

**Case study: Slovenian dual**  
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Slovenian is one of only three contemporary Slavic languages that productively uses the dual. The other two are Upper and Lower Sorbian. It seems that in most relevant respects the dual in Proto-Slavic was similar to the present day Slovenian (or Sorbian) dual, but there are some instances in which the two differ, e.g. the pronominal paradigm, use of dual with pair nouns, etc. In this chapter, we will concentrate on the present day use of the dual in Slovenian, generally ignoring historical aspects, for which see Belić (1934), Olander (2015), etc.

## 1. Dual morphology

Slovenian exhibits special dual morphology on nouns, adjectives, verbs, and pronominals (including various demonstrative, qualitative, quantitative, possessive and *wh*-pronouns). This means that essentially all inflected parts of speech which inflect for number also exhibit special forms for dual. We will go through them one by one and present the entire dual paradigm (additional tables and forms can be found in Toporišič 2000, Herrity 2016, Greenberg 2008, Derganc 2003, 2006, among others). Before presenting the dual paradigm, however, we wish to emphasize that there is great variation across different varieties of Slovenian in the actual forms of dual marking and in particular in the extent of the use of special dual forms (i.e. of forms that are distinct from the plural). Whereas some of the variation will be mentioned along the way and some in Section 3, at least part of the description in this chapter – such as the forms given in this section – will be based on standard Slovenian as described/prescribed in Toporišič *et al.* (2001), largely ignoring any variation.<sup>1</sup>

### 1.1 Nouns

Nouns are traditionally divided into three groups based on their gender and four declension classes (e.g. Toporišič 2000). *Table 1* below presents only what is traditionally called the 1<sup>st</sup> declension classes of masculine (inanimate) and neuter nouns and the 1<sup>st</sup> and 2<sup>nd</sup> declension classes of feminine nouns. (The 2<sup>nd</sup> masculine class is formally equivalent to the 1<sup>st</sup> feminine class, the 3<sup>rd</sup> masculine and neuter classes comprise non-declining/zero-affix nouns, and the 4<sup>th</sup> masculine, feminine and neuter classes are formally equivalent to adjectival declensions; for adjectival declension forms, see Section 1.2). Cases are listed in the order of Caha (2009).

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<sup>1</sup> In this chapter, we will not discuss the history of either the forms or the use of Slovenian dual. For some information on these aspects, see Jakop (2008).

	#	NOM	ACC	GEN	LOC	DAT	INSTR
Masc. <i>stol</i> "chair"	SG	<i>stol</i>	<i>stol</i>	<i>stola</i>	<i>pri stolu</i>	<i>stolu</i>	<i>s stolom</i>
	DU	<i>stola</i>	<i>stola</i>	<i>stolov</i>	<i>pri stolih</i>	<i>stoloma</i>	<i>s stoloma</i>
	PL	<i>stoli</i>	<i>stole</i>	<i>stolov</i>	<i>pri stolih</i>	<i>stolom</i>	<i>s stoli</i>
Fem. I <i>hiša</i> "house"	SG	<i>hiša</i>	<i>hišo</i>	<i>hiše</i>	<i>pri hiši</i>	<i>hiši</i>	<i>s hišo</i>
	DU	<i>hiši</i>	<i>hiši</i>	<i>hiš</i>	<i>pri hišah</i>	<i>hišama</i>	<i>s hišama</i>
	PL	<i>hiše</i>	<i>hiše</i>	<i>hiš</i>	<i>pri hišah</i>	<i>hišam</i>	<i>s hišami</i>
Fem. II <i>stvar</i> "thing"	SG	<i>stvar</i>	<i>stvar</i>	<i>stvarí</i>	<i>pri stvári</i>	<i>stvári</i>	<i>s stvarjo</i>
	DU	<i>stvarí</i>	<i>stvarí</i>	<i>stvarí</i>	<i>pri stvaréh</i>	<i>stvarema</i>	<i>s stvarema</i>
	PL	<i>stvarí</i>	<i>stvarí</i>	<i>stvarí</i>	<i>pri stvaréh</i>	<i>stvarem</i>	<i>s stvarmi</i>
Neut. <i>mesto</i> "town"	SG	<i>mesto</i>	<i>mesto</i>	<i>mesta</i>	<i>pri mestu</i>	<i>mestu</i>	<i>z mestom</i>
	DU	<i>mesti</i>	<i>mesti</i>	<i>mest</i>	<i>pri mestih</i>	<i>mestoma</i>	<i>z mestoma</i>
	PL	<i>mesta</i>	<i>mesta</i>	<i>mest</i>	<i>pri mestih</i>	<i>mestom</i>	<i>z mesti</i>

Table 1: Declension of masculine, neuter and feminine nouns

As can be seen from Table 1, there is a lot of syncretism in the nominal paradigm. Genitive and locative case are syncretic between dual and plural for all nouns. In the dual, syncretism is present also between cases: nominative and accusative dual forms and dative and instrumental dual forms are syncretic for all nouns. There is even more syncretism with feminine nouns of the 2<sup>nd</sup> declension (represented with the noun *stvar* "thing" in Table 1), where syncretism in genitive case spans across all three numbers.<sup>2</sup>

## 1.2 Adjectives

Adjectives agree with nouns they modify in gender, number, and case (there also exists a small number of borrowed uninflecting adjectives, such as *prima* 'great', *fejst* 'good', *kul* 'cool', *fensi* 'fancy'). Table 2 below presents the forms for the adjective 'big'. (Several types of pronouns, such as demonstratives, possessives, *wh*-pronouns, relative pronouns, etc., are all adjectival in nature and thus also decline as described in Table 2; see also section 1.3 below.)

	#	NOM	ACC	GEN	LOC	DAT	INSTR
Masc. <i>velik</i> "big"	SG	<i>velik</i>	<i>velik</i>	<i>velikega</i>	<i>pri velikem</i>	<i>velikemu</i>	<i>z velikim</i>
	DU	<i>velika</i>	<i>velika</i>	<i>velikih</i>	<i>pri velikih</i>	<i>velikima</i>	<i>z velikima</i>
	PL	<i>veliki</i>	<i>velike</i>	<i>velikih</i>	<i>pri velikih</i>	<i>velikim</i>	<i>z velikimi</i>
Fem. <i>velik</i> "big"	SG	<i>velika</i>	<i>veliko</i>	<i>velike</i>	<i>pri veliki</i>	<i>veliki</i>	<i>z veliko</i>
	DU	<i>veliki</i>	<i>veliki</i>	<i>velikih</i>	<i>pri velikih</i>	<i>velikima</i>	<i>z velikima</i>
	PL	<i>velike</i>	<i>velike</i>	<i>velikih</i>	<i>pri velikih</i>	<i>velikim</i>	<i>z velikimi</i>
Neut. <i>velik</i> "big"	SG	<i>veliko</i>	<i>veliko</i>	<i>velikega</i>	<i>pri velikem</i>	<i>velikemu</i>	<i>z velikim</i>
	DU	<i>veliki</i>	<i>veliki</i>	<i>velikih</i>	<i>pri velikih</i>	<i>velikima</i>	<i>z velikima</i>
	PL	<i>velika</i>	<i>velika</i>	<i>velikih</i>	<i>pri velikih</i>	<i>velikim</i>	<i>z velikimi</i>

Table 2: Declination of adjectives (shown with *velik* "big")

As can be seen from Table 2, the adjectival declination is characterized by substantial syncretism. Morphological gender distinction exists between the dual and plural only in nominative and accusative case, i.e., in the dual and the plural only nominative and

<sup>2</sup> With 2<sup>nd</sup> declension feminine nouns that do not exhibit variable stress placement, such as *priložnost* 'an opportunity', there is additional syncretism, with the locative and dative singular having the same form as genitive singular (and nominative, accusative and genitive dual and plural).

accusative case forms are different between the three genders. There is also syncretism leveling number distinction: dual and plural forms are syncretic in the genitive and locative. And there is syncretism leveling case distinction: nominative and accusative forms are syncretic in the dual and plural in all three genders, and in the singular in masculine and neuter (for masculine gender this holds for adjectives modifying inanimate singular nouns, whereas the accusative form of adjectives modifying animate singular nouns will be syncretic with the genitive form); genitive and locative forms are syncretic in the dual and plural in all three genders, and dative and instrumental are syncretic in the dual in all three genders.

