




Semantically, the pluractional head takes a predicate with an event argument and returns a predicate with a plurality of events. We believe that the various readings of pluractionality associated with *-(I)ş*, such as the disorganized manner in unergative activities with plural subjects (138), distribution over time or locations with activity predicates with singular subjects (139), and the added process reading with unaccusative achievement predicates (141-b), arise as a result of event plurality interacting with other pluralities, such as individuals, time, locations, or the lexical aspect. However, we do not pursue it here. See Key and Ótott Kovács (2022) for a detailed analysis. Since we do not have a complete analysis of the truth conditions of pluractionality in Turkish, we abstain from providing a formal definition.

Now that we have identified the syntactic and semantic contribution of the verbal reciprocal head $v_{\text{RECP}}$ and the pluractional head $v_{\text{PL}}$, we are in a position to argue that *-(I)ş* realizes the PL feature on the verb, and the fact that both heads expone the same suffix simply follows from the main tenets of the underspecification and the subset principle (Halle 1997). So far, we have distinguished between two syntactic heads—$v_{\text{RECP}}$ and $v_{\text{PL}}$—with the properties described in Table 2.

**Table 2.** $v$ Heads.

| Syntactic Head | Features | Description |
|---|---|---|
| $v_{\text{RECP}}$ | [SYM, PL] | Semantically encoding symmetry. Symmetric events are necessarily plural. |
| $v_{\text{PL}}$ | [PL] | Semantically encoding plurality. |

The two heads $v_{\text{RECP}}$ and $v_{\text{PL}}$ share the feature [PL]. Our main proposal is that the *-(I)ş* suffix realizes the [PL] feature and is subject to the following vocabulary insertion rule.

(143) Vocabulary insertion rule for *-(I)ş*

PL $\longleftrightarrow$ *(I)ş* / $v$___

The reciprocal–pluractional syncretism in Turkish is due to the underspecification of the *-(I)ş* suffix. The subset principle (Halle 1997) allows an underspecified vocabulary item to realize a head with features that constitute a superset of the vocabulary item but not vice-versa. Since the features associated with *-(I)ş* are a subset of the features encoded by $v_{\text{RECP}}$, *-(I)ş* can realize it, resulting in a syncretism between the symmetric reciprocal morpheme and the pluractional morpheme. In other words, *-(I)ş* is a plural marker, and Turkish does not have a dedicated vocabulary item for the reciprocal head $v_{\text{RECP}}$.

## 6. Conclusions

In this paper, we analyzed lexical, pronominal, and verbal reciprocal constructions in Turkish, including the discontinuous and collective constructions appearing in lexical and symmetric verbal reciprocals. We argued that verbal reciprocals are constructed in the syntax with a $v_{\text{RECP}}$ head that carries the features [SYM, PL]. $v_{\text{RECP}}$ combines with a transitive predicate and creates an event plurality wherein two subevents are formed under a single event and the thematic roles of the transitive predicate are permuted across the arguments. We analyzed pronominal reciprocals in the spirit of Heim et al. (1991) and LaTerza (2014) as instances of distributivity–reciprocity over plural arguments. We further argued that all the reciprocal constructions in Turkish are transitive, including collective constructions, which we analyzed as a combination of pronominal reciprocals with a symmetric predicate (lexical or syntactically built), where the reciprocal pronoun remains unpronounced. We further argued that Turkish also has a pluractional $v_{\text{PL}}$ head that carries the feature [PL]. reciprocal–pluractional syncretism follows from the underspecified nature of the morpheme *-(I)ş*, which realizes the [PL] feature on the verb.

While we provide an account of various sources of reciprocity in Turkish, we leave open some questions for future research. In particular, our analysis of pronominal reciprocals does not extend to clauses with ditransitive verbs straightforwardly, which we leave for future work. However, we believe that our analysis of verbal reciprocals and its relationship with pronominal reciprocals is not impacted by this, as long as pronominal reciprocals are compatible with symmetric predicates.

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**Conflicts of Interest:** The authors declare no conflict of interest.

