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The Persistence of L1 Patterns in SLA: Incidental Learning and the Boundary Crossing Constraint

Abstract

The present study analyses the influence of L1 patterns in the descriptions of motion events by Arab EFL learners. First we establish the differences in the construal of motion events by native speakers of Arabic and English (n=20 for each group). 12 prompts (cartoons) were used where a figure crosses a boundary in a certain manner (running, crawling etc.). In line with the literature (Talmy 1985, 1991, 2000a, 2000b and Slobin 1987 et passim), Arab native speakers avoid the use of manner of motion verbs in the description of these events in their first language and use simple path verbs (e.g. enter, go etc.), whereas speakers of English mostly use manner verbs. These deeply engrained differences between L1 and L2 are a learning challenge in SLA. The same prompts were used with two groups of Arab EFL learners (intermediate, n = 34; advanced, n = 30), who live in the UK. These learners follow the Arabic pattern in English. They use only simple path verbs and avoid the use of manner verbs in the description of the boundary crossings. As the learners do not produce ungrammatical sentences, they will not get negative feedback (e.g. from a teacher) and rely entirely on incidental learning from the input. However, despite the high frequency of these manner verbs in the daily input of the learners, they do not acquire the patterns of the target language even at a high proficiency level. This confirms results from earlier studies with different language pairs (e.g. Larrañaga et al. 2012). L1 patterns in the use of manner verbs with boundary crossings are persistent across proficiency levels in L2, and their influence cannot be overcome simply by exposure to the target language. Implicit learning in this context is hardly possible and explicit teaching and learning is needed to overcome the influence of the first language.

1. Introduction

Although frequency in the input often leads to the acquisition of L2 features, there are areas of SLA that seem to be resistant to frequency effects and incidental learning (for a discussion see Ellis 2002, Gass and Mackey 2002). The present study investigates the influence of deeply entrenched L1 structures (the boundary crossing constraint in Arabic) and the role of input frequency on the acquisition of target like structures in L2. The theoretical framework is the typology of Talmy (1985, 1991, 2000a, 2000b) and Slobin's framework on the construal of motion events (Slobin 1987 et passim). In Talmy's original framework, languages are classified into two groups: Satellite-framed languages (S-languages) and Verb-framed languages (V-languages). According to Slobin (2004), S-languages can easily encode the use of manner of motion verbs with boundary crossings (he ran into the room) since they can encode the direction of the movement in the satellite (into), whereas this use is not licenced in V-languages, such as French, Arabic and many others, where constructions such as "he entered the room running" or simply "he entered the room" are used. As a consequence, speakers of V-languages avoid the use of manner of motion verbs with boundary crossings in English because it is in conflict with their L1 patterns. Since this does not lead to ungrammatical utterances, generally no negative feedback is given, and to our knowledge no EFL course book discusses this language learning challenge. Incidental learning from input frequency is therefore the only possible way how the learners can acquire these structures. The present study compares the use of manner of motion verbs of 64 Arab EFL learners who live in the UK with two monolingual groups. We also take the frequencies of these verbs in the British National Corpus into account. Despite the frequent occurrence of manner of motion verbs in boundary crossings in English, the learners do not acquire these structures. We argue that the influence of the deeply entrenched L1 structures on SLA can only be overcome through explicit instruction and implicit learning does take place. These findings have clear implications for language teaching and learning as they show the limitations of implicit learning in certain contexts.