### 1.3 Pronominals

With the exception of the reflexive, which does not distinguish number at all, all types of pronouns have dual forms. But given that only personal pronouns ('I', 'you', etc.) have forms distinct from the dual forms of adjectives described in 1.2 (demonstratives, possessives, *wh*-pronouns, relative pronouns, etc., are all adjectival in nature), we will only present the dual forms of personal pronouns here. Note that for some feature specifications, there are two forms, one of which is the strong form pronoun and the other the weak/clitic form (in *Table 3*, the former is listed first, the latter subsequently in parentheses).

	NOM	ACC	GEN	LOC	DAT	INSTR
SG 1 <sup>st</sup> 2 <sup>nd</sup> 3 <sup>rd</sup> m f n	<i>jaz</i> <i>ti</i> <i>on</i> <i>ona</i> <i>ono</i>	<i>mene (me)</i> <i>tebe (te)</i> <i>njega (ga)</i> <i>njo (jo)</i>	<i>mene (me)</i> <i>tebe (te)</i> <i>njega (ga)</i> <i>nje (je)</i>	<i>pri meni</i> <i>pri tebi</i> <i>pri njem</i> <sup>3</sup> <i>pri njej</i>	<i>meni (mi)</i> <i>tebi (ti)</i> <i>njemu (mu)</i> <i>njej (ji)</i>	<i>z mano</i> <sup>4</sup> <i>s tabo</i> <i>z njim</i> <i>z njo</i>
DU 1 <sup>st</sup> m f 2 <sup>nd</sup> m f 3 <sup>rd</sup> m f	<i>midva</i> <i>medve</i> <sup>5</sup> <i>vidva</i> <i>vedve</i> <i>onadva</i> <i>onedve</i>	<i>naju</i> <sup>6</sup>  <i>vaju</i>  <i>njiju (ju)</i>	<i>naju</i>  <i>vaju</i>  <i>njiju (ju)</i>	<i>pri naju</i> <sup>7</sup>  <i>pri vaju</i>  <i>pri njiju</i>	<i>nama</i>  <i>vama</i>  <i>njima (jima)</i>	<i>z nama</i>  <i>z vama</i>  <i>z njima</i>
PL 1 <sup>st</sup> m f 2 <sup>nd</sup> m f 3 <sup>rd</sup> m f	<i>mi</i> <i>me</i> <i>vi</i> <i>ve</i> <i>oni</i> <i>one</i>	<i>nas</i>  <i>vas</i>  <i>njih (jih)</i>	<i>nas</i>  <i>vas</i>  <i>njih (jih)</i>	<i>pri nas</i>  <i>pri vas</i>  <i>pri njih</i>	<i>nam</i>  <i>vam</i>  <i>njim (jim)</i>	<i>z nami</i>  <i>z vami</i>  <i>z njimi</i>

Table 3: Declination of personal pronouns

As can be seen from Table 3, there is no syncretism leveling number distinction in the standard Slovenian personal pronoun declination, although there is considerable syncretism leveling case distinctions, with almost all accusative and genitive forms being syncretic, locative forms always being syncretic with either dative or accusative/genitive forms, and instrumental forms being syncretic with dative forms only in the dual. (In addition to the forms from Table 3, there also exist, in only a subset of the paradigm cells, complex forms combining (a subset of) prepositions and a version of the full pronoun, such as *nanj* or *nanjga* ‘onto him’ with the preposition *na*, *zanjo* ‘behind her’ with the preposition *za*, *ponju* ‘for them<sub>DU</sub>’ with the preposition *po*, *vate* ‘into you<sub>SG</sub>’ from the preposition *v*, *mednje* ‘between them<sub>PL</sub>’ with the preposition *med*, etc.)

<sup>3</sup> The third person form in the locative case has two variants. The prescriptive *pri njem* (Toporišič 2000, Herrity 2016, Derganc 2003) and the nonstandard *pri njemu* (considered “wrong” and frequently corrected, cf. Pravopis 2001, <http://besana.amebis.si/pregibanje/>).

<sup>4</sup> Singular personal pronouns for 1<sup>st</sup> and 2<sup>nd</sup> person have two variants in the instrumental case: *z meno*<sub>J</sub> and *z mano*. Both are widely used, with *meno*<sub>J</sub>/*tebo*<sub>J</sub> being very formal and part of the literary language, while *mano*/*tabo* being more common in the colloquial language (Herrity 2016).

<sup>5</sup> Standard Slovenian acknowledges two variants for dual nominative feminine forms: alongside the forms given in the table (*medve*/*vedve*/*onedve*) also *midve*/*vidve*/*onidve*.

<sup>6</sup> 1<sup>st</sup> and 2<sup>nd</sup> person pronouns in dual and plural have homophonous clitic and non-clitic versions of the pronoun in accusative, genitive, and dative. The difference between the two series is only in the presence/absence of stress (e.g. *náju* vs. *naju*).

<sup>7</sup> The dual locative forms have two variants: *pri naju*/*vaju*/*njiju* and *pri nama*/*vama*/*njima*. One is syncretic with the ACC/GEN forms (*naju*/*vaju*/*njiju*) and the other with the DAT (*nama*/*vama*/*njima*). Prescriptive sources may only list/accept the forms *naju*/*vaju*/*njiju*, but given corpus data, the other forms are just as common in contemporary written standard Slovenian: a search in [www.gigafida.net](http://www.gigafida.net) limited to newspapers and magazines returns 230 hits for ‘pri naju’ and 210 hits for ‘pri nama’ (data retrieved on 23.11.2016). See Jakop (2006: 163-167) for dialectal forms and variation (cf. Section 3).

## 1.4 Numerals/quantifiers

Cardinal numerals and quantifiers (those that agree with the head noun, see e.g. Marušič & Nevins 2010) are also adjectival in nature and consequently inflect (throughout the cases) for number, by and large the way it was described in section 1.2 above. However, some agreeing cardinal numerals and quantifiers (unlike ordinal numerals) are restricted in the sense that they each appear only in one number, as can be seen in *Table 4*.

