

Cross-linguistic Influence in Adult Second Language Learners: Dutch Quantitative Pronoun Constructions

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1. Introduction

One of the core aspects of human communication revolves around the choice of linguistic expressions for object identification, i.e. the use of full noun phrases – NPs – (*de bloemen*, ‘the flowers’) versus object pronouns (*ze*, ‘them’). Interestingly, in Dutch, if a quantity of flowers is expressed, the NP is no longer pronominalised into an object pronoun but instead a pronoun appears along with the remnant quantifier: the quantitative pronoun *er* (1).

- | | | | |
|-----|----------------------------|---|------------------------|
| (1) | <i>Ik zie acht bloemen</i> | → | <i>Ik pluk er vijf</i> |
| | I see eight flowers | | I pick er five |
| | ‘I see eight flowers’ | | ‘I pick five’ |

Like Catalan (*en*), French (*en*) and Italian (*ne*), Dutch is one of the few languages that possess this pronoun that is inherently linked to quantity. Recent work on *er* in L1 acquisition revealed that its production is relatively late in Dutch early child language; this holds both intra-linguistically when compared to the emergence of regular nominal ellipsis (Sleeman and Hulk, 2013) and to the emergence of homophonous types of *er* (Van Dijk and Coopmans, 2013; Berends, Hulk and Sleeman, 2016), and cross-linguistically when compared to the emergence of its French counterpart *en* (Berends et al., 2016; Van Hout, Veenstra and Berends, 2011; Gavarró et al., 2012).

To the best of our knowledge no study has examined adult L2 grammaticality judgements of morpho-syntactic sentence constructions with *er*. In the present study we intend to fill this gap in the literature and moreover combine it with a second line of inquiry, which is the cross-linguistic effect of (semantically similar but) syntactically different L1 sentence constructions on L2 acquisition.

The influence of cross-linguistic influence has been made explicit in the contrastive analysis hypothesis with the key point being made far back in the previous century by Lado (1957), who stated that the influence of L1 on L2 is enhanced when similar linguistic elements are present in both the native and the

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However, the syntactic **position** of the quantitative pronoun differs between these two languages: in Dutch main clauses *er* moves to a position post V_{fin} (4A), whereas in French *en* moves to a clitic position preceding V_{fin} (4B).

- (4) *Position of quantitative pronoun*
- | | | | |
|-----------|--|----------------|---------------|
| A: Dutch | <i>Ik pluk er_i vijf t_i</i> | I pick ER five | ‘I pick five’ |
| B: French | <i>J’en_i cueille cinq t_i</i> | I EN pick five | ‘I pick five’ |

Another disparity comes up if the remnant of an elided noun contains an **adjective**. In those constructions a quantitative pronoun can appear in French (5A) (Bouchard, 2002; Sleeman, 1996), but not in Dutch (5B) (Kranendonk, 2010; Sleeman, 1996). This disparity between the two languages comes from a difference in structural size of the constituent that the quantitative pronoun replaces in its underlying position within the noun phrase.¹ In Dutch, *er* can underlyingly be the complement of a quantifier but not of an adjective (Kranendonk, 2010), and in French, *en* can underlyingly be the complement of a quantifier and an adjective (Sleeman and Ihsane, *to appear*).

- (5) *Adjective in quantitative context*
- | | | | |
|-----------|-------------------------------------|---------------------------|-------------------------------|
| A: Dutch | <i>Ik heb *er vijf rode geplukt</i> | I have ER five red picked | ‘I have picked five red ones’ |
| B: French | <i>J’en ai cueilli cinq rouges</i> | I EN have picked five red | ‘I have picked five red ones’ |

We have compared French morpho-syntactic features in sentences with quantitative *en* with Dutch morpho-syntactic features in sentences with *er* and pointed out three conditions: (i) presence of *er*, (ii) position of *er*, and (iii) *er* with an adjective. We will now have a closer look at English morpho-syntactic counterparts of these Dutch sentences with *er* in different conditions.

4. English syntactic context

Unlike Dutch and French, English does not have a quantitative pronoun. This means that in some of the previous mentioned conditions the presence of the numeral suffices without any addition, compare (6A) and (6B) for **presence** and (7A) and (7B) for **position**.

