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Some studies (e.g., Schwartz et al., Language mode vs. L2 interference: Evidence from L1 Polish. *ICPhS*, 2015) suggest that the transfer between languages is a binary setting, for example, it either happens or does not happen. With recent studies and suggestive evidence from usage-based approaches, it becomes feasible to suggest that the phenomenon of transfer may not be binary but rather gradient (Cabrera & Zubizarreta, Overgeneralization of causatives and transfer in L2 Spanish and L2 English. *Selected Proceedings of the 6th Conference on the Acquisition of Spanish and Portuguese as First and Second Languages*, 15–30, 2005; Römer et al., Linking learner corpus and experimental data in studying second language learners' knowledge of verb-argument constructions. *ICAME Journal*, 38(1), 115–135. <https://doi.org/10.2478/icame-2014-0006>, 2014; Goschler & Stefanowitsch, *Generalization and transfer in L2 acquisition: The role of entrenchment in L1 and L2*. ICLC. https://iclc2019.site/wp-content/uploads/abstracts/applied/ICLC-15_paper_202.pdf, 2019). The current study is a replication of Goschler and Stefanowitsch (2019), who tested advanced German speakers of English using an acceptability judgment task and other measures on English ditransitive constructions, tapping into L2 learners' receptive lexicogrammar knowledge. Goschler and Stefanowitsch (2019) found that even at advanced levels, learners may accept unconventional combinations in the English ditransitive construction that are otherwise strongly attracted to each other in the German ditransitive, suggesting that such structures may not be entrenched enough in the L2 to be judged as ungrammatical, possibly due to L1 influencing this judgment. The transfer effects do not seem to be limited to the ditransitive but seem possible in the intransitive construction as well (Gedik, Collostructional transfer effects in Turkish learners of English: The intransitive-unaccusative construction. *Pedagogical Linguistics*. <https://doi.org/10.1075/pl.22019.ged>, 2023). The present study replicated the results, with strongly attracted combinations in the Turkish ditransitive skewing the acceptability of the corresponding unconventional combinations in the English ditransitive. Possible explanations and brief pedagogical implications are discussed.

Keywords (separated by “ - ”)

Transfer effects - Collostructions - Construction grammar - Ditransitive - Turkish

AUTHOR QUERIES

- Q2 The citation “Schwartz et al., 2012” has been changed to “Schwartz et al. 2015” to match the author name/date in the reference list. Please check if the change is fine.

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L1-L2 Transfer in Ditransitive Construction: A Usage-based Replication Study with Turkish Speakers of English

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Tan Arda Gedik and Fatima Uslu

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1 Introduction

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Conventional wisdom in linguistics assumes transfer between the first or second language (L1-L2) to be a binary setting (e.g., Schwartz et al., 2015). Recent scholarship has suggested that transfer may manifest itself as a gradient phenomenon, where the frequency of or the exposure to the linguistic structure under scrutiny may affect what is transferred and how much it is transferred (Cabrera & Zubizarreta, 2005; Martinez-Garcia & Wulff, 2012; Römer et al., 2014; Goschler & Stefanowitsch, 2019).

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15 While most generativist linguists engender the former view, usage-based
16 linguists arguably embody the latter, at least from a theoretical perspec-
17 tive. The binary setting perspective assumes that either transfer from L1
18 to L2 happens or it does not. The study of Schwartz et al. (2015) is an
19 example of this view. The researchers analyzed phonological interference
20 from Polish into English in Polish speakers of English. Although they
21 provided a participant-by-participant matrix of instances of glottaliza-
22 tion, they conclude that transfer does not happen, even though they
23 show that for particular individuals transfer occurs. While generalizations
24 of ‘if X, then Y’ may work under certain circumstances, as it will become
25 clearer throughout this chapter, language transfer seems to work closer to
26 ‘if X, then possibly Y’.

27 On the other hand, from a usage-based perspective, transfer occurs in
28 a gradient, frequency-driven manner. That is, there is evidence that some
29 items which are strongly entrenched in the L1 are likely to be transferred
30 over to the corresponding L2 items which are weakly entrenched, and
31 this seems to occur even at advanced proficiency levels (Goschler &
32 Stefanowitsch, 2019; Gedik, 2023). This suggests that transfer may still
33 occur at advanced levels but with more gradience in what gets trans-
34 ferred. This is also opposite to what conventional wisdom in linguistics
35 about transfer suggests (Selinker, 1972). For gradient transfer effects, the
36 studies of Cabrera and Zubizarreta (2005), Martinez-Garcia (2012),
37 Römer et al. (2014) can be regarded as examples. Cabrera and Zubizarreta
38 (2005) argue that during the earlier stages of L2 acquisition, language
39 transfer such as overgeneralization of constructions (i.e., the caused-
40 motion construction, and the intransitive-motion construction) occur
41 more frequently. However, the transfer rate decreased gradually as profi-
42 ciency in the L2 increased. However, there were instances of gradient
43 transfer events even in highly proficient L2 users. As inferred from the
44 results of Goschler and Stefanowitsch (2019) (G&S hereafter), the
45 entrenchment of item-construction combinations in L1 may be a crucial
46 factor that may skew learners’ perception of related or similar construc-
47 tions in L2—even if the constructions are arguably highly entrenched
48 and learned in L2 at advanced levels. This also provides further suggestive
49 evidence that constructions across languages may be stored together as
50 *diaconstructions* (see Höder, 2012 for a discussion). Further analyses of

this phenomenon can also provide insights into teaching specific constructions to students with specific L1 backgrounds (i.e., teaching the English ditransitive to Turkish learners of English). Therefore, this study will serve as a replication study of G&S (2019) in Turkish to identify language transfer in detail and discuss the potential pedagogical implications briefly.