2. Literature Review

2.1. Incidental learning and input frequency

The present study investigates whether the target like use of manner of motion verbs in English can be acquired through incidental learning. The question is whether “it is possible for adults to learn linguistic regularities implicitly through exposure” (Kachinske, Osthus, Solovyeva and Long 2015: 391). Incidental language learning has been in the discussion for about 30 years (see Rebuschat 2015), mainly in first language acquisition research but increasingly also in SLA. However, the findings for incidental SLA are inclusive and it is not clear whether adults retain the ability to use incidental learning. In recent years, also the term “implicit statistical learning” has been used (Walk & Conway 2015: 191). We use this term in the present study because it combines the notion of incidental learning and input frequency. According to Ellis (2002), frequency effects can be found in all aspects of second language learning, e.g. in the acquisition of phonology, syntax and lexis. “Rules are structural regularities that emerge from learner’s lifetime analysis of the distributional characteristics of language input” (Ellis 2002: 144). The main argument here is not that language-specific innate structures are necessary to acquire language but that a usage-based approach of language acquisition is based on the frequency of the input. However, frequency is not the only factor and “moderating effects” (Ellis 2002: 147) also play a role in language acquisition. The question is what these moderating effects are and what the role of transfer from L1 with regard to learning from frequency in the input is. Gass and Mackey (2002) respond to Ellis (2002) and state that although frequency in the input certainly has an influence on language learning, there are other important factors, such as saliency, the perception of patterns (2002: 253) and transfer from L1 (2002: 256). Arabic, for example, does not have a copula and as a consequence Arabic learners of English might find it difficult to learn and use these forms in a consistent way. Another well-known example is the difficulties in acquiring indefinite and definite articles by learners of languages that do not have them, e.g. Chinese. Even Chinese learners at a high proficiency level in English struggle with the use of articles because they are lacking in Chinese and this cannot be overcome in many cases despite the high frequency of articles in the input (see for example Robertson 2000). According to Ellis (2015:12), “... years of input can fail to become intake (and) ... implicit tallying does not take place for low salient cues” (Ellis 2015: 12). In this context the notion of blocking is important. “Cues are present in the input but they are blocked from intake by learned attention” (Ellis 2015: 13). The reason is that “forms in the input must be ‘consciously’ noticed to serve as the basis of L2 acquisition” (Morgan-Short, Faretta-Stutenberg and Bartlett-Hsu 2015: 350). However, it is not clear under which circumstances “consciously noticing” takes place. Is input frequency enough to enable noticing that leads to intake on the basis of input or are other factors important that lead to “blocking”? Leow (2015: 50) argues that “cognitive constraints” prevent input to be converted into intake, but it is not clear what these constraints are. In the present study, we want to analyse whether L1 patterns can lead to these “cognitive constraints”.

The classical error analysis has differences between L1 and L2 as focus and can be used to give feedback on ungrammatical utterances of learners (see Richards 2015). However, if atypical but otherwise correct utterances in L2 are produced negative feedback is not given in

many cases and the learner relies solely on incidental learning. The mere fact that the correct structures are frequent in the input does not generally lead to the unlearning of ungrammatical or atypical L2 structures (see Gass and Mackey 2002: 255). The lack of negative evidence (e.g. correction by teachers) plays a crucial part in the discussion on implicit statistical learning. How is it possible without explicit feedback to infer from the input that certain structures are ungrammatical or atypical? Stefanowitsch (2008: 513) argues that “negative evidence can be inferred from the positive evidence in the linguistic input”. According to Stefanowitsch, learners compare the expected frequency of a verb with the actual frequency, and if, for example, this verb is never encountered in a transitive construction, the learner will assume that it is intransitive. Likewise, Boyd, Ackerman and Kutaz argue that “learners are able to infer constraints specifying how a word cannot be used by considering how it is used” (2012: 1). Again, input frequency plays a crucial role in this context. For example, the verbs “disappear” and “vanish” are both intransitive, but “disappear” is more frequent and therefore learners are much more sure that it cannot take an object. As a consequence, overgeneralisations in a learner’s language where these intransitive verbs take an object are much more frequent for “vanish” than for “disappear” (Boyd and Goldberg, 2011: 56). Thus, the frequency of correct input has an influence on the learners’ grammatical judgements without any negative evidence. The frequency of “disappear” as intransitive verb in the input “blocks” (Boyd and Goldberg, 2011: 61) its use as a transitive verb. This “blocking” is less effective with less frequent verbs, such as “vanish”. However, this does not explain, why certain ungrammatical structures do not appear at all even when there is no negative evidence. Boyd and Goldberg (2011) argue that statistical pre-emption explains this type of learning. When children hear new words (e.g. the non-existing verb “cham”) in certain constructions, e.g. “The cow is chaming (intransitive) and Ernie’s making the cow cham (periphrastic causative)” they are unlikely to use this verb in a transitive construction (Boyd and Goldberg 2011: 60). Thus, certain positive input is computed in an unconscious way to replace negative input and pre-empt the use of ungrammatical structures. One has to bear in mind that these examples are from children’s first language acquisition. However, there are also studies that confirm that preemption plays also a role in adults (Boyd et al. 2012).