¹ In standard Dutch *er* pronominalises nP and the adjective occupies a position within this nP, hence the incompatibility in case of pronominalisation (Kranendonk, 2010). In standard French *en* pronominalises NP and the adjective is outside of this NP, which makes it compatible with pronominalisation (Sleeman, 1996).

- (6) *Presence of quantitative pronoun*
 A: Dutch *Ik pluk er vijf* I pick ER five ‘I pick five’
*Ik pluk *Ø vijf*
 B: English I pick five
- (7) *Position of quantitative pronoun*
 A: Dutch *Ik pluk er_i vijf t_i* I pick ER five ‘I pick five’
 B: English I pick five

However, in the condition in which an adjective is added, English deviates from the previously mentioned conditions, as an additional element is required: *one*. See (8A) for Dutch and (8B) for English.

- (8) *Adjective in quantitative context*
 A: Dutch *Ik heb vijf rode geplukt*
*Ik heb *er vijf rode geplukt*
 I have (*ER) five red picked
 ‘I have picked five red ones’
 B: English I have picked five red ones

These examples show that *one* is needed in sentences in which an attributive adjective is present, but it can be left out in case no adjective is mentioned. In accordance with Llombart-Huesca (2002), we analyse *one* as Number, see also Kayne (2015) and Barbiers (2005).² However, other linguists consider *one* to be a pronoun (Panagiotidis, 2002, 2003; Schütze, 2001).

5. Predictions

In order to look at cross-linguistic influence in SLA, we described three morpho-syntactic environments in which Dutch, French and English sometimes share distributive properties and sometimes do not. Our Transfer Hypothesis declares that the acquisition of L2 constructions and constraints that are unknown in the L1 might be strenuous and that the acquisition of L2 may be facilitated in case the L1 features similar constructions and constraints. Based upon this statement we make different predictions per L1 group on the L2 target language, Dutch.

L1 French is expected to exert positive cross-linguistic influence in the ‘presence’ condition (exemplified in (3)) because of the shared distributive property between the L1 and the L2 that omitting the quantitative pronoun in a quantitative context is incorrect. In the other two conditions, ‘position’

² Kayne (2015) proposes that although it looks like a pronoun, *one* should be considered a complex determiner. In this theory *one* contains at least two subparts, namely a classifier and an indefinite article (*I pick a blue one*) and sometimes a third subpart being plural –s (*I pick five blue ones*). Barbiers (2005) also analyses *one* as Number and claims that this type of noun ellipsis is only possible with count nouns.

(exemplified in (4)) and ‘adjective’ (exemplified in (5)), L1 French is expected to exert negative cross-linguistic influence as *en* behaves differently from *er* in these conditions: in main clauses *en* precedes the V_{fin} , whereas *er* follows the V_{fin} , and *en* + adjective is legitimate while in Dutch *er* + adjective is considered ungrammatical.

L1 English is expected to exert negative cross-linguistic influence in the condition ‘presence’ (exemplified in (6)) and no prediction is made for the condition ‘position’ (exemplified in (7)). Both predictions arise from the non-existence of an English counterpart of *er*. That is, because English does not have such a pronoun we expect the L1 English group to do worse than the L1 Dutch group when looking at presence, but because of the same reason we cannot make a prediction about a preferred position of *er* by L1 English participants. In the other condition, ‘adjective’ (exemplified in (8)), L1 English is expected to provide positive cross-linguistic influence because of the lack of *er* in this condition, and because we assume *one* to not be a pronoun.

These predictions are summarised per language and per condition in Table (1).