	#, gender	NOM	ACC	GEN	LOC	DAT	INSTR
<i>dva</i> “two”	SG	/	/	/	/	/	/
	DU m	<i>dva</i>	<i>dva</i>	<i>dveh</i>	<i>pri dveh</i>	<i>dvema</i>	<i>z dvema</i>
	f	<i>dve</i>	<i>dve</i>	<i>dveh</i>	<i>pri dveh</i>	<i>dvema</i>	<i>z dvema</i>
	n	<i>dve</i>	<i>dve</i>	<i>dveh</i>	<i>pri dveh</i>	<i>dvema</i>	<i>z dvema</i>
	PL	/	/	/	/	/	/
<i>tri</i> “three”	SG	/	/	/	/	/	/
	DU	/	/	/	/	/	/
	PL m	<i>tri</i>	<i>tri</i>	<i>treh</i>	<i>pri treh</i>	<i>trem</i>	<i>s tremi</i>
	f	<i>tri</i>	<i>tri</i>	<i>treh</i>	<i>pri treh</i>	<i>trem</i>	<i>s tremi</i>
	n	<i>tri</i>	<i>tri</i>	<i>treh</i>	<i>pri treh</i>	<i>trem</i>	<i>s tremi</i>
<i>en</i> “one”	SG m	<i>en</i>	<i>en</i>	<i>enega</i>	<i>pri enem</i>	<i>enemu</i>	<i>z enim</i>
	f	<i>ena</i>	<i>eno</i>	<i>ene</i>	<i>pri eni</i>	<i>eni</i>	<i>z eno</i>
	n	<i>eno</i>	<i>eno</i>	<i>enega</i>	<i>pri enem</i>	<i>enemu</i>	<i>z enim</i>
	DU m	<i>ena</i>	<i>ena</i>	<i>enih</i>	<i>pri enih</i>	<i>enima</i>	<i>z enima</i>
	f	<i>eni</i>	<i>eni</i>	<i>enih</i>	<i>pri enih</i>	<i>enima</i>	<i>z enima</i>
	n	<i>ena</i>	<i>ena</i>	<i>enih</i>	<i>pri enih</i>	<i>enima</i>	<i>z enima</i>
	PL m	<i>eni</i>	<i>ene</i>	<i>enih</i>	<i>pri enih</i>	<i>enim</i>	<i>z enimi</i>
	f	<i>ene</i>	<i>ene</i>	<i>enih</i>	<i>pri enih</i>	<i>enim</i>	<i>z enimi</i>
	n	<i>ena</i>	<i>ena</i>	<i>enih</i>	<i>pri enih</i>	<i>enim</i>	<i>z enimi</i>

*Table 4:* Declination of numerals

The numeral *dva* “two” (and combined higher numerals ending in *dva*) and the quantifier *oba* “both” only have dual forms (Jakop 2012: 355), and the numerals *tri* ‘three’ and *štiri* ‘four’ (and combined higher numerals ending in these) and the quantifier *vsi* ‘all’ only have plural forms (in its predicative adjective-modifying use, as in ‘all wet’, the latter inflects for all three numbers). For referring to two and three/four sets of things, a derived type of numeral (Herrity’s 2015: 189 “differential numeral”) is used, which can also inflect for plural (e.g. *dvoje*<sub>PL</sub> *vžigalice*<sub>PL</sub> ‘two packs of matches’). However, unlike *dva* “two” and *oba* “both”, and unlike *tri* ‘three’ and *štiri* ‘four’, which only have dual or plural forms, respectively (though with syncretic forms in the genitive and locative), the numeral *en* “one” not only has singular forms but also dual and plural forms, which can be used for referring to two or more pairs/sets of things, or with pluralia tantum nouns.<sup>8,9</sup>

<sup>8</sup> In some non-standard varieties, the paradigms of *dva* ‘two’ and *oba* ‘both’, also exhibit plural forms in a further subset of cases (Jakop 2012, 356). These are used only instead of dual forms for referring two sets of two, i.e., as syncretism leveling the dual-plural distinction (e.g. *z dvemi*<sub>PL</sub>/*obemi*<sub>PL</sub> *rokami*<sub>PL</sub>

As can be seen from *Table 4*, the numeral declination shows substantial syncretism. In general, the patterns are the same as in the adjectival declination, though there is additional case- and gender-distinction leveling across the nominative-accusative forms of ‘two’/‘both’ and of ‘three’/‘four’.

## 1.5 Verbs

Verbs agree with nominative subjects in person, number, and gender. In present tense, verbs (i.e. lexical verbs, copulas, modals, aspectuals, etc.) agree only in person and number. In periphrastic constructions consisting of a present, past, or future auxiliary and a participle, such as the *l*-participle (cf. Marvin 2007) or the passive participle, the auxiliary agrees in person and number, whereas the participle agrees in number and gender (i.e., shows nominal agreement). *Table 5* below presents the conjugation patterns of *delati* “work” in synthetic and compound tenses (in which the auxiliary is “be”) as well as in the imperative.

	Person (no gender distinction)				Participle (no person distinction)		
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>		MASC	FEM	NEUT
Present							
SINGULAR	<i>delam</i>	<i>delaš</i>	<i>dela</i>				
DUAL	<i>delava</i>	<i>delata</i>	<i>delata</i>				
PLURAL	<i>delamo</i>	<i>delate</i>	<i>delajo</i>				
Past							
SINGULAR	<i>sem</i>	<i>si</i>	<i>je</i>	+	<i>delal</i>	/	<i>delala</i> / <i>delalo</i>
DUAL	<i>sva</i>	<i>sta</i>	<i>sta</i>		<i>delala</i>	/	<i>delali</i> / <i>delali</i>
PLURAL	<i>smo</i>	<i>ste</i>	<i>so</i>		<i>delali</i>	/	<i>delale</i> / <i>delala</i>
Future							
SINGULAR	<i>bom</i>	<i>boš</i>	<i>bo</i>	+	<i>delal</i>	/	<i>delala</i> / <i>delalo</i>
DUAL	<i>bova</i>	<i>bosta</i>	<i>bosta</i>		<i>delala</i>	/	<i>delali</i> / <i>delali</i>
PLURAL	<i>bomo</i>	<i>boste</i>	<i>bojo</i>		<i>delali</i>	/	<i>delale</i> / <i>delala</i>
Imperative							
SINGULAR		<i>delaj</i>					
DUAL	<i>delajva</i>	<i>delajta</i>					
PLURAL	<i>delajmo</i>	<i>delajte</i>					

*Table 5:* Conjugation of *delati* “work” in synthetic and compound tenses and the imperative.

As can be seen from *Table 5*, the 2<sup>nd</sup> and 3<sup>rd</sup> person dual forms are syncretic, but there is no syncretism across number values in the verbal paradigm in the synthetic tenses, the imperative, or the auxiliary forms of the compound tenses. The participle, which essentially shows nominal agreement, shows the same syncretisms that are observed in the nominal domain.

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‘with two/both hands’, *pred dvemi<sub>PL</sub> leti<sub>PL</sub>* ‘two years ago’); they are not used to refer to pairs of sets, for which only a separate derived numeral can be used.

<sup>9</sup> *En* also inflects for all three numbers in its non-standard indefinite-article use, with the forms being the same as in its numeral use in *Table 4*.

## 1.6 Markedness

Traditionally, the dual is generally considered more marked than the plural, which is in turn more marked than the singular (cf. Greenberg 1966a,b, Corbett 2000, etc.). This claim has also been made specifically for Slovenian by Toporišič (2000). Concretely, Toporišič claims that the singular is semantically unmarked with respect to the dual and the plural because singular can, in certain contexts, be used for more than one item; and that plural is semantically unmarked with respect to the dual because it is used instead of the dual to express duality of paired body parts (see section 2.2 below).