2.2. Language Typology and Differences between L1 and L2

The typological framework of the present study is based on Talmy (1985, 1991, 2000a, 2000b) and Slobin's "thinking for speaking" (1987 et passim). Talmy's typology is based on different ways to describe motion events. Generally, a motion event consists of a *figure*, a *path*, a *ground or landmark* and the *motion* itself. In addition, a co-event, such as *manner of motion* and *cause of motion*, can be expressed. Talmy's typology makes a fundamental distinction between satellite-framed languages (S-languages) and verb-framed languages (V-languages). In S-languages such as English motion events can be described in a main verb and a satellite that indicates the path (e.g. "into"). It is easy in these languages to express the manner of motion in the main verb (e.g. "ran into"). Most European languages apart from the romance languages belong to this type. Romance languages are verb-framed languages where the path typically is expressed in the main verb and therefore manner needs to be expressed in a different way, e.g. in a subordinate construction, for example, in Spanish "entrar corriendo a/en" (enters running) (Larrañaga, Treffers-Daller, Tidball and Ortega, 2012: 124). This makes it more complicated to express manner of motion and therefore speakers of V-languages tend to express manner of motion less frequent (Slobin 2004). Özçalışkan and Slobin point out that there are no absolute rules but that it is about how "habitually" (2003: 259) speakers of different languages describe motion events. In a similar vein, Slobin argues that this is not a simple dichotomy but that languages can be ranked on a "cline of manner salience" and that "a number of factors contribute to the degree of salience of manner in languages" (2004:2). The picture is even more complex as satellite-framed patterns can be found in languages that are characterized as verb-framed, e.g. "Pierre s'est enfui de l'école" (Pierre ran away/ escaped from school; Kopecka 2006: 83). Some languages, such as Mandarin, do not seem to fit into the simple dichotomy and therefore a third category has been suggested, serial-verb languages where one verb expresses manner of motion and another verb the path, e.g. Mandarin: *feil chul* "fly exit" (Slobin 2004: 8). Many studies have English as one part of a language pair in their methodology and it is generally accepted that English is seen as a satellite-framed language (Özçalışkan and Slobin 2003, Slobin 2004, Alonso 2011, Gennari, Sloman, Malt and Fitch 2002). For Arabic there are fewer studies. According to Talmy (1985) and Slobin (2006: 62), Arabic is classified as verb-framed language. This also holds for Arabic varieties other than Standard Arabic. However, there seems to be a more complex situation. "Indeed, although Tunisian Arabic appears, as expected, to be strongly verb-framed, there are many other strategies which were not taken into account by Talmy's typology" (Saidi 2008: 202). Detailed studies of these alternative strategies in standard Arabic are not available. However, bearing the complexity of the typological distinctions in mind, we assume as working hypothesis in the present study that the two languages involved here, English and Arabic, can be classified as either satellite-framed or verb-framed.