Table 1. Predictions about cross-linguistic influence per language and per condition

	Language	Cross-linguistic influence
Presence <i>er</i>	L1 French	Positive
	L1 English	Negative
Position <i>er</i>	L1 French	Negative
	L1 English	No prediction
<i>er</i> + adjective	L1 French	Negative
	L1 English	Positive

6. Method

After our study received ethical approval by the University of Amsterdam Research Ethics Committee, participants were recruited in and around the city of Amsterdam through advertisements posted in several educational institutes, supermarkets, social media websites and through networks of relatives and friends. All participants were financially compensated. Participants with hearing problems and those with insufficient command of Dutch, initially only based on conversation, were excluded from the study. All participants signed a consent form. The final sample included 75 adults, divided over three groups: L1 French ($N = 25$), L1 English ($N = 25$) and L1 Dutch ($N = 25$). The L1 French and L1 English groups were required to have a minimum level of proficiency in Dutch, preferably $> B2$ according to the Common European Framework of Reference, however only a small subset of the participants had followed a formal language course that had provided them with this valuation. To ensure that all our participants met the $> B2$ criterion, we asked them for a self-assessment and we conducted a proficiency task before the actual experiment started. Table 2

provides descriptive statistics for the three groups in terms of mean age and years of exposure.

Table 2. Age and Years of Exposure of the participants

	Age Mean (SD)	Years of Exposure (SD)
L1 French (N = 25)	47; 0 (12)	22; 1 (11)
L1 English (N = 25)	48; 11 (12)	19; 7 (13)
L1 Dutch (N = 25)	32; 5 (15)	since birth

All participants participated in the same test battery, consisting of a grammaticality judgement task (GJT), a Dutch proficiency task (TDV), and a questionnaire specifically designed for this study. Through the questionnaire we collected (a) general information about the participant, (b) information regarding the participant's SES based on current occupation and highest completed level of education, and (c) linguistic information about the use of and exposure to the participants' L1, L2 (and if present their L3).

All participants were administered a computer-based version of a GJT, specifically designed for this study. GJTs are particularly suitable for measuring participants' command of a specific grammatical feature that might not be elicited easily in production and moreover, it provides information on both accurate (grammatical) and erroneous (ungrammatical) sentences. Our GJT comprised 30 pre-recorded audio sentence pairs, all of them including a correct preamble sentence that carried the antecedent and a certain quantity, sometimes in combination with an adjective, and a target sentence that contained a contrasting quantity and that was either accurately (N = 15) or erroneously (N = 15) modified by *er*. Sentence pairs belonged to one of the three aforementioned conditions: 'presence of *er*' (N = 10), 'position of *er*' (N = 10) and '*er* with an adjective' (N = 10). In the erroneous sentences belonging to the 'presence' condition, *er* was left out. In the erroneous sentences belonging to the 'position' condition, *er* was positioned in its object base position (stand-in for NP without having undergone movement).³ In the erroneous sentences belonging to the 'adjective' condition, *er* was combined with an attributive adjective. Additionally 15 pre-recorded sentence pairs that were designed similarly to the experimental trials were added as distractors and as a measure of validity of judgements regarding the experimental trials. The only difference being that the target sentences of the distractor trials were not correctly or incorrectly modified by *er* but by verb-second word order: in Dutch the placement of the finite verb

³ In these erroneous sentences *er* was not provided in pre V_{fin} position (as in French) but in sentence final position, thus in the incorrect post quantifier position. Reason for not applying the French structure is the violation of the verb second word order rule in Dutch; a phenomenon we expected all participants to master.

in root clauses can only be preceded by a single major constituent, generating the finite verb to always be placed in second position. See Table (3) for the design of the GJT.

Table 3. The conditions in the GJT

	Introduction	Target correct	Target incorrect
Presence	<i>Vorige week hebben jullie 3 films bekeken</i> Last week have you 3 films seen 'Last week you have seen 3 films'	<i>Deze week hebben wij er 4 bekeken</i> This week have we ER 4 seen 'This week we have seen 4'	<i>*Deze week hebben wij 4 bekeken</i> This week have we 4 seen 'This week we have seen 4'
Position	<i>Gisteren hebben wij 3 boeken gelezen</i> Yesterday have we 3 books read 'Yesterday we have read 3 books'	<i>Vandaag hebben jullie er 2 gelezen</i> Today have you ER 2 read 'Today you have read 2'	<i>*Vandaag hebben jullie 2 er gelezen</i> Today have you 2 ER read 'Today you have read 2'
Adjective	<i>Vorig jaar heb ik 5 grote cadeaus gekregen</i> Last year have I 5 big presents received 'Last year I have received 5 big presents'	<i>Dit jaar heb jij 5 kleine gekregen</i> This year have you 5 small received 'This year you have received 5 small ones'	<i>*Dit jaar heb jij er 5 kleine gekregen</i> This year have you ER 5 small received 'This year you have received 5 small ones'
Distractor	<i>In de schoorsteen heeft de vogel 200 takjes verzameld</i> In the chimney has the bird 200 sticks collected 'In the chimney the bird collected 200 sticks'	<i>Hij heeft daarmee een groot nest gebouwd</i> He has with it a big nest built 'He built a big nest with it'	<i>*Hij daarmee een groot nest heeft gebouwd</i> He with it a big nest has built 'He built a big nest with it'