Toporišič's argument for the unmarkedness of the singular with respect to the dual and the plural can also be used to show that the dual is unmarked with respect to the plural. As shown in (1), a singular-marked noun can be used to refer to more than one item, as the command "press the T key", when given to more than one person, can be understood to mean that each person pushes a different T key (each one on their own keyboard). Similarly, a command stating "push the T and V keys", when given to a group of people, can be understood to mean that each person pushes the two keys on their own keyboard, (2), suggesting that the dual too can be used to express a quantity larger than 2.

- (1) Sedaj pa pritiskajna na tipko T.  
now PTCL press.DU/press.PL on key.SG T  
'And now press the T key.' (Not both/all on the same key.)
- (2) Sedaj pa pritiskajna na tipki T in V.  
now PTCL press.PL on key.DU T and V  
'And now press the T and V keys.' (Not both/all on the same two keys.)

A similar finding—that both the dual and the plural can be used to express the other non-singular number—is also reported in MNSZ (in prep.) and BMSSZ (in prep.). In principle, then, the two non-singular numbers are both unmarked and marked with respect to each other.

Greenberg's arguments for the view that the dual is the more marked number are not uncontroversial. One reason the dual is considered more marked is typological: dual is rarer than plural (cf. Greenberg's 1966a generalization 34 "No language has a trial number unless it has a dual. No language has a dual unless it has a plural."). Note, though, that this conclusion ultimately depends on how one understands what dual and plural are. As acknowledged by Greenberg (1966b),<sup>10</sup> the plural of languages with the dual is different from the plural of languages without the dual. In a dual language, plural is the grammatical number that is used for three and more items, while in languages without dual, it means "two or more". So depending on what exactly dual means, the implicational generalization 34 could also be reversed. If dual really means "two or more", then it is semantically equivalent to the plural of languages with a binary distinction singular vs. non-singular number. And if this is the case, then the implicational generalization should really be "only languages with a number meaning "two or more" have a number with the meaning "three or more"; but once this is what the generalization is, the dual (= "two or more") seems to be the less marked and the plural (= "three or more") the more marked number.

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<sup>10</sup> "Of course when the dual is present, the plural no longer has the same meaning as when it is absent since with the dual it means three-or-more, without the dual two-or-more" (Greenberg 1966b, 34).

Nevertheless, in Slovenian, the number that is generally assumed to be the more marked number of the two nonsingular numbers is the dual. The typical reasons for this are as follows.

a) Slovenian personal pronouns for dual nominative case (cf. Table 3) contain the plural forms: *midva* = *mi* "we" + *dva* "two", and similarly *vi-dva* = "you-two" and *ona-dva* = "they-two", which plainly suggests that dual is the more marked number of the two non-singular numbers. In some dialects which lack special dual forms for pronouns, a combination of the plural form with the numeral *dva* "two" is used also in other cases: *nas dva* "us two.ACC", *nas dveh* "us two.GEN", *nam dvem* "us two.DAT". And in some varieties that do have special dual forms for pronouns (the same as Standard Slovenian), the latter are nonetheless reinforced by the numeral *dva* "two" also outside the nominative: *naju dva* "us.DU.ACC two.ACC", *naju dveh* "us.DU.GEN two.GEN", *nama dvema* "us.DU.DAT two.DAT.DU".

b) As seen from tables 1-5, there are more syncretisms inside the dual paradigms than inside the paradigms of the other two numbers. Following the Jakobsonian view of markedness, "if a certain category is marked, then one will find fewer oppositions for other categories within it" (from Nevins 2006). In dual, the gender distinction between feminine and neuter is neutralized in nominative and accusative case forms, which is not the case in either singular or plural. In dual, the 2<sup>nd</sup> and 3<sup>rd</sup> person auxiliaries (and verbs in the present tense) have the same form, which is not the case in either singular or plural. In Dual Feminine and Neuter participles have the same ending.<sup>11</sup> Even though we can find some syncretisms that are unparalleled also in the singular (e.g. dative and locative case have the same ending in singular but not in dual and plural), it still holds that there are more such syncretisms in the dual paradigm than in the paradigm of any other number.

c) Inside the nominal paradigm, in dative case Dual seems to be derived, with additional marking, from the plural form, e.g. *stolom* "chairs<sub>MASC.PL.DAT</sub>" – *stoloma* "chairs<sub>MASC.DU.DAT</sub>", *ročam* "flowers<sub>FEM.PL.DAT</sub>" – *ročama* "flowers<sub>FEM.DU.DAT</sub>", *njim* "them<sub>3p.PL.DAT</sub>" – *njima* "them<sub>3p.DU.DAT</sub>", while there are no cases where the plural form would seem derived from the dual with an additional affix.

d) The dialects that lost the distinction between the two non-singular numbers (further discussed below) have always lost the dual and retained the plural forms. E.g. in (one variety of) Ljubljana Slovenian, the distinction between the dual and plural has been neutralized in the dative case, so that the form *stolom* "chairs<sub>MASC.DU/PL.DAT</sub>" is now used for both DAT.PL and DAT.DU. Again in Ljubljana Slovenian, the distinction has also been neutralized in nominative case for feminine nouns, so that *rože* "flowers<sub>FEM.DU/PL.NOM</sub>"—the form corresponding to the standard plural form—is now used for both dual and plural. Similarly in the verbal paradigm: the Western and Southern dialects lost the distinction between the dual and the plural verbal forms and now only use the form that corresponds to the plural form in other dialects.

e) While there are many pluralia tantum nouns like *jetra* 'liver', *gosli* 'fiddle', *ošpice* 'measles', etc., there are no dualia tantum nouns in Slovenian (cf. Toporišič 2000). And the nouns referring to things that come in pairs or have some inherent duality in them are generally used in the plural rather than then the dual, e.g. *hlače* 'pants', *škarje* 'scissors', *sanke* 'sled', and as will be further explained in section 2.3 below, even nouns referring to paired body parts are generally used in the plural,

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<sup>11</sup> But we saw there is no distinction between genders in 1st and 2nd person singular, while there is in dual and plural.



e.g. *oči* 'eyes', *ušesa* 'ears', *roke* 'arms' etc. (cf. Toporišič 2000, Derganc 2003, Dvořák and Sauerland 2006).

f) Another property of marked categories, according to Jakobson (1941), is that they are expected to be mastered later in acquisition. By this criterion, Slovenian dual again qualifies as more marked than the singular. In an acquisition study on Slovenian numerals and numbers, Almoammer et al. (2013) found that the singular is acquired before the dual and the plural, although they found less difference between the dual and the plural. Based on this study, the acquisition criterion does not allow one to establish the markedness relation between the dual and the plural.

However, there is at least one morphological fact from which an argument can be made for placing the dual lower on the scale of markedness than the plural. The noun *človek* "man" takes a regular dual ending in the nominative dual (*človeka*), but a suppletive stem (*ljudje*) in the plural.<sup>12</sup> But even in this case, the story is more complex, as the dual paradigm mixes the two stems: it is *človek-* in NOM, ACC, DAT, and INST, and *ljud-* in GEN and LOC. No firm conclusion thus seems possible on the basis of this pattern, but the fact that in the nominative the dual patterns with the singular does appear to make the plural the outlier (cf. Bobaljik 2016).