## Abbreviations

The following abbreviations are used in this manuscript:

| | |
|---|---|
| ABL | Ablative |
| ACC | Accusative |
| DAT | Dative |
| DM | Distributed morphology |
| GEN | Genitive |
| IMPF | Imperfective |
| LOC | Locative |
| NEG | Negation |
| PAST | Past |
| PL | Plural |
| POSS | Possessive |
| RECP | Reciprocal |
| SG | Singular |
| SYM | Symmetric |
| VPL | Pluractional |

## Appendix A. Transitive Verbs

The list below contains about 100 verbs that describe predicates representing various lexical aspects. Our categorization follows Smith (1997) and its implementations in Turkish by Erguvanlı-Taylan (1996) based on durativity, telicity, and stativity. For telicity, we used the *in x time* test (e.g., *iki saatte* 'in two hours'. For durativity, we used the *for x time* test (e.g., *iki saat* '(for) two hours', *iki gün boyunca* 'for two days', etc.). Our categorization is rough because some of the verbs have multiple senses associated with them and are therefore associated with more than one lexical aspect. We indicated such cases explicitly, but we might have missed some possible interpretations. Our main goal is to show that there is some interaction between lexical aspect and $v_{\text{RECP}}$, yet the correlation is not clear-cut and requires further investigation.

The asterisks (*) in some rows in the Drift column indicate that these verbs are ambiguous between a drifted meaning and a fully compositional meaning. For example, the verb *öp-üş* 'kiss-RECP' can be interpreted completely compositionally as 'a kissed b and b kissed a.' or it can be interpreted as 'a and b kissed (i.e., on the lips)'. Similarly, the verb *sev-iş* 'love-RECP' can be interpreted as 'a loves b and b loves a.' or it can be interpreted as 'a and b made love.'[39]

**Table A1.** Reciprocals and Lexical Aspect.

| Gloss | Turkish | Lexical Aspect | Pron. | Iş | Drift | Drifted Meaning |
|---|---|---|---|---|---|---|
| clean | temizle | accomplishment | YES | NO | | |
| correct | düzelt | accomplishment | YES | NO | | |
| dress | giydir | accomplishment | YES | NO | | |
| encourage | cesaretlendir | accomplishment | YES | NO | | |
| excite | heyecanlandır | accomplishment | YES | NO | | |
| inform | bilgilendir | accomplishment | YES | NO | | |
| make X | X yap | accomplishment | YES | NO | | |
| wash | yıka | accomplishment | YES | NO | | |
| add | ekle | achievement | YES | YES | | |
| attach | tak | achievement | YES | YES | YES | fight/quarrel |
| break | kır | achievement | YES | YES | YES | share (pieces) |
| choke | boğ | achievement | YES | YES | YES | fight |
| cover | ört | achievement | YES | YES | YES | overlap |
| rattle | boz | achievement | YES | YES | YES | fall out with |
| divide | böl | achievement | YES | YES | YES | share |
| find | bul | achievement | YES | YES | YES | meet |
| get offended | küs | achievement | YES | YES | | |
| grab | kap | achievement | YES | YES | YES | fight/quarrel |
| impact | etkile | achievement | YES | YES | YES | interact |
| mark | işaretle | achievement | YES | YES | | |
| message | mesajla | achievement | YES | YES | | |
| pay | öde | achievement | YES | YES | YES | break even |
| separate | ayır | achievement | YES | YES | | |
| tie | bağla | achievement | YES | YES | | |
| understand | anla | achievement | YES | YES | YES | agree |
| win | yen | achievement | YES | YES | | |
| pass | geç | achievement | YES | YES | | |
| accept | kabul et | achievement | YES | NO | | |
| arrest | tutukla | achievement | YES | NO | | |
| ask | sor | achievement | YES | NO | | |
| bend | eğ | achievement | YES | NO | | |
| capture | yakala | achievement | YES | NO | | |
| catch | yakala | achievement | YES | NO | | |
| define | tanımla | achievement | YES | NO | | |
| discover | keşfet | achievement | YES | NO | | |
| enlighten | aydınlat | achievement | YES | NO | | |
| forget | unut | achievement | YES | NO | | |
| forgive | affet | achievement | YES | NO | | |
| frighten | korkut | achievement | YES | NO | | |
| hide | sakla | achievement | YES | NO | | |
| leave | terk et | achievement | YES | NO | | |
| marry | evlen | achievement | YES | NO | | |
| select | seç | achievement | YES | NO | | |
| deceive | aldat | achievement | YES | NO | | |
| deny | yalanla | achievement | YES | NO | | |
| fascinate | büyüle | achievement | YES | NO | | |
| say | söyle | achvmt/act | YES | YES | YES | interview |
| cut | kes | achvmt/act | YES | YES | YES | intersect |
| answer | cevapla | achvmt/act | YES | NO | | |
| carry | taşı | achvmt/act | YES | NO | | |
| draw | çiz | achvmt/act | YES | NO | | |
| embrace | sarıl | achvmt/act | YES | NO | | |
| dry | kurula | achvmt/act | YES | NO | | |
| beat | döv | activity | YES | YES | YES * | fight |
| call | ara | activity | YES | YES | | |
| kiss | öp | activity | YES | YES | YES * | |