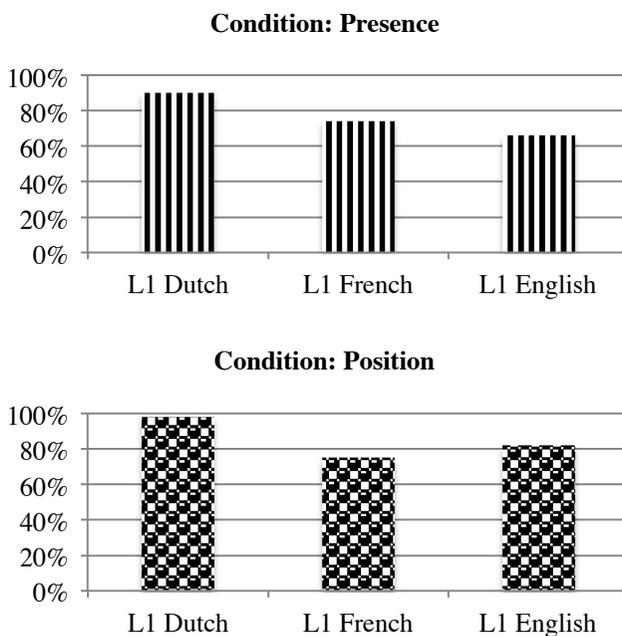
The sentence pairs had to be judged on grammaticality according to Dutch prescriptive grammar. Visual stimuli were not provided, only audio recordings. Participants sat in front of a 15.6" computer screen and made use of a keyboard with colour-coded buttons to indicate their judgements; red on the left for incorrect trials and green on the right for correct trials. After a judgement was given, the following sentence pair was initiated automatically. Before the experiment started there were two unrelated practice trials (without *er*) with feedback, initiated by the experimenter by pressing the space bar. No participants had to be discarded because they did not understand the practice trials. The test was programmed and run via E-Prime in order to automatically record response accuracy.

In addition to the GJT that is the object of this study, we used the Test of Dutch Vocabulary (TDV) as a measure of language proficiency in Dutch, the language of testing. The TDV is a computer-administrated, receptive multiple-

choice test that measures passive knowledge of vocabulary. Target vocabulary words ($N = 60$) were presented in a carrier sentence from which the meaning of the target word could not be deduced. Participants had five options to choose from, the last one always being ‘I really don’t know’. The target words were selected on the basis of frequency information from CELEX (Kerkman et al., 1995), and they gradually decreased in frequency. Originally the task was developed for speakers of Dutch as an L2 only (Hazenberg and Hulstijn, 1996), but after new low-frequency trials were added the test was suitable for native speakers too (Andringa, 2014). We made use of this latter variant so that all the participants could be administered the exact same experiments. For the purpose of this study, participants were assigned a score that corresponded to the number of correct answers, range 0-60, based on prescriptive meaning of the words in Dutch dictionaries. We also administered this task in E-Prime so that accuracy on each trial was automatically recorded.

7. Results

Statistical analyses were performed in R. We started by simplifying our dataset by combining accurate and erroneous trials per condition in such a way that a single score per participant could be given for each of the conditions. See Figure 1 for the means per condition and per L1 group.