2 Literature Review

Usage-based models of language acquisition suggest that language users acquire lexically specific templates, which later turn into more abstract schemas as speakers gain experience with the language via frequency (e.g., Diessel, 2016). But there is also evidence that lexically specific and abstract schemas of even the same construction can co-exist (Bybee, 2010), suggesting that ultimate abstraction of the form of construction does not entail full accuracy on the items that occur in the construction. There is a growing body of evidence that language, both L1 and L2, is learned via domain-general cognitive abilities such as attention, memory, abstraction, and pattern recognition (Tomasello, 2003; Dąbrowska, 2019), although the full extent to which abilities are involved in this process is still not completely clear. This means that L2 learners can represent the distribution or frequency of a construction differently because their cognitive abilities and the exposure they have to language differ (Gruszka et al., 2010; Römer & Yilmaz, 2019). Frequency, all other things being equal, reorganizes our linguistic knowledge by means of simple entrenchment and conservatism via entrenchment (Goldberg, 2019).

When learners learn an L1 or L2, they overgeneralize or undergeneralize some linguistic knowledge (e.g., when L1 English-speaking children say **I giggled you* or L2 speakers say **the clouds were disappeared*). Simple entrenchment is how often the structure has been experienced in ambient language, and conservatism via entrenchment is how many times this structure occurred with a competing structure, suppressing one option for discourse, pragmatic or semantic viability (Goldberg, 2019). Take for instance the English ditransitive and the to-ditransitive. L1 or L2 learners

84 converge on the form of these structures by means of simple entrenchment
85 and possibly suppress the ditransitive option and supply the to-
86 dative when the context requires intentionality through conservatism via
87 frequency. Similarly, conservatism via frequency can also preempt uses of
88 unconventional items in other construction, such as **I disappeared the*
89 *rabbit*, which is an overgeneralization of the verb (Robenalt & Goldberg,
90 2015). However, in many cases, because exposure differs among indi-
91 viduals (i.e., by means of print exposure), there is evidence that neither
92 L1 nor L2 speakers converge on the same grammar, with L1 speakers
93 with high print exposure possibly converging a bit more in certain aspects
94 of language and highly experienced L2 speakers outperforming less expe-
95 rienced L1 speakers (Dąbrowska, 2019).

96 Transfer as a linguistic phenomenon has been a topic of debate. While
97 generativist linguists tend to view transfer as a binary setting, usage-based
98 approaches suggest transfer is more gradient. One way to study transfer
99 in a usage-based approach lies in calculating frequencies. Collostructional
100 analysis is a method developed by Gries and Stefanowitsch (2003) to
101 study how many times words combine with other structures. Analyzing
102 the frequency and distribution of constructions in a corpus identifies pat-
103 terns used together; therefore, we can see the attraction and repulsion
104 among the items. For instance, *give* in the English ditransitive makes up
105 50% of the usages and is strongly attracted to the English ditransitive
106 (Herbst, 2020). However, *explain* is strongly repelled because it occurs
107 only in a competing structure, the to-dative. This, combined with con-
108 textual restrictions of these constructions, provides speakers with infor-
109 mation on how to use these combinations. Given the fact that some
110 constructions are similar across languages in terms of basic meaning and
111 at times structure, there may be potential interactions between the sets of
112 items held in construction X in language Y, and construction X in lan-
113 guage Z (this is also known as *diaconstructions*, see Höder, 2012).

114 This interaction combined with individual linguistic experience has
115 been reported to result in L1 transfer even at advanced levels. For instance,
116 Römer and Yilmaz (2019) provide some evidence that Turkish speakers
117 of English differ from L1 English speakers and other L2 speakers with
118 different backgrounds in their use of some constructions. The authors
119 report that their use of some verbs resembles the frequency pattern of the

corresponding constructions in Turkish. Similarly, G&S provide the first 120
 robust methodology to analyze such transfers and show compelling evi- 121
 dence that even advanced German speakers of English transfer strongly 122
 entrenched items in the German ditransitive to the English ditransitive, 123
 even when such combinations are not allowed or are unconventional in 124
 English. For instance, in an acceptability judgment task, participants 125
 found a sentence such as **I explain/suggest/transfer you the book* quite 126
 acceptable. This shows that transfer among languages at times may be a 127
 lexically specific event and that a strong frequency relationship between 128
 items in the L1 may hinder judgment in the L2, when the corresponding 129
 items have a weaker frequency count. The methodology of G&S is dis- 130
 cussed in more detail later. 131

In replicating G&S, it is important to discuss the construction under 132
 scrutiny. The English and Turkish ditransitive constructions take a direct 133
 object and an indirect object. The direct object is the noun that refers to 134
 the entity affected by the verb and the indirect object is the noun that 135
 refers to the entity for whom/which the verb is performed. The ditransi- 136
 tive construction usually involves verbs that express the transfer of a liter- 137
 al or a metaphorical object (Herbst, 2020). In English, verbs such as 138
give, send, tell, and show (among others) occur very frequently in the 139
 ditransitive construction (Herbst, 2020). The Turkish ditransitive con- 140
 struction is similar to the English ditransitive in using two types of objects 141
 and usually expressing a transfer (Rahmanadia, 2021). However, there 142
 are also some differences in the form: in Turkish, the verb occurs at the 143
 end, preceded by the indirect and direct objects. Depending on vowel 144
 harmony rules, the indirect object is marked with the suffix *-e* or *-a* and 145
 the direct object is marked with *-ı* or *-i*. Semantically, they both mean 146
 the literal (e.g., giving a book) or metaphorical (e.g., telling a story) trans- 147
 fer of an item. Syntactically, the ditransitive construction in Turkish is 148
 formulated as follows: 149

(1) <i>Ben</i>	<i>ona</i>	<i>kitabı</i>	<i>verdim.</i>	
I;1SG		DAT;3SG	book:ACC;SG	give;PRET;1SG
NP	OBJ1	OBJ2	VERB	

'I gave him/her the book.'