2.3. The boundary crossing constraint

This notion goes back to Slobin and Hoiting (1994) but the concept was first mentioned under a different name by Aske (1989). Aske compares the use of manner of motion verbs in Spanish and English and comes to the conclusion that the distribution of path phrases is different in English and Spanish and that some constructions that are typical for English are not allowed in Spanish, e.g. “*ran into the house*”. He suggests that this is the case because these telic phrases predict an end-state and in this context no manner of motion verbs are allowed in Spanish, instead a construction such as “entered the house running” is possible. Slobin and Hoiting coined the term boundary crossing constraint for V-languages. A more general version of this constraint is the notion “change of state generally” (Slobin 1997: 441), where not only movements but general changes of state, i.e. “*he kicked the door shut*” are not licensed in V-languages. Instead, constructions such as “*he shut the door by kicking*”, are used (see also Talmy 1991). In the context of the present study we use the term “boundary constraint” because our data consist of movement descriptions only. To our knowledge, there is only one study that includes boundary crossing events with Arabic speakers (von Stutterheim, Bouhaouos and Carroll, 2017). They found that “manner verbs do not combine with forms expressing a boundary crossing” (2017: 245) for Standard Arabic and for Tunisian Arabic. The literature also shows that there seems to be exceptions to the boundary crossing constraint for a variety of languages. Slobin (1997: 456) observes that manner of motion verbs are allowed in some V-languages in certain contexts, e.g. “he jumped from the branches” is possible in Portuguese. He argues (Slobin 2004: 7) that “verbs that encode particular forces that are more like punctual acts than activities, such as equivalents of ‘throw oneself’ and ‘plunge’” might be an exception from the general constraint. In a similar vein, Naigles, Eisenberg, Kako, Highter and McGraw (1998) found that speakers of Spanish can use “jump” or “slide” when a figure jumps or slides into a pool. They conclude that “perhaps a boundary crossing that is only the byproduct of one’s exertion, and not the original goal, is not viewed as a true boundary crossing (1998: 453).” With other words, the actor initiated the movement but after that the boundary crossing as such was out of his/her control and merely as result of gravity. Another possible explanation is that these events consist of a horizontal rather than a vertical motion (Naigles et al. 1998). These are of course speculative explanations, but it shows that the boundary crossing constraint is a complex issue and not just a simple dichotomy. It is beyond the scope of the present study to investigate the exceptional character of these specific boundary crossings in detail but we include a picture with a figure that plunges into a pool and a figure that falls into a net in our data collection (see Appendix). One study which includes the notion of statistical learning with regard to the boundary crossing constraint is Treffers-Daller and Calude (2015). They found that adult learners of French with English as L1 are sensitive towards the frequency of motion verbs in the input and that their use of target like structures increases with higher proficiency, but that the learners at all levels fail to acquire the boundary crossing constraint in French because of lack of negative evidence. The English sentence “John runs into the house” is not the equivalent of the French sentence “Jean court dans la maison”. The latter sentence means that John/Jean runs around inside the house because French does not licence manner of motion verbs with boundary crossings (Treffers-Daller and Calude 2015: 607). The learners in

Treffers-Daller and Calude's study fail to acquire the boundary crossing constraint in French even if it is frequent in the input. Another study with English learners of Spanish (Larrañaga et al, 2012) shows a similar picture where the learners do not acquire the boundary crossing constraint in Spanish even at a higher proficiency level. This is contrast to the findings of Cadierno and Ruiz (2006) who found that L1 plays only a limited role in advanced second language acquisition. The studies mentioned above are quite the reverse situation to our study as these learners of French or Spanish fail to acquire a constraint of the target language because they do not have this constraint in their L1, whereas our learners need to unlearn a constraint from L1 if they use the target language. One can assume that this is an even more challenging learning task since the learners in the present study produce grammatically correct sentences in the target language and are therefore very unlikely to receive negative feedback, whereas feedback in the case of English learners of Spanish or French is more likely as they produce sentences that have a different meaning than intended. The main question is whether our learners can learn the target like structures from input frequency without feedback and whether incidental statistical learning takes place with increasing proficiency.

3. Research questions and hypotheses

3.1. Research questions

1. Are there significant differences in the use of manner verbs in the description of boundary crossings between native speakers of Arabic and English?
2. Are there exceptions from the boundary constraint in Arabic that are similar to that in other languages, e.g. uncontrolled movement that are seen as "punctual acts" such as jumping?
3. Which factors influence the learnability of manner verbs with boundary by Arab learners of English?
4. What role does input frequency and "incidental statistical learning" play in the acquisition of manner verbs expressing a boundary crossing?

Research questions 1 and 2 refer to the exact differences between L1 and L2 for our learners and need to be answered to identify the potential learning burden. Research questions 3 and 4 ask whether and how this learning challenge can be overcome. On the basis of these questions we state the following hypotheses.

3.2. Hypotheses

1. Arab native speakers use significantly fewer manner verbs in Arabic than native speakers of English in the description of boundary crossings.
2. There are exceptions from this pattern where Arabic speakers can use manner of motion verbs in Arabic with uncontrolled acts or punctual movements.