| Gloss | Turkish | Lexical Aspect | Pron. | Iş | Drift | Drifted Meaning |
|---|---|---|---|---|---|---|
| lick | yala | activity | YES | YES | | |
| look | bak | activity | YES | YES | | |
| mix | kar | activity | YES | YES | YES | get mixed |
| play | oyna | activity | YES | YES | YES | have it off |
| pull | çek | activity | YES | YES | YES | compete |
| push | it | activity | YES | YES | | |
| rub | sürt | activity | YES | YES | YES | disagree |
| see | gör | activity | YES | YES | YES | meet |
| smell | kokla | activity | YES | YES | | |
| wait | bekle | activity | YES | YES | | |
| check | kontrol et | activity | YES | NO | | |
| describe | tarif et | activity | YES | NO | | |
| chase | kovala | activity | YES | NO | | |
| disturb | rahatsız et | activity | YES | NO | | |
| drag | sürükle | activity | YES | NO | | |
| entertain | eğlendir | activity | YES | NO | | |
| escort | eşlik et | activity | YES | NO | | |
| examine | muayene et | activity | YES | NO | | |
| feed | besle | activity | YES | NO | | |
| fight | kavga et | activity | YES | NO | | |
| fire | ateş et | activity | YES | NO | | |
| follow | takip et | activity | YES | NO | | |
| help | yardım et | activity | YES | NO | | |
| hug | sarıl | activity | YES | NO | | |
| inspect | incele | activity | YES | NO | | |
| tickle | gıdıkla | activity | YES | NO | | |
| watch | izle | activity | YES | NO | | |
| bump | çarp | semelfactive | YES | YES | | |
| hit/slap | çak | semelfactive | YES | YES | YES * | intersect |
| kick | tekmele | semelfactive | YES | YES | | |
| kick | tep | semelfactive | YES | YES | | |
| throw | at | semelfactive | YES | YES | YES | quarrel |
| touch/grope | elle | semelfactive | YES | YES | | |
| bite | ısır | semelfactive | YES | NO | | |
| hit | vur | semelfactive | YES | NO | YES | |
| be similar to | benze | state | YES | YES | | |
| fit | uy | state | YES | YES | | |
| lean on | dayan | state | YES | YES | | |
| love | sev | state | YES | YES | YES * | make love |
| want | iste | state | YES | YES | | |
| embarrass | utandır | state | YES | NO | | |
| feel | hisset | state | YES | NO | | |
| hold | tut | state | YES | NO | YES | |
| miss yearn | özle | state | YES | | | |

## Notes

1 See also Ótott Kovács (2022) for a similar view on the discontinuous phrase in Kyrgyz and Kazakh.

2 See also Ótott Kovács (2022) for a cognate and and its pluractional use in Kyrgyz.

3 We prefer not to use PL, as we intend to use it for the plural morphology associated with the number ($\varphi$) feature.

4 We assume that the symmetric reciprocal head $v_{\text{RECP}}$ cannot combine with intransitives, as it necessarily requires two arguments. Multiple individuals in a plural argument are not enough, as we argue that reciprocal relations in Turkish are never established within members a single argument.

5 There are various forms of reciprocal pronouns with slightly different distributions, one of which is *bir diğer-i* 'one other-POSS', which is more similar to English *one another*; *birbiri* is the more common one. We do not analyze the distribution of different forms of the reciprocal pronoun.

6 Pronominal reciprocalization is only limited by thematic constraints. Any predicate whose thematic roles are compatible with reciprocation can be used with the pronominal strategy.

[7] We suspect that this might be because most of the accomplishments in Turkish are light verb constructions and derived causatives (e.g., *eğit* 'educate', *büyüt* 'raise/help grow'), and verbal reciprocals do not combine with derived causatives, as discussed in the next section.