## 2. Use of the dual

### 2.1 Dual and agreement

Traditionally, the dual is described as a grammatical number used when the subject refers to two people/items, which includes subjects that are formed with coordination of two singular subjects ("dual [refers] to [the value] 'two' (or rather, 'one plus one')"; Toporišič 2000: 271).<sup>13</sup> The subject triggering dual agreement can be of any type: a simple noun phrase, (3), a coordination, (4), a pronoun, (5), and since Slovenian is a pro-drop language, also by a non-overt dual subject, (6).

- (3) Punci        sta                igrali                odbojko.  
       girls.DU    AUX.DU        play.DU        volleyball  
       "The (two) girls played volleyball."<sup>14</sup>
- (4) Pehta        in        Mojca    sta                igrali                odbojko.  
       Pehta        and        Mojca    AUX.DU        play.DU        volleyball  
       "Pehta in Mojca played volleyball."

<sup>12</sup> Perhaps one can make the same case on the basis of Arabic, where dual is formed on the singular stem with regular affixation, while (with a subset of nouns) plural is formed with the so-called "broken plural" forms. Or put differently, there is broken plural but there is no broken dual (cf. Orešnik 2001).

<sup>13</sup> The dual also shows up with numbers like 102, 202 etc., (i) (and the singular, like in English, with numbers like 101, 201 etc.), which seems to be a consequence of how these numbers are composed (i.e. 100 [Ns +] 2 Ns).

(i)        Posadili        smo        102        drevesi.  
           Planted        AUX        102        tree.DU  
           "We planted 102 trees."

Given the nature of Slovenian two-digit numbers, where ones precede tens (21= *ena in dvajset* 'one and twenty'), number 2 does not come close to the noun with numbers below 100.

<sup>14</sup> Throughout this chapter, we translate Slovenian bare dual nouns to English with the combination of a parenthesized numeral *two* and a noun in order to distinguish the translations of bare dual nouns from those of the combinations of 'two' and a dual noun. Note that a bare dual noun and the combination of 'two' and a dual noun are not completely synonymous.

- (5) Midva rada planinariva.  
 we-two like.DU.MASC hiking.DU.1P  
 "The two of us like to hike in the mountains."  
 (6) Včeraj sva bila doma.  
 yesterday AUX.DU were.DU home  
 "Yesterday, we(-two) were at home."

As should be obvious from the tables in section 1, dual-marking is not confined to the noun and the verb. DP-internal concord agreement mandates the use of dual forms on all prenominal elements inside the noun phrase, (7), as well as on postnominal adjective phrases, (8). In Slovenian nouns agree with adjectives and other DP-internal elements in gender, number, case, and animacy, but given the focus of this chapter, we only include number information in the glosses.

- (7) oba tista dva sosedova zelena bicikla  
 both.DU those.DU two.DU neighbor's.DU green.DU bicycles.DU  
 "both of those two green bicycles of my neighbor's"  
 (8) Bicikla, umazana kot vrag, sta ležala pozabljena v kotu.  
 bicycles.DU dirty.DU as devil AUX.DU lay.DU forgotten.DU in corner  
 "The (two) really dirty bicycles were lying in the corner all forgotten."

As number agreement also shows up on secondary predicates, dual can be seen there too, when the secondary predicate agrees with a dual/conjoined subject, as in (9).

- (9) Žodor in Ilija sta prišla na obisk fajn utrujena.  
 Žodor and Ilija AUX.DU came.DU on visit well tired.DU  
 "Žodor and Ilija came for a visit all tired."

And when the head of a relative clause is in the dual, the relative pronoun has to be in the dual too.

- (10) Oba otroka, s katerima je učiteljica pospravila  
 both.DU children.DU with which.DU.INST AUX.SG teacher.SG cleaned.SG  
 razred, sta dobila nagrado.  
 classroom AUX.DU got.DU reward  
 "Both children with whom the teacher tidied up the classroom got a reward."  
 (11) Moja otroka rada skačeta po senu.  
 My.DU children.DU like.DU jump.DU over hay  
 "My (two) children like to jump around in hay."

In short, whenever there is agreement between a noun or an NP and some other element, we have the context in which we can see dual on the agreeing element.

Some exceptions to the general rule presented above (dual is two or else one plus one) can also be found. A clear case comes from conjunct agreement, where coordination of two dual nouns triggers dual agreement on the verb, contrary to what one would expect if number agreement was simply calculated from the numbers of individual conjuncts (Marušič et al. 2008, Šuligoj 2017). Examples (12)-(14) are from Šuligoj (2017).

- (12)   Prevleki       in       naslonjali       sta       narejeni       iz       usnja.  
          cover.DU       and       armchair.DU   AUX.DU   made.DU   from   leather  
       "The (two) covers and the (two) armchairs are made out of leather."

According to Šuligoj's (2017) study (based on a sample of 50 speakers of various dual dialects), dual can show up also when coordinated subjects consist of a singular and a dual noun phrase, regardless of the order. In sentences in which the dual noun phrase was closer to the verb, (13), dual agreement was the most frequently selected option in her experiment, reaching 50% and surpassing the second-most frequent masculine plural agreement, which was selected about 45% of the time, while in sentences like (14), the most frequent agreement was masculine plural (approx. 55%), with dual agreement at 40%.

- (13)   a.       Skleda   in   cedili               sta       ležali       v       koritu.  
          pot.SG.F and strainer.DU.N   AUX.DU   laid.DU.F/N   in   sink  
          "A pot and (two) strainers were laying in the sink."  
       b.       Skleda   in   cedili               so       ležali       v       koritu.  
          pot.SG.F and strainer.DU.N   AUX.PL   laid.PL.M   in   sink  
          "A pot and (two) strainers were laying in the sink."
- (14)   a.       Kosili       in   malica       sta       vključeni       v   ceno.  
          lunch.DU.N and snack.SG.F   AUX.DU   included.DU.F/N   in   price  
          "(Two) lunches and a snack are included in the price."  
       b.       Kosili       in   malica       so       vključeni       v   ceno.  
          lunch.DU.N and snack.SG.F   AUX.PL   included.PL.M   in   price  
          "(Two) lunches and a snack are included in the price."

It appears that dual agreement on the verb is acceptable whenever the closest noun phrase is dual, regardless of what the first conjunct is (when the subject is preverbal). So even when the first conjunct is plural, as in (15), or describes a set of items that is bigger than two, as is the case with the noun phrase *pet skled* "five pots" in (16), the verb can agree with the closer conjunct in dual.

- (15)   Sklede in       pokrovki       sta       ležali       v       koritu.  
          pot.PL and   cover.DU       AUX.DU   laid.DU       in   sink  
          "The pots and the (two) lids were lying in the sink."
- (16)   Pet   skled               in   dve pokrovki   sta       ležali   v   koritu.  
          five pot.PL.GEN and   two cover.DU   AUX.DU   laid.DU   in   sink  
          "Five pots and two lids were lying in the sink."

It should be noted, though, that plural agreement is also possible when two dual noun phrases are coordinated, at least when the two noun phrases are human, as in (17). In fact, when the coordinated subject includes two dual pronouns, dual agreement does not even seem possible, (18).

- (17)   Dva   Rusa               pa dva   Američana       so       šli       stavit ...  
          two Russians.DU and two Americans.DU   AUX.PL   went.PL   bet.INF  
          "Two Russians and two Americans placed bets ..."