151 In contrast, English formulates ditransitive construction as follows:

(2) *I gave him the book.*

152 NP VERB OBJ1 OBJ2

153 3 Methodology

154 This study was designed in partial replication of G&S. Our research
155 questions are:

- 156 (a) Will collocation strength of various verbs in the Turkish ditransi-
157 tive construction affect acceptability judgment scores in the corre-
158 sponding English ditransitive construction?
159 (b) How does this manifest itself across growing proficiency levels in
160 English as a foreign language?

161 We followed G&S's contingency conditions and methodology to trace
162 collocation transfer effects (CTEs) in the English ditransitive con-
163 struction in Turkish learners of English. The contingency conditions are
164 shown in Tables 6.1 and 6.2. Each condition had two verbs. In Table 6.1,
165 there are four possible grammatical outcomes: (1) the English item and
166 its corresponding Turkish item are both strongly attracted to the ditransi-
167 tive construction in each respective language; (2) the English and the
168 corresponding Turkish item are weakly attracted to the ditransitive con-
169 struction in each language; (3) the English item is strongly attracted to
170 the English ditransitive but the corresponding item is weakly attracted to
171 the Turkish ditransitive; and (4) the Turkish item is strongly attracted to

Table 6.1 Entrenchment in Turkish*English ditransitive, grammatical

Entrenchment (Grammatical)				t1.1
in Turkish	S+	S+	W+	t1.2
in English	S+	Give (ver)	Earn (kazan)	t1.3
	W+	Teach (öğret)	Supply (sağla)	t1.4
		Show (göster)	Write (yaz)	t1.5
		Tell (anlat)	Pay (öde)	t1.6
				t1.7

Table 6.2 Entrenchment in Turkish*English ditransitive, ungrammatical 12.1

Entrenchment (Ungrammatical)				12.2
in Turkish		S+	W+	12.3
in English	S-	Say (söyle)	Explain (açıkla)	12.4
		Do (yap)	Suggest (öner)	12.5
	W-	Set (kur)	Sell (sat)	12.6
		Take (getir)	Transfer (yolla)	12.7

the Turkish ditransitive but the corresponding item is weakly attracted to the English ditransitive. The notations S+, W+, S-, W- indicate strongly positive, weakly positive, strongly negative, and weakly negative attraction (for grammatical items)/repulsion (for ungrammatical items), respectively (see Tables 6.1 and 6.2). The Turkish equivalents of the items used in the experiments are given in brackets. 172-177

Similarly, in Table 6.2 there are four possible ungrammatical outcomes. It is important to note that the word *ungrammatical* here does not denote that the ‘item + construction’ combination is necessarily ungrammatical or cannot occur in natural language (see, for instance, **I giggled you* instead of *I made you giggle* in child language acquisition). Rather, it denotes the unconventionality of the ‘item + construction’ combination under question. These unconventional conditions are the following: (1) the Turkish item is strongly attracted to the Turkish ditransitive construction but the corresponding item is strongly repelled from the English ditransitive; (2) the Turkish item is weakly attracted to the Turkish ditransitive construction but the corresponding item is weakly repelled from the English ditransitive; (3) the Turkish item is strongly attracted to the Turkish ditransitive but the corresponding item is weakly repelled from the English ditransitive; and (4) the Turkish item is weakly attracted to the Turkish ditransitive but the corresponding item is strongly repelled from the English ditransitive. 178-193

Collostructional analysis on R (Gries, 2014) provides collostructional strength and we used collexeme analysis to measure the degree of attraction or repulsion of an item to the verbal slot. The collostructional strength cutoff was set to >1000 for weak and strongly positive items (2000 for strongly positive) and <500 for strongly and weakly negative items (100 for strongly negative). We extracted the English verbs from 194-199

200 the British National Corpus (BNC) and used the data from G&S. The
201 Turkish data were extracted from the Turkish Web Corpus (TrWaC),
202 which had a total of 32,791,491 words and 2,124,374 sentences. While
203 the two corpora do not match in terms of content, we justify the use of
204 TrWaC in two ways: (a) our participants were all between the ages of 18
205 and 30, all of whom surfed the Turkish internet, and (b) at the time of
206 the study the other corpora available lacked lemmatization, corpus query
207 language (CQL) search options, which can be utilized to look up specific
208 instances of language in a corpus, or had duplicates and would not work
209 reliably (see Gedik, 2023 for a similar problem). To ensure that the
210 Turkish equivalents did not contain polysemy and the Turkish-English
211 verbs matched, we recruited two native-speaking Turkish inter-coders
212 alongside the researchers. If three out of four coders disagreed on the
213 Turkish item, the item was discarded.

214 The current replication differs from G&S in using a different L1 and
215 the number of participants. G&S had recruited 140 students for their
216 study and the L1 of the participants was German. In this study, the L1 is
217 Turkish and the total number of participants was 106. Following G&S,
218 the experiment had four stages: collection of background data (profi-
219 ciency, age, education), acceptability judgment task 1, acceptability judg-
220 ment task 2, and translation task. In stage 1, the first judgment task was
221 the ditransitive construction occurring with verbs from each condition.
222 In stage 2, the second judgment task was the same verbs presented in the
223 to-dative construction to see if their judgment of ungrammatical items
224 would be preempted. In stage 3, the translation task (from Turkish into
225 English) was to ensure that the participants knew the English equivalents
226 of the Turkish verbs. After obtaining the frequency data from each corpus
227 and their collocational strengths, we created the experimental stimuli
228 (n=16). The stimuli always consisted of the third person singular and the
229 past simple. The parts to be judged were indicated with <> and were pre-
230 ceded by a contextual sentence. We also ran a one-way ANOVA to see
231 which stimuli would be statistically significant across proficiencies. The
232 data set met all the respective assumptions of the statistical tests. Due to
233 space-related issues, we only report the results of the first acceptability
234 judgment task.