[8] An anonymous reviewer asks our criteria for classifying the predicates in terms of their lexical aspect. They also ask if the few examples we provide in Table 1 are sufficient to make generalizations. We use the categorization defined by Smith (1997) and its implementations in Turkish by Erguvanlı-Taylan (1996) based on durativity, telicity, and stativity. Our generalizations do not depend on the few examples listed in Table 1 but on about 100 verbs that we provide in Appendix A.

[9] It should be noted that *-lA* constructions are totally acceptable when the manner of the correspondence is verbalized as below.

(i) Deniz belge-yi İlkay-a mesaj/faks/DM-le-di.
Deniz Deniz-ACC İlkay-Deniz-DAT message/fax/DM-LA-PAST
'Deniz texted/faxed/DMed the document to İlkay.'

[10] Some speakers seem to tolerate such instances more than the others.

[11] Two other noteworthy reciprocal situations described by Langendoen (1978) are intermediate reciprocity and symmetric reciprocity.

(i) Symmetric Reciprocity Langendoen (1978, p. 179)
$(\forall x \in A)(\exists y \in A)(x \neq y \wedge xRy \wedge yRx)$

(ii) Intermediate Reciprocity Langendoen (1978, p. 179)
$(\forall x, y \in A)\{x \neq y \rightarrow [xRy \vee (\exists n > 0)(\exists z_1, ..., z_n \in A)(xRz_1 \wedge ... \wedge z_nRy)]\}$

Dalrymple et al. (1998, p. 169) illustrate intermediate reciprocity with the expression in (iii), which is schematized as in (iv).

(iii) ... five Boston pitchers sat alongside each other ...

(iv) (a) $\longleftrightarrow$ (b) $\longleftrightarrow$ (c) $\longleftrightarrow$ (d) $\longleftrightarrow$ (e)

Langendoen (1978) and Dalrymple et al. (1998) discuss various types of reciprocal situations and whether some of them situations can be subsumed by one or a few reciprocal meanings. They both conclude that a proper subset of meanings can subsume all the other reciprocal meanings. For the sake of simplicity, we follow Langendoen (1978) in assuming that weak reciprocity can describe most of the reciprocal situations. Investigating the types of reciprocal situations and the relationships between them goes beyond the scope of this paper.

[12] This is relevant when we discuss the counting-of-events test by Siloni (2012) in the next section.

[13] In Section 4, we argue that pluractional transitives such as *itiş* 'randomly push one another' have this meaning.

[14] It should be noted that we use the term 'collective construction' only descriptively. These are constructions where the subject contains two or more individuals (a plurality) and a predicate but no overt internal argument. We do not claim that these clauses have a collective interpretation.

[15] Another verb that has a similar meaning and similar properties is *dolan* 'tangle'.

[16] We simply assume that predicates such as *sarıl* 'hug' are syncretic, and they are listed as two distinct verbs in the lexicon. Nothing hinges on this assumption.

[17] A possibly trivially obvious but important point is that what is counted is the time variables but not events.

[18] An anonymous reviewer points out that the tests we apply below might support semantic argumenthood but not syntactic argumenthood. We concede that the tests we apply below do not ensure syntactic argumenthood. This does not pose a threat to our account, as long as the external and internal arguments are distinguished by the semantic representation. However, for the sake of simplicity, we assume that the comitative phrase is a syntactic argument as well. The main motivation behind this is examples such as (100-a), where the symmetric relations cannot be established among the members of a single argument (e.g., the subject) but they have to be established between the members of the subject and the members of the object.

[19] It should be noted that this was not Siloni's main concern, and a thorough analysis was not provided.

[20] As an anonymous reviewer notices, the singular subject variant marked unacceptable in (95) *çocuk bakıştı* is acceptable with a dropped comitative phrase, e.g., *çocuk (Ali'yle) bakıştı.* Our generalization captures this possibility, as the acceptable expression is no longer a collective construction but a discontinuous construction.

[21] Slightly diverging from Heim et al. (1991), we argue that the plurality requirement is a corollary of the distinctness requirement encoded in the denotation of the reciprocator. See Section 4.

[22] We thank the anonymous reviewer who notices the qualification regarding the possibility of an overt existentially quantified comitative phrase. This does not invalidate our generalization.

[23] We remain agnostic as to whether unpronounced arguments are examples of argument drop or verb-stranding VP ellipsis.

[24] We slightly diverge from Heim et al. (1991) in that we use an existential quantifier over the object to achieve weak reciprocity rather than strong reciprocity.