3. Arab EFL learners use significantly fewer manner verbs in the description of boundary crossings than English native speakers. Instead they use simple path verbs or avoid the description of the boundary crossing at all.
4. The proficiency level of the learners has no influence on the learning of manner verbs with boundary crossing.
5. Input frequency is not a significant factor for learning the use of manner verbs with boundary crossings.
6. As a consequence incidental statistical learning does not take place for these structures.

4. Methodology

4.1. Participants

The participants in the present study are two groups of EFL learners and two control groups of native speakers of English and Arabic respectively. The mean age of the English native speakers ($n = 20$) is 19.5 (4 males, 16 females), that of the Arabic native speakers ($n = 20$) is 31.6 (1 male, 19 females). The first group of EFL learners consists of 34 participants in a pre-session course at a British university (mean age = 28.38; 19 males, 15 females). They are on an intermediate to upper intermediate level with IELTS scores ranging from 4.5 to 6.0. The second learner group are 30 postgraduates at an advanced level with IELTS scores ranging from 6.5 to 8.5. Their mean age is 31.6 (9 males, 21 females). The imbalance in the gender distribution is partly due to the fact that monolingual Arabic speakers with limited contact to English are mainly found in the female Arabic population in the UK. As both learner groups live in the UK they will certainly have encountered the use of manner verbs in boundary crossing in the input in their daily contact. However, this is not explicitly taught and a contrastive analysis between the two languages is not part of their curriculum. Teachers normally give no negative feedback when the learners use correct structures, e.g. “he went into the house”, where native speakers would say “he ran into the house” when a running figure is shown on a picture. Any learning of these structures must have taken place in an implicit way.

4.2. Measures

The material used was a free description task where participants were supposed to describe 12 pictures with boundary-crossing events. The task was implemented by Cadierno (2010) and Özçalışkan (2013). The boundary-crossing events were of three types: 4 pictures depict a movement INTO a bounded space (e.g. *running into the house*), 4 pictures show a movement OUT OF a bounded space (e.g. *flying out of the cylinder*), and in the last 4 pictures the displacement is OVER a line or plane (e.g. *crawling over a carpet*). This particular material has been used because both, manner and path components are salient in the pictures. A list of the figures with the different motion events is given below (see also appendix).

1. Figure running into a house
2. Figure flying out of a cylinder
3. Figure crawling over a carpet
4. Figure diving into a pool
5. Figure dashing out of a house
6. Figure flipping over a beam
7. Figure tumbling into a net
8. Figure creeping out of a house
9. Figure leaping over a hurdle

10. Figure crawling into a house
11. Figure sneaking out of a pot
12. Figure jumping over a cliff

4.3. Procedure

The pictures were presented to the participants in the order found in the list above. The participants were first introduced to the cartoon character Adam and then were asked to write a few sentences to describe what Adam is doing. The words for the landmarks in the pictures such as *house*, *pot* and *carpet* were provided and the learners were advised to use these words. The advanced Arab EFL learners and Arabic native speakers were met individually. The intermediate Arab EFL learners and English native speakers completed the task in a class setting. It took the participants 10 to 20 minutes to finish the task. The participants also filled in a background questionnaire prior to the task.

5. Data Analysis

In a first step, we analysed the 12 motion event construals according to an adaptation of the classification of Cadierno (2010) and Özçalışkan (2013) and put them into 6 different categories. An overview is given in Table 1.

Table 1

Event construal patterns

Category	example
1. Manner verb + satellite	Ran into
2. Neutral verb + satellite	Go out
3. Neutral verb + manner adjunct Manner verb + neutral verb	Go into the class running Run and go into
4. Path verbs	Enter/ exit
5. Path verbs + manner adjunct or manner verb + path verb	Enter xxx running Run and enter
6. No boundary crossing or implicit boundary crossing	Go away from the carpet

In order to find out whether native speakers of Arabic and English have different preferences for the 12 events a comparison between these two groups was made on the basis of the 6 categories listed in table 1. Because some of the categories have low frequencies, an analysis with a Chi² test would not have been appropriate. We therefore opted for the Fisher exact test. The test (“exact command” in SPSS with Monte Carlo option) produces for tables larger than 2x2 p-values based on the tests statistics of the Fisher-Freeman-Halton test, which is an extension of the original Fisher-exact test for larger tables. The results are given in Table 2.