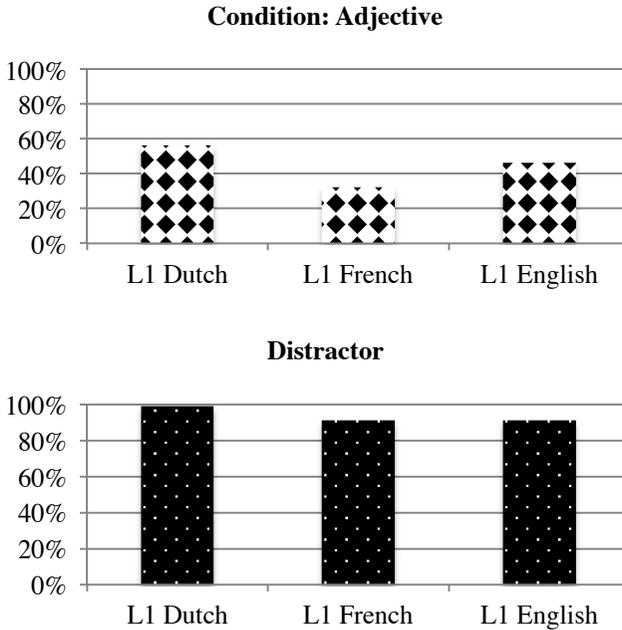


Figure 1. Graphical representation of the means per condition per L1 group

For comparing the results between the three language groups, we used ‘Fisher’s protected Least Significant Difference (LSD) method (Fisher, 1949). This involves two steps: (1): doing an omnibus analysis of variance, to test whether the omnibus null hypothesis ($\mu_1=\mu_2=\mu_3$), which claims that all L1 groups score equally, can be rejected. If this test yielded a p -value above 0.05, we would have declared that no significant differences between the means were found and we would not have proceeded with any further analyses. However, in all our three morpho-syntactic conditions the omnibus null-hypotheses could be rejected, allowing us to continue with step (2): performing three uncorrected t -tests between the groups ($\mu_1-\mu_2$, $\mu_1-\mu_3$, and $\mu_2-\mu_3$) in which each t -test that yields a p -value below 0.05 is declared to have given a significant result. No corrections need to be administered in this specific statistical method, as the LSD is protected by the omnibus ANOVA’s significance. Because we did not want any significant findings to be dependent on the participants’ proficiency of Dutch, we included proficiency – based on the scores of the TDV – as a dependent variable in our model. See Table (5) for the results from the omnibus analysis and the uncorrected t -tests: significance indicated by *** ($p < 0.001$), ** ($p < 0.01$), * ($p < 0.05$).

Table 4. Means per L1 group and per condition

	L1 Dutch	L1 French	L1 English
Presence (max.10)	9.04	7.44	6.56
Position (max.10)	9.84	7.48	8.24
Adjective (max.10)	5.56	3.20	4.56
Distractor (max.15)	14.84	13.68	13.60

Table 5. Results from the omnibus analysis and the uncorrected *t*-tests

	Presence	Position	Adjective	Distractor ⁴
ANOVA	0.00021 ***	6.32 e-06 ***	0.0098 **	0.0055 **
<i>t</i> -test du-fr	0.0258 *	3.68 e-05 ***	0.0028 **	0.0417 *
<i>t</i> -test du-en	0.0036 **	0.07018	0.2070	0.1638
<i>t</i> -test en-fr	0.320263	0.02004 *	0.09560	0.59523

As can be seen in the descriptive statistics provided in Table (4), the L1 Dutch group performs at ceiling in two out of three conditions: ‘position’ and ‘presence’, thereby showing that Dutch native speakers are in agreement with the Dutch prescriptive grammar that declares that *er* should be present in these types of sentences, and that it should be in a position following V_{fin} . However, judgements on the sentences in which *er* appears with an adjective appear much less clear-cut: the L1 Dutch group gives chance-level scores for this condition. The L1 English and L1 French group do not convincingly score at ceiling in any of the conditions, indicating that the conditions ‘position’ and ‘presence’ are less clear for them than for the L1 Dutch group. Moreover, both L1 English and L1 French score lowest on the ‘adjective’ condition.