[25] Examples such as (76) do not constitute an exception, as we analyze them as pluractional events rather than symmetric reciprocals. Pluractionality combined with a plural subject and distributivity suffices to create weak reciprocal readings.

[26] This does not mean that verbal reciprocals in Turkish do not allow collective readings. In fact, they do in scenarios in which two groups are in a reciprocal relation. We come back to this below.

[27] An anonymous reviewer asks whether the plural agreement morpheme *-lar* in the following examples has any effect on reciprocity. The plural agreement morpheme is largely optional and does not have any visible effect on reciprocity.

[28] We do not provide an analysis here, but it is relatively straightforward to derive the causative and impersonal passives of symmetric verbal reciprocals with the syntactic and semantic structure we propose.

[29] As an aside, Turkish verbal reciprocals seem to differ from English symmetric predicates with discontinuous phrases. One such example in English discussed by Dong (1971) is *collide*.

(i) a. The drunkard collided with the lamppost.
b. #The lamppost collided with the drunkard.
c. #The drunkard and the lamppost collided.

We propose that English symmetric predicates such as *collide, hug, etc.* and Turkish lexically symmetric predicates such as *sarıl* 'hug' are simply ambiguous between an asymmetric event and a symmetric event. This is very clear in Turkish for predicates such as *çarp* 'collide into / hit', as their symmetric versions are derived with *-(I)ş*. The verbal reciprocal cannot take an inanimate object, whereas an animate object is acceptable, indicating that the relation between the subject and the object cannot be symmetric when one of the arguments cannot take a particular thematic role. In the light of these facts, we argue that English verbs such as *collide* are ambiguous between a symmetric and asymmetric predicate.

(ii) a. Deniz ağac-a çarp-tı.
Deniz tree-DAT hit-PAST
'Deniz collided into the tree.'
b. #Deniz ağaç-la çarp-ış-tı.
Deniz tree-WITH hit-RECP-PAST
'Deniz collided with the tree.'
c. Deniz İlkay-la çarp-ış-tı.
Deniz İlkay-WITH hit-RECP-PAST
'Deniz collided with İlkay.'

[30] We disregard the pluractional reading we discussed earlier in Section 3.2.2. It seems that this sentence does not have a readily accessible pluractional reading, as it only involves two atomic individuals as the subject and a single individual as the object. It does not lend itself to a context in which many people are randomly pushing some other person. We believe that the lack of pluractional reading in this case is a pragmatic effect. We can obtain the pluractional reading once we introduce many people in both the subject and the object.

[31] Part–whole relations can be defined in various ways, including by the part-of relation ($\leq$), the proper part-of relation ($<_{prop}$), or the atomic part-of relation ($\leq_{atom}$), to name a few. The distributivity operator we adopt below uses the atomic part-of relation, which allows the predicate to be distributed over the atomic individual parts of the plural subject. A fair question would be whether it is possible to distribute over non-atomic parts of a plural (especially in scenarios with more than two individuals). While we believe the question is worthwhile, we do not pursue it here, as we consider it to be beyond the scope of this paper.

[32] Notice that Lasersohn's (1998) distributivity operator uses the *part-of* relation (but not the *atomic* or *proper part-of* relation) to order the event variables. This works well with our account, as each of the events distributed over atomic individuals must have further atomic (sub)events introduced by the verbal reciprocal morpheme. Our account works as long as the distributivity operator does not resort to an *atomic part-of* relation between the two event variables introduced by the operator.

[33] An alternative account would be following Landman (1989), who treats collective readings as due to groups that are taken to be plural individuals ($\uparrow d \oplus i$). We do not pursue it here.

[34] Heim et al. (1991) posit a more complex set of relations, including the raising of *each* and leaving behind a trace, which creates a syntactic object [e other] with its own semantics. We gloss over these details here.

[35] We believe that a fully compositional analysis of the reciprocal pronoun *birbiri* is possible, but we leave it for future research.

[36] Excluding the existentially bound reading available in collective constructions, which we discussed earlier.

[37] Some people find this example better than (138) but still not very good. We do not know the reason behind this.

[38] A complete analysis of the pluractionals in Turkish is beyond the scope of this paper. We refer the reader to Key and Ótott Kovács (2022), who provide a detailed analysis.

[39] We thank the anonymous reviewer who pointed this out.

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