3.1 Participants

235

The participants were recruited through snowball sampling and contacts. 236
 The experiment was prepared on Google Forms and was disseminated 237
 online through contacts who worked at English preparatory schools in 238
 Turkey (i.e., Atilim University, Middle East Technical University) to 239
 reach as many participants as possible. There were 43 participants of 240
 intermediate proficiency and 63 participants of high proficiency in 241
 English (n= 106, age= 18–30, mean age: 23.2) (i.e., C1 and C2). The 242
 preparatory schools of universities in Turkey are all obliged to share the 243
 same set of principles for determining the proficiency levels of the stu- 244
 dents as YÖK (the Council of Higher Education). Therefore, the profi- 245
 ciency levels were comparable even, though the participants were recruited 246
 from two different universities. The participants were between the ages of 247
 18 and 24 and there were 56 female participants. The participants filled 248
 out an online consent form before proceeding to the study, confirming 249
 that they were notified of the purpose of the study and they could with- 250
 draw from the study at any moment. Google Forms does not record 251
 unfinished responses; therefore, there were no missing data points. 252

4 Results

253

4.1 Overall Means of Acceptability

254

Figures 6.1 and 6.2 outline the general trends without including profi- 255
 ciency for the tested items from the first acceptability judgment task. In 256
 all of the figures in this section, TR stands for Turkish, ENG for English, 257
weak for weakly attracted items in grammatical figures and weakly 258
 repelled items in ungrammatical figures, *str* for strongly attracted items in 259
 grammatical and strongly repelled items in ungrammatical figures. 260
 Notations for the proficiency levels are MP → middle proficiency (B2) 261
 and HP → high proficiency (C1–C2). 262

As seen in Fig. 6.1, the grammatical items in the ditransitive seem to 263
 be judged rather correctly, with almost all conditions having a score 264

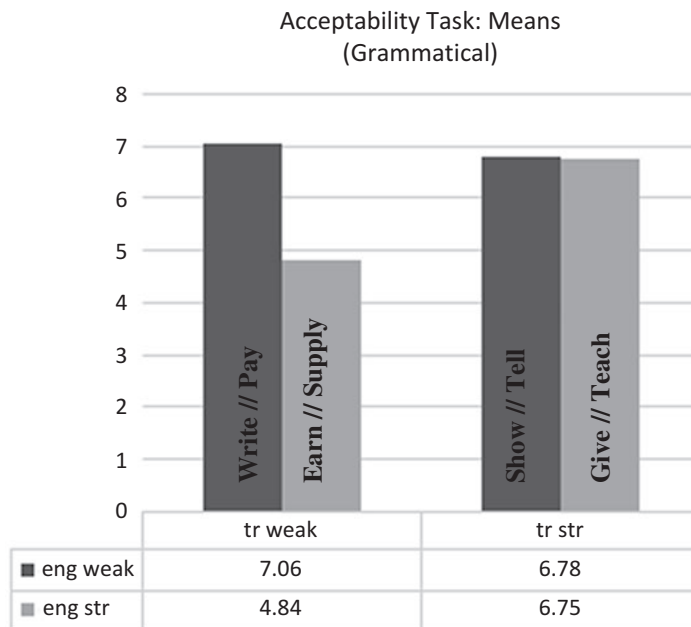


Fig. 6.1 Means of grammatical stimuli

265 higher than 6.7, except for TR WEAK*ENG STR (4.84). While it is dif-
 266 ficult to predict why the participants judged *earn* and *supply* in the English
 267 ditransitive considerably lower, one possible explanation may be that this
 268 was due to their low frequency in the ditransitive (see Herbst, 2018, p. 9)
 269 and that the participants may not have experienced the ‘item + construc-
 270 tion’ combination as often. What can be pointed out on the basis of these
 271 figures is that in the TR WEAK*ENG WEAK condition (7.06), the par-
 272 ticipants seemed to have attuned to the frequency of the stimuli in the L2
 273 as there would not have been guidance from a strongly entrenched item
 274 from the L1. What is also interesting is that the TR STR*ENG WEAK
 275 condition (6.78) does not show any relatively large differences in judg-
 276 ment scores in comparison to the TR STR*ENG STR condition (6.75).
 277 If it were the case, then it could have been possible to claim that strongly
 278 entrenched items from the L1 were transferred to the weakly entrenched
 279 items in the L2.