- (18) a. Midva in vidva bomo skupaj igrali nogomet.  
 we-two and you-two AUX.PL together play.PL.1P football  
 "The two of us and the two of you will play football together."  
 b. \*Midva in vidva bova skupaj igrala nogomet.  
 we-two and you-two AUX.DU together play.DU.1P football

## 2.2 Pair nouns and lexical restrictions

It has been observed (Kopitar 1808: 218, Jakopin 1966: 99, Priestly 1993: 440-1, Derganc 2003: 172, Jakop 2006, Dvořák and Sauerland 2006, etc.) that the dual is, perhaps surprisingly, not used in Slovenian when the noun refers to an item that typically comes in a pair. For example, when used to mean a person's (or animal's) pair of legs, arms, eyes, etc., the nouns *noga* "leg", *roka* "arm", *uho* "ear", etc., will be used in their plural forms (*noge* "legs.PL", *roke* "arms.PL", *ušesa* "ears.PL") rather than in their dual forms (*nogi* "legs.DU", *roki* "arms.DU", *ušesi* "ears.DU").

- (19) Noge me bolijo.  
 Legs.PL.NOM I.DAT hurt.PL  
 'My legs hurt.'  
 (20) Peter ima velika ušesa.  
 Peter has.3P.SG big.NEUT.PL.ACC ears.NEUT.PL.ACC  
 'Peter has big ears.'  
 (21) Ali si si obrisal čevlje?  
 Q AUX.2P.SG REFL.DAT wipe.SG shoes.PL.ACC  
 'Did you wipe your feet?'  
 (22) Pokliči svoje starše.  
 call.2P.SG.IMP self's.PL parents.PL.ACC  
 'Call your parents.'

When these nouns are used in their dual form, the interpretation is that the two items do not form a natural pair. For example, the dual noun in (23) is interpreted as denoting two ears, but these are not the addressee's own ears. These could be two puppet ears that were assigned to him/her to wash, or something similar.

- (23) Peter ima veliki ušesi.  
 Peter has.3P.SG big.NEUT.DU.ACC ears.NEUT.DU.ACC  
 'Peter has (two) big ears.'

When these nouns are preceded by the numeral *dva*, *dve* "two" or the quantifier *oba*, *obe* "both", they will generally be used in the dual when they refer not to the pair as a set but as a doublet of two independent items (cf. Derganc 2003).

- (24) Umij si obe roki.  
 Wash.2P.SG.IMP REFL.DAT both hands.DU.ACC  
 "Wash both of your hands!"  
 (25) Vsi imamo dve roki in dve nogi.  
 all have.1.PL.PRES two hand.DU and two leg.DU  
 "We all have two hands and two feet."  
 (Derganc 2003, (30))

It appears that *dve* "two" and *obe* "both" simply cannot be used with a plural-marked noun, thus also overriding the otherwise preferential use of the plural on pair nouns.

However, certain nouns of this class, as noted for *starši* 'parents' by Derganc (2003: 174), also allow the dual, in addition to the plural, when reference is made to a pair. Although (27) is considered substandard by the Toporišič *et al.* (2001) prescriptive dictionary/manual of style, such dual-marked pair nouns are abundantly attested in contemporary written standard Slovenian as it appears in newspapers and magazines.

- (26) Starši            so            me    obiskali.            (Derganc 2003, (37))  
       Parents.PL    AUX.PL    me    visited.PL  
       "My parents visited me."  
 (27) Starša            sta            me    obiskala.            (Derganc 2003, (38))  
       Parents.DU    AUX.DU    me    visited.DU  
       "My parents visited me."

Derganc (2003: 174) suggests that the dual use of *starša* "parents" must be an innovation since older stages of the language (16<sup>th</sup> century) exhibit only the plural forms. Of course, the plural form of this noun was itself an innovation from an even earlier dual form, which was predominantly used for these nouns also in Old Church Slavonic (Huntley 1993: 134), but which had been replaced in paired nouns by the plural form before the 16<sup>th</sup> century (Jakopin 1966: 99).

Another paired noun that appears both in the dual and the plural is *dvojčka* "(two) twins" (and expressions like *enojajčna dvojčka* "twins", *siamška dvojčka* "Siamese twins" etc.). The prescriptive Slovenian dictionary/manual of style of Toporišič *et al.* (2001) actually only lists the form in the dual, but the Slovenian dictionary of Bajec *et al.* (1970-1991) also lists the plural example (28), and such uses are also abundantly attested in contemporary written standard Slovenian as it appears in newspapers and magazines. Indeed, in some uses and registers, the plural form *dvojčki* "twins" seems to be more frequent than the dual form *dvojčka* (e.g. using Google to search the internet as a corpus, the relation between *voziček za dvojčke* "stroller for twins.PL" and *voziček za dvojčka* "stroller for twins.DU" is 6:1).

- (28) Rodila            je            dvojčke  
       give-birth    AUX    twins.PL  
       "She gave birth to twins."

### 2.3 Numerals and quantifiers with dual

It is often noted that Slovenian nouns carrying dual morphology are, perhaps surprisingly, typically used together with the numeral "two" or a quantifier like "both", as shown by (29) (based on (30) from Dvořák and Sauerland 2006: 109).

- (29) Kupil            sem \*(dve)    knjigi.  
       bought            AUX    two    book.DU  
       'I bought two books.'

It is also known, however, that this is neither a hard-and-fast nor an across-the-board rule. For Dvořák and Sauerland (2006: 103), a dual-marked noun "generally needs to

be” preceded by the numeral/quantifier when it is “initially introduced”; for Derganc (2003: 168), this numeral-/quantifier-modification “can be omitted if the speaker knows that the nominal phrase refers to two entities”; for Jakopin (1966: 99), dual-marked nouns without numeral/quantifier modification seem to receive a definite interpretation. An example of an unmodified dual-marked noun apparently licensed by a definite interpretation is in (30).

- (30) Dva kupca      sta      stopila v trgovino. Ko      sta      si      kupca  
 two buyers.DU AUX.DU step.DU in shop      when AUX.DU REFL buyers.DU  
 ogledala blago,      sta      začela      naročati. (Jakopin 1966: 99)  
 see.DU merchandise AUX.DU start.DU order.INF  
 'Two buyers came into a store. When they were done checking the  
 merchandise, they starting ordering.'

Definiteness as the licenser of the absence of overt expression of duality next to the dual-marked noun can also be invoked for Dvořák and Sauerland’s (2006) examples from (31)-(32), in which duality is not overtly expressed on the relevant dual noun (underlined) – although it *is* overtly encoded inside the complement of the dual-marked noun and (through the coordinated subject) inside the restrictive relative clause.

- (31) Voznika      dveh      avtomobilov sta      se      kregala.  
 Drivers.DU two.GEN.DU cars.GEN.DU AUX.DU REFL argued.DU  
 'The Drivers of (the) two cars were arguing.'  
 (Dvořák and Sauerland 2006, (17))
- (32) Moža, ki sta      poročena z      Mojco in Ano, sta      srečna.  
 man.DU who AUX.DU married.DU with M.      and A.      AUX.DU happy.DU  
 'The men who are married to Mojca and Ana are happy.'  
 (Dvořák and Sauerland 2006, (18))

Nevertheless, restricting unmodified dual-marked nouns to just definite NPs is too strong, too. For example, newspaper headlines such as (33) are not at all uncommon and are also not an innovation, having been noticed already by Jakopin (1966: 99).