To see whether the L1 groups differ significantly among each other, we turn to Table (5) that reveals the statistical analyses results: all omnibus ANOVA’s yield highly significant results, indicating the presence of significant differences between (some of) the means of the three L1-groups. Separate *t*-tests reveal that the L1 French group differs significantly from the L1 Dutch group on all conditions, while the L1 English group only significantly differs from the L1 French group on the ‘position’ condition and from the L1 Dutch group on the ‘presence’ condition.

8. Discussion

The aim of this study was to explore the influence that L1 has on L2 Dutch morpho-syntactic constructions with *er*. By including L1 French and L1 English, we addressed the role of cross-linguistic influence of properties belonging to quantitative constructions (sometimes in combination with an adjective) in the L1 of the participants. Based on these properties we formulated predictions per condition per language, which we discuss one-by-one in this section.

⁴ Also the distractor items yield a significant ANOVA and the *t*-tests reveal that the L1 French group differs significantly from the L1 Dutch group.

(1) For the ‘presence’ condition we predicted positive cross-linguistic influence in the L1 French group (because in both L1 and L2, omission of the quantitative pronoun is disallowed) and negative cross-linguistic influence for the L1 English group (because English does not feature an overt quantitative pronoun).

The positive cross-linguistic influence prediction regarding L1 French is not borne out as the L1 French scores are significantly lower than those of the L1 Dutch group. Apparently, it is not clear to the L1 French speakers that *er* needs to be present in Dutch quantified constructions without an adjective, despite the fact that a similar pronoun (*en*) is obligatorily present in French quantified constructions. This raises the question as to whether the L1 French speakers associate the Dutch quantificational pronoun *er* with the French quantificational pronoun *en* at all. Such ‘non-association’ may be due to the fact that in French and Dutch the pronoun is licensed under different conditions and that they occupy different syntactic positions. Moreover, besides the morpho-syntactic features that are analysed in this paper, there are also semantic and pragmatic factors, such as presuppositionality and definiteness, that influence the appearance of *er* in quantified constructions and that might have influenced the responses of the L1 French group.

In contrast, for L1 English the negative cross-linguistic influence prediction is borne out as the L1 English group scores significantly lower than the L1 Dutch group. This suggests that the absence of a quantitative pronoun in English indeed negatively influences the knowledge of obligatory presence of such a pronoun in L2 Dutch.

(2) For the ‘position’ condition we predicted that L1 French would negatively influence L2 Dutch (because *en* appears in a different syntactic position than *er*), while for L1 English no prediction was made.

The data show that the L1 French group judges sentences in this condition significantly more often in a non-target-like manner than the L1 Dutch group, despite the fact that the incorrect position does not follow French syntax: in the erroneous items *er* was placed in its basic object position (sister-of-V), without having undergone movement. This basic object position for the pronoun is incorrect in both Dutch and French. As a result, this finding cannot be exactly interpreted as evidence for direct (negative) cross-linguistic influence, but it could be the result of indirect negative influence. The L1 French speakers may reason that any position of *er* that is different from the position of French *en* is incorrect.

For L1 English we made no prediction in this condition because English does not feature a quantitative pronoun. Our results show that the L1 English group does not differ significantly from the L1 Dutch group, but does score significantly higher than the L1 French group. This suggests that existence of a similar element in the L1, but in a different position (such as French *en*), hinders L2 acquisition more than absence of a similar element.

(3) Our predictions for the ‘adjective’ condition (in which presence of *er* is prohibited according to prescriptive grammar) were as follows. Negative cross-

linguistic influence was expected for the L1 French group (because in French *en* must appear with an adjective). For the L1 English group we predicted positive transfer (because English does not have a quantitative pronoun).

The prediction regarding L1 French is confirmed as the L1 French speaking participants significantly more often accepted Dutch sentences with *er* plus an adjective (disallowed in Dutch) than the L1 Dutch speaking participants. In addition, they significantly more often rejected Dutch sentences without *er* plus an adjective (allowed in Dutch) than the L1 Dutch speaking participants.