6 L1-L2 Transfer in Ditransitive Construction: A Usage-based...

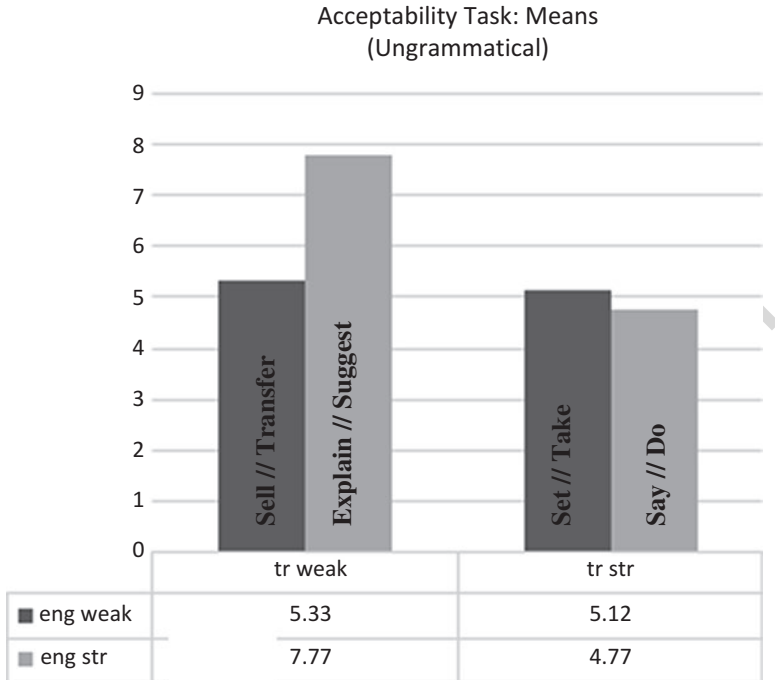


Fig. 6.2 Means of ungrammatical stimuli

Turning our attention to ungrammatical items in the English ditransitive, Fig. 6.2 displays the overall acceptability judgment scores given by the participants. The scores point to an overgeneralization and a possible CTE. Starting with the TR WEAK*ENG STR condition (7.77), it is possible to claim that the participants overgeneralized the use of *explain* and *suggest* and used them in the English ditransitive. There may have been some transfer effects of a weakly positively entrenched item from the L1 to the L2, although it is difficult to come to this assumption conclusively based on the available evidence. However, this may not be a robust analysis when we consider the TR STR*ENG WEAK condition (5.12). While it still demonstrates a relatively large number for judging *set* and *take* in the ditransitive, the transfer effects of the strongly positively entrenched items from the L1 to the L2 may not have been as large, otherwise, the judgment score would have been a lot higher. Thus, it is

294 possible to claim that there is suggestive evidence that the participants
 295 may have experienced CTEs for these stimuli, albeit to a small extent.
 296 Finally, the TR STR*ENG STR condition (4.77) also shows a relatively
 297 large judgment score for *say* and *do* in the ditransitive. This shows that (a)
 298 learners from a general perspective have overgeneralized the English
 299 ditransitive to the items that strongly repel it, and (b) the strongly
 300 entrenched items from the L1 may have affected the judgment of these
 301 items in the L2. However, it is difficult to detangle these two points from
 302 one another based on the scores we have from this study.

303 4.2 Proficiency

304 In this section, the results are analyzed based on proficiency. This will
 305 ensure capturing overgeneralizations, transfer effects, and preemption, if
 306 any. Figure 6.3 outlines the acceptability judgment scores observed for

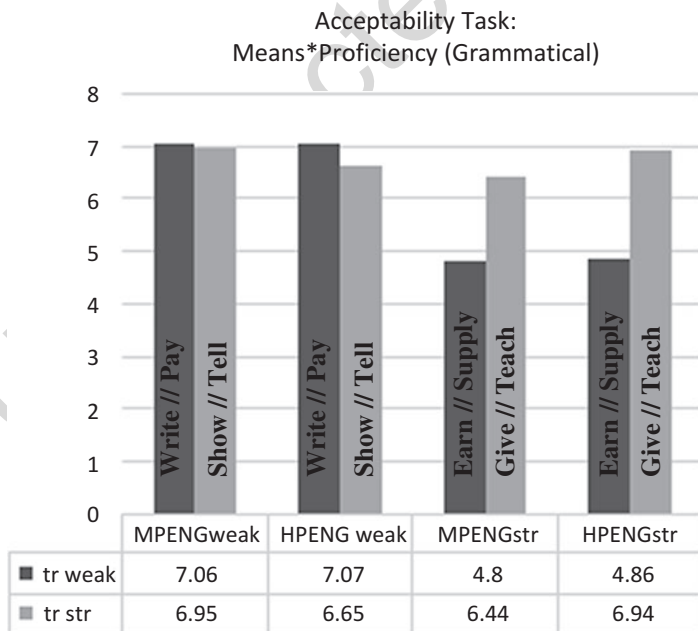


Fig. 6.3 Means of grammatical stimuli per proficiency

6 L1-L2 Transfer in Ditransitive Construction: A Usage-based...

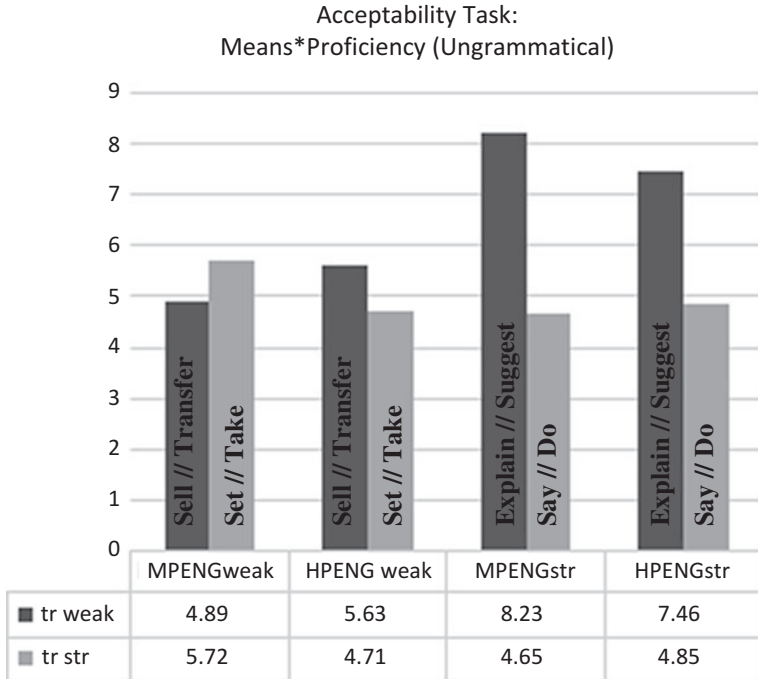


Fig. 6.4 Means of ungrammatical stimuli per proficiency

grammatical items in the English ditransitive. In Figs. 6.3 and 6.4, the notation MP stands for intermediate-level proficiency, and HP stands for high proficiency.