- (33) Drzna      zmikavta      oropala pošto      v Semedeli  
 daring.NOM.DU burglars.NOM.DU robbed.DU post-office in Semedela  
 '(Two) Daring burglars rob Semedela post-office' (www.delo.si, 2011)

It is true, though, that whereas the dual-marked ‘robber’ in (33) is not interpreted as definite (nor as specific in the sense of Ionin 2006), the noun phrase acts as sentence Topic and thus clearly carries some degree of givenness. The actual text featuring under the headline in (33) starts with (34), in which the dual-marked ‘robber’ is also not modified by “two” (nor is the dual-marked ‘handgun’); but again, while not definite, the subject noun phrase of (34), which ‘robber’ heads, may carry some degree of givenness (and the dual on ‘handgun’ is presumably a case of dependent dual<sup>15</sup>).

<sup>15</sup> Dual-marked nouns can easily occur without numeral/quantifier modification in cases of dependent duals, such as (i), whose interpretation is that Tone and Meta will each get a car.

- (34) Ob 12.22 sta s pištolama oborožena roparja vdrla skozi  
 at 12:22 AUX.DU with guns.DU armed.DU thieves.DU broke-in.DU through  
 glavni vhod in od poštne uslužbenke zahtevala denar.  
 main entrance and of post clerk demanded.DU money  
 'At 12:22 (two) (two-)handgun-armed robbers broke in through the main  
 entrance and demanded money from the employee.'

However, it turns out that even givenness of the noun phrase does not seem to be mandatory for the occurrence of a dual-marked noun without numeral/quantifier modification. One case that might be taken to demonstrate this is in (35).

- (35) Grška otoka stresla potresa (www.zurnal24.si, 2012)  
 Greek.ACC.DU island.ACC.DU rocked earthquake.NOM.DU  
 '(Two) Greek islands hit by (two) earthquakes'

Whereas the dual-marked 'Greek island' seems to be treated as the Topic and would as such carry some givenness, the unmodified dual-marked 'earthquake' is certainly neither definite nor specific, nor does it seem to, as far as we can tell, carry any degree of givenness (and it does not have to be interpreted as a dependent dual, indeed, on the more neutral interpretation, it is not – each of the islands was hit by both quakes). (35), however, is again a newspaper headline, and it might be that newspaper headlines are a register of their own, licensing things that are otherwise unlicensed in the language. But examples of a similar type can also be found outside headlines. *Enojajčna dvojčka* 'identical twin.du' is listed in dictionaries as a technical term in the dual, and it can easily be used without numeral modification in noun phrases not carrying any degree of givenness, even acting as type-denoting NP, as in (36).

- (36) A si že videl enojajčna dvojčka?  
 Q AUX already seen single-egg.ADJ.ACC.DU twin.ACC.DU  
 'Have you ever seen (two) identical twins?'

The only thing that seems to be given in this case is the duality of twins, i.e., the fact that twins come in pairs.

In certain cases, dual-marked nouns without numeral modification can also be used with a generic interpretation. Contrasting (37)-(39), Jakopin (1966: 99) observes that unlike the singular and the plural versions, the version in (39), with the dual-marked noun, cannot be interpreted as a generic statement about children's attitudes but only as a report about the attitude of two concrete children.

- (37) Otrok se rad igra.  
 child.NOM.SG REFL like.SG.MASC play.SG  
 'A child likes to play.'

- 
- (ii) Tone in Meta bosta za rojstni dan dobila avtomobila.  
 Tone and Meta will for birthday get car.ACC.DU  
 "For their birthdays, Tone and Meta will get (two) cars."

- (38) Otroci se radi igrajo.  
 child.NOM.PL REFL like.PL.MASC play.PL  
 ‘Children like to play.’
- (39) Otroka se rada igrata.  
 child.NOM.DU REFL like.DU.MASC play.DU  
 ‘The/Our (two) children like to play.’

Note, however, that especially in the case of nouns that were mentioned in the previous section as partly behaving like pair nouns and in which a generic characteristic can sensibly be ascribed to pairs (rather than to any individual on their own), such as ‘spouses’, ‘twins’, ‘parents’, ‘brothers’, this is possible, (40).

- (40) Saj veš, kako je – zakonca / dvojčka / brata vedno držita skupaj.  
 spouses.DU twins.DU brothers.DU always stick together  
 ‘You know what it’s like: (two) spouses / (two) twins / (two) brothers will always stick together.’

### 3. Dialectal variation

As mentioned in the introduction, there is a lot of variation across different varieties of Slovenian in the actual forms of dual marking and in the extent of the use of special dual forms. The paradigms presented in sections 1.1 to 1.5 exist in entirety only in few dialects and in the prescribed standard variety. A small number of dialects may be without the dual altogether, but for the most part, different dialects exhibit different amounts of dual forms.

While dialects of the North East exhibit almost all of the dual forms of the prescribed standard variety, most of the other dialects do not. *Figure 1* presents a map where the existence of a subset of special forms for dual, based on data reported in Jakop (2008), is quantified for each point where dialectal data was gathered.

As can be seen from the map in Figure 1, the dialects of the South West, along the border between Italy and Slovenia (Slovenian is spoken on both sides of the border as there is a sizable Slovenian minority in Italy all along the border with Slovenia), and the dialects of the South, along the border with Croatia, are without most of the dual forms. In some cases, these dialects do not have any dual form at all (these are some of the white dots on the map in Figure 1). Central Slovenian dialects and dialects of the North and North-East, on the other hand, use dual fully productively.

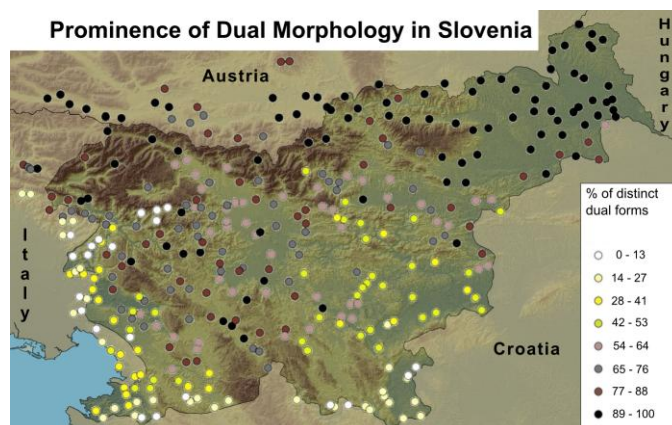




Figure 1: Cumulative use of the dual based on data from Jakop (2008), (map reprinted from Marušič *et al.* 2016). White dots represent dialects with few or no special dual forms, black dots represent dialects with many or all dual forms.

The map in Figure 1 shows the sums of all dual forms for each dialect collection point. It should be stressed, though, that it need not be the case that a dialect with more dual forms (a darker point on the map) has each and every one of the forms observed with a dialect with less dual forms, plus some extra. For example, as shown on Jakop's (2008) map in Figure 2 below, when it comes to dual forms for (nominative) 1<sup>st</sup>-declension feminine nouns, the central Slovenian dialects do not have a special dual form in the nominative, but simply use the plural nominative form, while the dialects in the west, including some of those that have very little dual according to the cumulative map in Figure 1, have a special dual form that is distinct from the plural form.