Table 2

A comparison between the event construal by Arabic (n = 20) and English (n = 20) native speakers

Event	Value test statistics	p-value	Effect size (Cramers’s V)
Event 1	36.998	< .001	.915
Event 2	30.857	< .001	.860
Event 3	29.260	< .001	.810
Event 4	Ns		
Event 5	44.252	< .001	.975
Event 6	Ns		
Event 7	Ns		
Event 8	39.065	< .001	.916
Event 9	Ns		
Event 10	36.108	< .001	.903

Event 11	29.957	< .001	.853
Event 12	10.035	< .01	.503

For four events, there is no significant difference between the two native speaker groups. For event 4 and 9 both groups use mainly manner verbs (event 4: NE: 20; NA: 18 manner verbs; event 9: NE: 18, NA: 16 manner verbs), for event 6 both groups avoid the boundary crossing (NE: 13; NA: 10 instances of avoidance) and for event 7 both groups mainly use simple path constructions (NE: 10; NA: 12). Event 4 describes a figure that dives into a pool, which will be discussed later. One event (number 6) was probably difficult to interpret. Some participants said the figure was dancing and they probably did not see a boundary crossing there. For all other events, the differences between the two native speaker groups are significant with a large effect size (Cramer's $V > .5$; see Cohen 1988). For the further analysis, the events with non-significant differences are excluded because they either are not a clear prompt for a border crossing (e.g. event 6) or pose no learning burden for EFL learners as there is no difference in the event construal between L1 and L2. For the other events, a detailed overview of the preferred event construal is given in Table 3.

Table 3

Preferred event construal by native speakers (number in bracket = mode based on the categorisation in Table 1)

event	Preferred construal Native Speaker of English	Preferred construal Native Speaker of Arabic
1	Manner verb + satellite (18)	Avoidance or implicit boundary crossing (9)
2	Manner verb + satellite (20)	Path verbs + manner verb or manner adjunct (9)
3	Manner verb + satellite (14)	Avoidance or implicit boundary crossing (11)
5	Manner verb + satellite (19)	Path verbs + manner verb or manner adjunct (13)
8	Manner verb + satellite (18)	Path verbs + manner verb or manner adjunct (18)
10	Manner verb + satellite (19)	Path verbs + manner verb or manner adjunct (11)
11	Manner verb + satellite (17)	Simple path verb (13)
12	Manner verb + satellite (19)	Path verbs + manner verb or manner adjunct (6)

This means that the native speakers of English consistently use manner verbs + a satellite (e.g. run into), whereas the native speakers of Arabic either avoid the description of the boundary crossing or use path verbs with or without adjunct (run and enter, enter running), e.g:

daXala Adam i:la l-bait raki:Dan

entered Adam to the house running

Adam entered the house running

The further analysis focuses on the EFL learners and we conflate the 6 categories used so far into a simple dichotomy: manner verb with satellite versus other event construal. Table 4 gives an overview over the number of event construals with a manner of motion verb or alternative construals for the four groups of participants. We excluded the events from this computation where there is no significant difference between the event construals by native speakers.

Table 4

Event construal with manner of motion verbs and alternative construals

Event	Native speakers of English		Advanced Learners		Intermediate Learners		Native speakers of Arabic	
	Manner verb	other	Manner verb	Other	Manner verb	other	Manner verb	other
1	18	2	5	25	3	31	0	20
2	20	0	13	17	14	20	3	17
3	14	6	10	20	3	31	0	20
5	19	1	13	17	9	25	0	20
8	18	2	20	10	11	23	1	19
10	19	1	14	16	7	27	1	19
11	17	3	7	23	7	27	2	18
12	19	1	22	8	22	12	11	9

As mentioned before, there is a clear pattern where the use of manner verbs is preferred by native speakers of English and the use of other event construals by native speakers of Arabic. The patterns used by the learners lie between the preference patterns of the native groups. Figure 1 visualises the preferred patterns of the four groups.