Starting with the left end of Fig. 6.3, there do not seem to be observable trends of differences in acceptability. Both participant groups from both proficiency levels seem to have attuned to the input in the L2 (see MP/HPENGweak*TR WEAK, 7.06 and 7.07, respectively). There also does not seem to be differences across proficiencies in acceptability judgment of strongly entrenched items in Turkish that are weakly entrenched in the English ditransitive (see MP/HPENGweak*TR STR, 6.95 and 6.65, respectively). However, the difference between the two levels, although statistically insignificant, may potentially suggest that with growing proficiency learners may become more sensitive to weakly entrenched items in the English

321 ditransitive and may not be affected by the corresponding strongly
322 entrenched L1 items in the same slot. Turning our attention to the
323 right end of Fig. 6.3, it is possible to observe some trends with growing
324 proficiency. Interestingly, the participants seemed to have judged
325 strongly entrenched items in the English ditransitive that are weakly
326 entrenched in Turkish indifferently (MP/HPENGstr*TR WEAK, 4.8
327 and 4.86, respectively). These items are *earn* and *supply*, as we briefly
328 discussed in the previous subsection. There do not seem to be any
329 CTEs in this condition. However, when we turn to the last condition
330 (MP/HPENGstr*TR STR, 6.44 and 6.94, respectively), it is possible
331 to see a growing judgment score with proficiency, which is naturally
332 predicted, because in a usage-based approach, more exposure (as a
333 result of growing proficiency) will result in better judgment of linguistic
334 stimuli. More experience with language will ideally result in better
335 judgment. Although the difference between the two proficiency levels
336 is not statistically significant, two possible interpretations can be
337 deduced, neither of which is intangible from the other: (a) the items in
338 this condition are highly frequent in the L2 input and that results in
339 higher judgment scores, and (b) strongly entrenched corresponding
340 items in the Turkish ditransitive may potentially serve as a boosting
341 factor for the scores in this condition.

342 Figure 6.4 displays the scores for the acceptability judgment task
343 for ungrammatical stimuli per proficiency. Starting with the right end
344 of the figure, a clear CTE is observable. With growing proficiency, the
345 learners judged weakly repelled items from the English ditransitive as
346 less grammatical (MP/HPENGweak*TR STR, 5.72 and 4.71, respectively).
347 However, this difference between proficiencies is not statistically
348 significant. Conversely, the participants judged weakly repelled
349 items in the English ditransitive that are weakly attracted to the
350 Turkish ditransitive to be more grammatical with growing proficiency
351 (MP/HPENGweak*TR WEAK, 4.89 and 5.63, respectively). It is not
352 clear as to why both conditions do not show the same trend. Ideally,
353 the CTEs would have been more observable in the first condition we
354 discussed because the corresponding L1 conditions are strongly
355 attracted, unlike the second condition where they are weakly attracted
356 to the Turkish ditransitive. One possible explanation for this may be

the effects of print exposure in the L2 and how it can lead to individual differences in vocabulary and grammar knowledge (see for instance Sparks, 2022, pp. 82–99). Another explanation might be a result of phonological memory, as heightened phonological encoding/decoding abilities in the L1 are known to influence L2 learning success (see Sparks, 2022). Turning our attention to the right end of Fig. 6.4, it is possible to see preemption and overgeneralizations at work, especially in comparison to the results from the left end of the figure. Although with growing proficiency learners judged strongly repelled items from the English ditransitive as less acceptable, the items still received very high acceptability scores (MP/HPENGstr*TR WEAK, 8.23 and 7.46, respectively, no statistical significance). As discussed earlier, there are two possible interpretations, but they are not possible to disentangle from one another: (a) learners overgeneralized the items *explain* and *suggest* and used these items unconventionally in the English ditransitive, or (b) the strong entrenchment of the corresponding items in the L1 may have inflated the scores, resulting in possible CTEs. Interestingly, learners judged strongly repelled items from the English ditransitive that are strongly attracted to the Turkish ditransitive, still grammatical with a slight increase with growing proficiency (MP/HPENGweak*TR STR, 4.65 and 4.85, respectively). The most conclusive evidence for the existence of potential CTEs from the L1 to the L2 comes from this condition. While it is possible to argue that the learners, even at very advanced levels, may have construed a misgeneralization about the items that occur in the English ditransitive, there is little to no incentive to think that this would be the case with the verbs *say* and *do*. Arguably, learners by the level of B2, C1, and C2 will have learned, both explicitly from their teachers and also implicitly from tallying the co-occurrence of the ditransitive construction and verbs, that these verbs are not attested in the ditransitive (**I said him the story*). While the misgeneralization argument still seems to hold, the argument of CTEs is more plausible for this condition. Another explanation is that they are not mutually exclusive and are at work with different levels of contribution to unconventional acceptability judgment rates.

392
393

4.3 Statistical Analyses of the Collostructional Contingencies

394 In this section, we present the results of MANOVA and ANOVA. The
395 data set met all the assumptions of both tests. With a MANOVA, the
396 statistically significant collostructional contingencies were determined
397 and the interactions between proficiency and conventionality were cap-
398 tured. Table 6.3 outlines the results of ANOVA. Asterisks indicate statis-
399 tical significance ($p < 0.05$). *Prof* is the notation for proficiency and
400 *conventionality* is the notation for acceptability/unacceptability.

401 Table 6.3 shows that while proficiency does not seem to display statis-
402 tically significant results in observing CTEs, acceptability of stimuli does.
403 All collostructional contingencies except TR WEAK*ENG WEAK were
404 found to be statistically significant. Similarly, multivariate tests (see ‘mul-
405 tivariate tests’ in appendix) also show a statistically significant result for
406 conventionality ($p= 0.000$) but not for proficiency ($p= 0.181$). When
407 taken together with the descriptive statistics (see ‘descriptive statistics’ in
408 appendix), TR STR*ENG STR shows a bias toward grammatical stimuli,
409 TR STR*ENG WEAK toward grammatical stimuli, and TR WEAK*ENG
410 STR toward ungrammatical stimuli.