Figure 2: Use of the dual/plural forms for (nominative) 1<sup>st</sup>-declension feminine nouns, example *krava* "cow". Black/filled circles are dialects that have a special dual form for such nouns, white/empty circles are dialects in which the distinction between the dual and plural forms is neutralized and only the plural form is used, while the half-filled circles represent dialects where variation is reported. (Map reprinted from Jakop 2008)

There is a further difference between the two groups of dialects. In the central dialects the syncretic form of nominative 1-st declension feminine nouns that is used for both sets of two and sets of more than two (i.e. *krave*) triggers plural agreement on the verb when referring to, say, a set of three but dual agreement when referring to a set of two, (41); although it is formally syncretic with the plural form, it may not be correct to treat the form *krave* in (41)a) as plural. On the other hand, this does not seem to be the case in most of the western dialects with less dual forms, where the single form (i.e. *krave*) triggers plural verb agreement regardless of whether the single form is used for referring to a set of two or of three. Jakop (2008) does not provide these data, and we are not aware of any other comparative dialectal work on the relevant dialects with respect to this question. Moreover, Jakop (2008) reports dialectal data for dual marking on the verb only for the first and the second person, which are the paradigm values in which some of these dialects only use plural forms. So in contrast to the Central mixed pattern in (41)a), certain dialects of the West actually allow mixed-pattern examples like (42).

- (41) a. Dve krave se paseta na travniku.  
           two cows.PL REFL graze.DU on pasture  
       b. Tri krave se pasejo na travniku.  
           three cows.PL REFL graze.PL on pasture
- (42) Dve kravi se pasejo na travniku.  
       two cows.DU REFL graze.PL on pasture  
       "Two cows are grazing on a pasture."

Despite the fact that nearly all of the dialects for which there is data are missing at least some of the dual forms (according to Jakop 2008, there is only one dialect that has dual forms for all of the reported paradigms – Zgornja Kapla), the dual can be considered productive and vital throughout Slovenia, even though in some parts primarily because of the standard language, which is taught in schools and used in the media, making it essentially impossible to avoid exposure to the dual.

#### 4. Semantics and pragmatics of dual

As described above, Slovenian dual is typically claimed to mean simply "two", and as it is often accompanied by the numeral "two" (see section 2.3 above) the conclusion that it basically means the same as the numeral becomes enticing. As the interpretation of numerals is typically said to be exact (cf. Barner 2012), it would then follow that the dual has exact interpretation too, meaning that it really just means "exactly two". This would make it different from the other two numbers. For the plural it is obvious that it cannot have an exact interpretation as it means "more than one"; but even for the singular it has been argued that its semantics is really "more than zero" rather than "one" (Chierchia et al 2008).

Using experimental evidence, BMSSZ (in prep.) show that there is a measurable difference in adult speakers in how they interpret a bare dual compared to the dual used together with the numeral "two". Concretely, they presented subjects with a picture with different numbers of items and asked them if a sentence they heard is a good description of that picture. The sentences were of the type *V okvirčku je balon* "There is a balloon on the picture". Sentences with singular, dual and plural morphology on the noun and the verb were paired with pictures with 1, 2, or 3 objects. A separate test was run where the sentences contained the numeral next to the noun.

Their results showed that while the acceptance of overt numerals for pictures that do not show the named number of items is basically non-existent (between 1% and 5%), the acceptance of a bare dual for 3 objects is comparable to the acceptance of a bare singular for 2 or for 3 objects. Interestingly, the acceptance of a bare plural for 2 objects is also at similar level. This suggests that like the singular, whose semantics may really be just "more than zero", the semantics of the dual is then also "more than 1" rather than "exactly 2".

However, if the dual means "more than 1" and the interpretation "exactly 2" comes in as a scalar implicature, one would expect this implicature to be cancelable in the same environments in which its parallel is cancelable with the singular. Now, in downward entailing environments, the singular can also be used to mean more than one object, as shown in (43). Even if Vid gets two books, he will still be happy.

- (43) Če mu kupiš knjigo, bo Vid vesel.  
 if him buy book.SG will Vid happy  
 "If you buy him a book, Vid will be happy."

Therefore, we should expect to find the same kind of inference possibilities also with the dual. That is, if we put the dual in a downward entailing environment, we should be able to cancel the pragmatics of the dual, so that the dual should allow inferences to three or more items. This has been experimentally tested in MNSZ (in prep.), who report that the dual does not allow this kind of inferences. While 80% of the subjects allowed inferences from disjunction to conjunction, the dual allowed inferences to three items only for roughly 40% of the subjects in the same experiment.

- (44) Vsak, ki ga motita drevesi, rad poje operne arie.  
 everyone who him bother trees.DU likes sing opera arias  
 "Everyone who is bothered by (two) trees likes to sing opera arias."

MNSZ (in prep.) find that the dual does not allow inference to three, so that it essentially behaves like "exactly 2". The bare dual is used much like the dual coupled with the numeral.

Sauerland (2008) claims that akin to the plural, which can be used for singular, dual, and plural referents, as in example (45), the dual can be used for both singular and dual referents in Slovenian. His examples were experimentally tested by MNSZ (in prep.), where the dual did not prove to have such properties. Concretely, Sauerland argues that in the situation described in (30), the dual is appropriately used as we are not sure whether we are talking about one person or two. In their online experiment, MNSZ (in prep.) found that only 19% of their Slovenian subjects accept the dual in this example. The experiment did not test this situation, for comparison, with a singular or plural version of the sentence, but our intuition is that the plural works best in such an example.

- (45) A: Ali ima Peter otroke?  
 Q has Peter kids.PL  
 "Does Peter has children?"  
 B: Ja. Ima enega.  
 Yes has one  
 "Yes, he has one."

- (46) Situation: *I want to have someone over for dinner, but I only have enough food in the house to invite either Bill and his brother or John, who eats for two people.*  
 Naj prideta točno ob osmih  
 PTCL come.3P.DU exactly at 8.LOC  
 'They (dual) should come at 8 o'clock sharp.'  
 (adapted from Sauerland 2008: p.75, (28))

Another example for which Sauerland (2008) claims that it shows that the dual can be used for both singular and plural referents is given in (47), where according to him, both the dual and the singular can be used in the given situation. However, this was again not confirmed by the experimental findings reported in MNSZ (in prep.), where only 3,6 % of the subjects accepted example b. with the dual. On the other hand, both

the singular and the plural seem possible to some degree, with the singular accepted at a rate of 61,7% and the plural at a rate of 48,7% of MNSZ's Slovenian speakers.

(47) Situation: *Each student brought at least one book. Some brought exactly one book, and others brought exactly two books, but none of them brought more than two books.*

- a. Vsak študent je prinesel s seboj svojo knjigo.  
every student AUX brought with self his.SG book.SG  
"Every student brought his book."
  - b. Vsak študent je prinesel s seboj svoji knjigi.  
every student AUX brought with self his.DU book.DU  
"Every student brought his (two) books."
  - c. Vsak študent je prinesel s seboj svoje knjige.  
every student AUX brought with self his.PL book.PL  
"Every student brought his books."
- (adapted from Sauerland 2008, (25))

Therefore, the dual is not only not less (semantically) marked than the singular, but it also seems much closer to having a strict interpretation, whereas the Slovenian plural seems similar to the English plural. This means that the plural in Slovenian-like dual languages seems to be the same as the plural in non-dual languages (except for the scalar implicature).

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