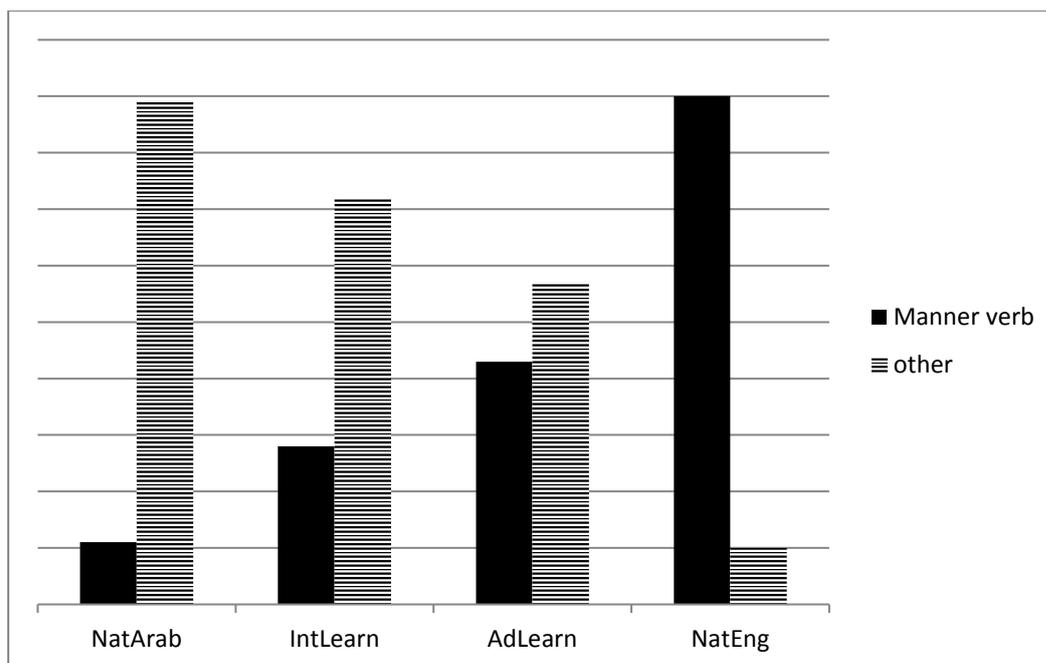


Figure 1

Preferred event construals by the four groups (percentages)

Overall, the differences between the four groups are significant (Fisher exact = 2156.976, $p < .001$, Cramer's $V = 1.0$). Again we used the "exact" command (Monte Carlo option) in SPSS, which produces the value for the Fisher-Freeman-Halton test for tables larger than 2×2 . All differences between the individual groups are also highly significant at the .001 level (Native speakers of English/ Advanced Learners: Fisher exact = 519.466; Advanced Learner/ Intermediate Learners: Fisher exact = 686.824; Intermediate Learners/ Native speakers of Arabic: Fisher exact = 550.523). Figure 1 indicates a learning process, where learners at a lower level start with event construals that are closer to the Arabic native patterns, and where with increasing proficiency more constructions are used that come closer to the English native-like pattern without reaching the native-like level totally. As explicit teaching of these structures does not take place, only the learning difficulty of the patterns and the possible frequency of these structures in the input can explain this learning process or the lack of it. The magnitude of the learning difficulty can be described by the differences between the two native speaker groups. This is an indication on how deeply entrenched these structures are in the L1. As an indication of the possible frequency of the structures in the input we use frequency data from the British National Corpus (BNC). We used three predictor variables: native Arabic use, native English use, and the data from the BNC in two multiple regressions, and as dependent variable the actual use by the intermediate and by the advanced learner groups. The results are given in Table 5.

Table 5

Predicting the use of manner verbs with boundary crossings (multiple regressions, method “enter”)

Dependent variable	Anova	Explained Variance (R ²)	Predictor variables	Standardized Beta	Sig
Use of manner verbs with boundary crossing by	F (3, 16) = 41.342 p < .001	.864	NativeE	.416	t = 4.511, p < .001
			NativeA	.734	t = 8.171, p < .001
			BNC	-.067	t = -.753, p = .462
Advanced Learners	F (3, 16) = 19.001 p < .001	.740	NativeE	.714	t = 5.586, p < .001
			NativeA	.374	t = 3.003, p < .01
			BNC	-.117	t = -.948, p = .357

Multicollinearity is not a problem as in both cases the value for Tolerance is greater than .2 and the Variance Inflation Factor is smaller than 10 (see Field, 2005: 175). Only the native Arabic and the native English patterns are significant in both models and the frequency based on the BNC does not predict the patterns used by the learners.