411 This provides further insight for the discussions based on the means
412 of acceptability judgment scores. We had previously discussed that the
413 strongly entrenched items in Turkish may possibly boost judgment
414 scores of the strongly or weakly entrenched items in the L2. With the
415 design of the current study, it is difficult to interpret if it was CTEs or

Table 6.3 MANOVA results

Source	Dependent Variable	Type III Sum of Squares	Mean Square	F	Sig.	
prof	TRSTRENGSTR	1.557	1.557	0.183	0.669	t3.1
	TRSTRENGWEAK	28.505	28.505	3.085	0.080	t3.2
	TRWEAKENGWEAK	22.687	22.687	2.509	0.114	t3.3
	TRWEAKENGSTR	0.413	0.413	0.046	0.830	t3.4
conventionality	TRSTRENGSTR	352.326	352.326	41.509	*0.000	t3.5
	TRSTRENGWEAK	172.828	172.828	18.705	*0.000	t3.6
	TRWEAKENGWEAK	23.522	23.522	2.601	0.108	t3.7
	TRWEAKENGSTR	441.556	441.556	49.175	*0.000	t3.8

a mere attunement to the input in the L2 in TR STR*ENG STR. However, the other two contingencies provide more suggestive evidence in favor of CTE. For instance, TR WEAK*ENG STR shows that learners judged strongly repelled L2 items in the ditransitive acceptable even when they should have arguably judged them unacceptable. From a statistical analysis perspective, this is the clearest evidence in favor of a CTE argument.

A one-way ANOVA outlines item-specific tendencies and statistical results (see ‘descriptives for items’ and ‘ANOVA’ in appendix). *Sell* and *suggest* ($p = 0.57$, $p = 0.005$, respectively) were statistically significant ($p < 0.5$). While *sell* was judged more correctly with growing proficiency, *suggest* was judged less correctly at higher levels of proficiency. This shows that there are item-specific tendencies in L2 judgment scores, with some stimuli being judged correctly even at advanced levels.

5 Discussion 430

Based on the scores from the acceptability judgment task, we argue that there are two important issues: (a) we discovered that even at advanced levels learners still overgeneralize what items should occur in the verbal slot of the English ditransitive, and (b) this may be partially explained with the CTEs argument. Starting with the former point, the current study found that acceptability judgment scores of advanced-level Turkish learners of English show a tendency to overgeneralize strongly repelled English items to the verbal slot in the English ditransitive, that is, *explain*, *suggest*. Similarly, they showed this tendency for weakly repelled items, that is, *transfer*, *sell*. This shows that from a receptive knowledge point-of-view, even at advanced levels the conventionality of certain item-construction combinations may be forgotten because memory is lossy (Goldberg, 2019). Interestingly, although not reported here for space-related issues, the participants judged both grammatical and ungrammatical items in the English to-dative all correctly, meaning that they have an overall idea of item-specific requirements for the verbal slot in the English ditransitive. G&S also reported similar findings in their study. Our previous analyses of the other tasks presented at ASeFoLA22 provide

449 supporting evidence for the claims made based off of the acceptability
450 scores of the first judgment task. In addition to the second task, their
451 translation task also showed that in the ditransitive construction, they
452 used grammatical items with a 2.5-fold difference per million. How this
453 connects to the collocation transfer effects argument is when collocation
454 contingencies are taken into consideration. When the items
455 are weakly entrenched in English but the corresponding items are strongly
456 entrenched in Turkish, as discussed previously, this seems to increase the
457 judgment scores of the weakly entrenched items in the L2. If this were
458 not the case, the scores for the weakly entrenched L2 items would have
459 been a lot lower than what is reported here. Similarly, when L2 ditransitive
460 verbal slot items are weakly or strongly repelled, but strongly or
461 weakly attracted in the L1, learners' judgment scores seem to be affected
462 by the strong/weak attraction in the L1. This does not seem to manifest
463 itself in production, as the translation task, although not reported here,
464 shows that the learners could produce the English ditransitive, showing
465 sensitivity to the distributional properties of the items. That is, on average,
466 learners used strongly attracted items more often with the English
467 ditransitive and weakly attracted items more often with the to-dative.
468 They avoided using the strongly and weakly repelled items with the
469 ditransitive at all and preferred to use the to-dative. Importantly, learners
470 attuned to the input in the L2 when both contingencies were weak, suggesting
471 that they show sensitivity to distributional properties of items in
472 constructions. These findings also provide further evidence for the claim
473 that constructions exist at differing levels of granularity (Bybee, 2010)
474 because although participants demonstrated that they knew that the
475 unconventional items in the ditransitive were conventional in the to-
476 dative, they judged certain unconventional 'item + ditransitive' combinations
477 more acceptable.

478 The existence of this gradient CTE implies three issues. First, it shows
479 that psycholinguistically there may be suggestive evidence that collocations
480 from two languages or constructions similar in surface form
481 from various languages are stored together (Höder, 2012) but during
482 production, there may be different processes involved to make sure the
483 output sounds conventional, which cannot be disproven with the current
484 experiment. Second, CTEs, as discussed previously, are not binary

settings that turn off after a certain proficiency level. Rather, they manifest themselves in minute and gradient ways, that is, strongly attracted items to a specific construction in the L1 may affect the judgment of weakly attracted or strongly/weakly repelled corresponding items in the corresponding L2 construction even at advanced proficiency levels. Third, this translates into pedagogical implications.

While the discussion of the first point requires discussing many other subsequent research studies that are out of the scope of the current chapter, the other two points will be discussed in turn. Clearly, the existence of CTEs provides a further counter-argument for generativist linguistics. That is, language learning does not seem to have a destination but is a dynamic, ever-growing system, which explains such simple errors at advanced levels. Furthermore, generativist approaches assume that lexis and grammar (among other interfaces of language in the mind) must be stored and processed separately, that is, a modular structure. Similarly, these approaches tend to disregard the importance of experience or frequency in language learning. Although see Yang et al. (2017), who argue that speakers have an innate knowledge of grammar; however, linguistic experience may influence the late development of certain structures as the innate knowledge needs to be triggered by exposure first. Our findings here also provide further converging evidence in favor of usage-based approaches that embody a lexico-grammatical view of language, that is, that lexis and grammar go together.