As for the English L1 group, no differences with the L1 Dutch group were found. As this is a null results, it cannot strictly confirm our prediction that English L1 positively influences L2 Dutch acquisition in terms of this construction (Aberson, 2002). Nevertheless, it does show that there is no negative cross-linguistic influence from English to Dutch for quantificational constructions with an adjective. If the L1 English group had reached significantly higher scores than the L1 French group in this condition, this would have suggested positive cross-linguistic influence from English. However, this is not the case and therefore we should in theory stick to the conclusion that English L1 does not negatively influence the L2 Dutch acquisition of quantificational constructions with an adjective, were it not for the off target responses of the Dutch L1 group. That is, after examination of the scores of the L1 Dutch group in this condition, it becomes clear that native Dutch speakers do not unanimously judge the sentences with *er* plus an adjective as incorrect. Instead they behave quite different than what is expected based on the prescriptives of Dutch grammar: the L1 Dutch group scores at chance in this condition, meaning that they reject and accept sentences in which *er* co-occurs with an adjective an equal amount of times.

A possible explanation for this unexpected finding might be that Dutch is shifting towards a French structure. In section 3: (French syntactic context) we cited Kranendonk (2010) for Dutch and Sleeman (1996) for French about the size of the syntactic gap after pronominalisation has taken place. Kranendonk stated that Dutch *er* pronominalises a part of the DP internal structure that, when compared to Sleeman's analysis about French *en*, is larger, leaving no room for an adjective in the Dutch DP. However, if Dutch *er* is starting to behave more like French *en* in that it pronominalises a smaller part of the DP, this would leave room for an adjective within the Dutch DP. This might be already happening in some Dutch dialects in which *er* in combination with an adjective is possible (Kranendonk, 2010).

In summary, for the two language groups (L1 French and L1 English) we formulated five cross-linguistic predictions, divided over three conditions (presence, position and adjective). The three predictions anticipating negative cross-linguistic evidence were all borne out: L1 French negatively influences the L2 acquisition of Dutch quantitative constructions in the 'position' and 'adjective' conditions and L1 English negatively influences the L2 acquisition of Dutch quantitative constructions in the 'presence' condition.

Two predictions, both anticipating positive cross-linguistic influence, were not borne out: L1 French does not provide positive influence in the ‘presence’ condition and L1 English does not provide positive influence in the ‘adjective’ condition. In the ‘presence’ condition, the L1 French speakers scored significantly lower than the L1 Dutch group, despite the fact that both French and Dutch require the presence of an overt quantitative pronoun. Possible explanations include the different licensing conditions of *en* and *er*, the different syntactic positions of both pronouns, and the influence of semantic and pragmatic factors that are not taken into account in this study. As for the L1 English group in the ‘adjective’ condition, the null result could not confirm the prediction that L1 English would positively influence L2 Dutch, but did not reject the prediction either. Furthermore, we need to keep in mind that the L1 Dutch group did not perform at ceiling either, something that needs further investigation.

9. Conclusion

In this study we looked at cross-linguistic influence of L1 French and L1 English on judgements on morpho-syntactic constructions in L2 Dutch. Based on our Transfer Hypothesis we made five predictions, of which all three negative ones have been borne out, but two positive ones were not.

Overall we might conclude that negative cross-linguistic influence can be confirmed: hence, a morpho-syntactic difference between L1 and L2 will create difficulties in learning the target language. Nonetheless, our data does not give proof for positive cross-linguistic evidence, hence, when similar linguistic elements are present in both the native and the target language, this does not lead to enhanced scores on grammaticality judgements.

In future research, other factors belonging to the semantic and pragmatic domain need to be scrutinized, as there might be interplay between these domains and syntax. Also, more research is needed towards the combination of quantitative *er* with an adjective in Dutch; as our study brought to light an unexpected acceptance of, according to prescriptive grammar, wrong sentences.

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Proceedings of the 41st annual Boston University Conference on Language Development

edited by Maria LaMendola
and Jennifer Scott

Cascadilla Press Somerville, MA 2017

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ISSN 1080-692X

ISBN 978-1-57473-076-0 (2 volume set, paperback)

ISBN 978-1-57473-176-7 (2 volume set, library binding)

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