6. Discussion and Conclusions

In the present study, we set out to test differences in motion event construals with boundary crossings for two typological different languages, English as a typical Satellite-framed language and Arabic as a typical Verb-framed language. In line with expectations, native speaker of Arabic use either simple path verbs for these events or avoid the description of the boundary crossing whereas native speaker of English typically use manner verbs for the description of these events. This confirms hypothesis 1 which states that Arab speakers use significantly fewer manner verbs with boundary crossing in their L1. Our findings give support to Slobin’s (2004) conclusion on thinking-for-speaking patterns found in depicting boundary-crossing motion events across S-languages and V-languages. In line with the

literature and with research hypothesis 2 this does not hold for all events in the present study but is a clear, statistically significant tendency for the native speakers. This supports the revised typology of Beavers, Levin and Wei-Tham (2010), who show that in many languages both V-framed and S-framed patterns occur, but that languages differ in the extent to which these patterns can be found. As shown in the present study, languages show clear tendencies but no exceptionless rules. However, a more fine-grained picture of these tendencies can be drawn through the analysis of event 4 and 7. In picture 4 a figure is plunging into a pool, in figure 7 a figure is falling into a net. For event 4 both native speaker groups use mainly manner verbs, and for event 7 both groups use mainly use the simple path verb “fall”. This is in line with similar event construals for Portuguese (Slobin 1997, 2004) and Spanish (Naigles et al. 1998). There seems to be a universal rule for speakers of different V-languages that manner verbs are licensed in these contexts. Naigles et al. (1998) give as possible explanation the fact that the actor only initiates the act and that the actual boundary crossing is out of his/her control. However, in our case (figure 4) the figure clearly plunges into the pool on purpose and the boundary crossing is clearly intended. We are therefore inclined to follow Slobin’s explanation that a border crossing in a punctual act might be the reason for this exception. Further research is needed here with similar punctual acts in a horizontal direction in order to get further insights into this pattern of exceptions across languages.

Hypothesis 3 which states that Arab EFL learners will use less manner verbs with boundary crossings in English than English native speakers is also supported by our findings. Hypothesis 4 which states that this holds for different proficiency levels is corroborated as both learner groups, the intermediate and the advanced learners use fewer manner verbs in this context than English native speakers. There are, however, some indications that learning took place as the advanced learners use more manner verbs than the intermediate learners but both groups are significantly different from the native speakers. Therefore, it can be assumed that the difficulty in acquiring the use of manner verbs with boundary-crossings is not limited to intermediate Arab learners but remains persistent in advanced learners. This result is similar to the results of Larrañaga et al. (2012). One has to bear in mind that the advanced learners are at a highly proficient level with IELTS scores above 6.5 and both learner groups live in the UK. This is an indication that the L1 patterns in the description of boundary crossings cannot be overcome simply by exposure to L2. This supports hypothesis 5 which assumes that input frequency is not a significant factor for learning the use of manner verbs with boundary crossings. Two multiple regressions also support this conclusion. The only

significant variables that predict the use or the lack of use of manner verbs are the preferences of the two languages involved. Frequency of the potential input as measured with data from the BNC is not significant in these regression models. The high explained variance (R^2) in the dependent variable solely on the basis of native Arabic and native English patterns shows how deeply ingrained these patterns are which supports earlier findings for other language pairs (Treffers-Daller and Calude, 2015). Therefore hypothesis 6 which states that incidental statistical learning based on frequencies is not possible for the patterns under discussion is corroborated. Teacher feedback would be necessary to acquire these structures. This negative feedback is, however, normally not given as the learners produce grammatically correct structures albeit different from the preferences of the target language. The findings of the present study are not only relevant from a linguistic viewpoint but also have clear pedagogical implication for the development of teaching programmes beyond English as a Foreign Language. These programmes cannot take every difference between L1 and L2 into account. However, this would be possible for the use of manner of motion verbs in boundary crossings as this is a universal phenomenon and applies to many learners.

6. References

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