Our findings converge with G&S, in that L1 learners seem to transfer the strongly entrenched combinations into the corresponding L2 construction and they do this in a frequency-sensitive manner even at advanced proficiency levels. Similarly, our control experiments (i.e., the second task and the translation task) both show that the learners are aware of what combinations are attested, but demonstrate CTEs receptively. One could arguably approach this phenomenon from a good-enough comprehension perspective. Good-enough comprehension is when speakers' lexico-grammatical representations are at times good-enough to complete the task but may not be accurate (Ferreira & Patson, 2007). This good-enough comprehension may be affected by a number of factors such as print exposure or individual differences in L1. Thus, when the speaker's acceptability judgment is not refined enough to judge

521 whether **I suggested you the book/*I explained you the book* are acceptable
522 or not, *diaconstructions*, constructions that are similar in form and mean-
523 ing across languages (Höder, 2012) may come into play to do good-
524 enough comprehension.

525 **5.1 Implications for SLA and Directions** 526 **for Future Studies**

527 From a pedagogical perspective, the results indicate that learners need to
528 recycle the profile of conventional and unconventional items in the target
529 language constructions to sound native-like, that is, conventional.
530 Furthermore, similar constructions in surface form between different lan-
531 guages may be stored together in the mind. Thus, pedagogically, learners
532 throughout their language-learning journey may benefit from covering
533 constructions that are similar in surface form and are shared across L1
534 and L2. To minimize CTEs, the students can be presented with a *collo-*
535 *profile* of the respective construction in the target language and can be
536 warned against items that may affect judgment in the L2 or may be trans-
537 ferred over to the L2. A collo-profile is a visual representation of what
538 items occur at what frequencies in a specific slot of a construction (Herbst,
539 2018). An example of a collo-profile for the English ditransitive can be
540 found [here](#). Although the extent and viability of integrating these steps in
541 foreign language classrooms will not be discussed here as it is out of the
542 scope of this chapter, teachers, teacher training programs, and foreign
543 language teaching materials can foster the recycling of conventional items
544 of overlooked constructions, that is, the ditransitive, by means of raising
545 awareness that such transfer effects exist, or teaching language teachers
546 how to teach these constructions explicitly to L2 learners, and by includ-
547 ing activities that can draw learners' attention to conventional items in
548 the target language construction.

549 This line of research is open for further development, especially in
550 regard to specifying what individual factors in L2 learners lead to such
551 lexically specific transfer effects. There is ample evidence that individual
552 differences in print exposure, education, age, and non-verbal IQ can lead
553 to individual differences in ultimate L1 (Dąbrowska, 2019) and L2

attainment (Dąbrowska, 2019; Sparks, 2022). The current study only used proficiency in L2 as a variable. While proficiency can account for exposure to the target language up to a certain extent, it does not necessarily indicate how much exposure there is in L1. Thus, one question for further research is whether print exposure in L1 would predict such transfer effects in the L2. Another question is if reading habits correlate positively or negatively with the number of transfer effects. This is because heightened reading habits increase metalinguistic awareness, which in the case of linguistic transfer may be helpful as speakers would be aware of conventional or unconventional combinations. With answers to these questions, it may become possible to further enhance the pedagogical implications of the current study. That is, one could argue that all foreign language classes would need to encourage students to read in their first and second language. Another potential implication is to see if explicit instruction would reduce the number of transfers, as explicit instruction may potentially compensate for the lack of metalinguistic awareness in students. Similarly, the role of non-verbal IQ may also be important for lexically specific transfer in argument structure constructions like the English or Turkish ditransitive. For instance, Dąbrowska (2019) reports that non-verbal IQ accounts for 21% of the variance in grammatical performance in the L1. As such, there may be an inverse correlation in which participants with higher non-verbal IQ scores experience fewer transfer effects, as non-verbal IQ modulates pattern recognition and analyzing visual information (such as metalinguistic cues or tallying how many times an item-construction combination has occurred together). Age might also be an important variable to look at. In the current and other studies (Gries & Stefanowitsch, 2003; Gedik, 2023), the participants were young, college students. Dąbrowska (2019) reports that for grammatical performance in L2 speakers, age was the best predictor, accounting for variance at 13%. Importantly, her participants were also from a more diverse age background. She explains the effects of age by suggesting that L2 structures may be much less entrenched and therefore are more subject to age-related decline. These are some of the possible variables that may shed more light on the phenomenon of linguistic transfer and how individual differences manifest themselves in such a phenomenon.

589

6 Conclusion

590 This study explored the existence of collostructional transfer effects in
591 Turkish learners of English in the ditransitive construction. We replicated
592 Goschler and Stefanowitsch's (2019) study on investigating whether
593 strongly entrenched L1 item + ditransitive construction combinations
594 would affect the judgment of the corresponding L2 item + ditransitive
595 construction. Using corpora, we found strongly/weakly attracted and
596 repelled corresponding items in the ditransitive construction in English
597 and Turkish. The participants completed an acceptability judgment task.
598 The results indicated that strongly entrenched items in Turkish affected
599 the acceptability of weakly entrenched or strongly/weakly repelled items
600 in English. The findings show that even at advanced levels, learners
601 showed overgeneralizations and collostructional transfer effects. However,
602 when both contingencies were weak, learners seemed to attune to the
603 input in L2. The study provides further evidence that lexis and grammar
604 are fused and that transfer effects are not binary settings but rather hap-
605 pen gradiently even at advanced proficiency levels. Pedagogically speak-
606 ing, recycling common, conventional item-construction combinations in
607 classrooms may be helpful.

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611

Appendix

612 Further descriptive statistics, and other statistics related to the ANOVA
613 can be found at https://docs.google.com/document/d/1CYzZwT-Eg0Lk_eFqkqmHOQF6ntiaJB3BxTWfhxp6a8r8/edit?usp=sharing
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