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# Comparative Error Gravity: Toward a Cross Linguistic Theory

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## Comparative Error Gravity: Toward a Cross Linguistic Theory

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### Abstract

Negative transfer is a difficulty for Arabic-speaking students of English. This study juxtaposes eight categories of Arabic-to-English transfer errors with equivalent and near-equivalent errors in Arabic. It compares their error gravity as rated by teachers and students to discover whether there are any differences between teacher and student perceptions that might inform teaching practices. It is also the first step toward a cross-linguistic theory of comparative error gravity based on the functional equivalence approach to translation. It finds that teachers tend to perceive grammatical errors as graver than mechanical or lexical errors, with most differences in perception appearing to stem from cultural background. Among students, there is very little consensus, in line with previous studies. This study concludes that teachers and students might benefit from a better understanding of both their own tendencies in perceiving errors and those of the other party in the learning process. It also recommends the development of a full-fledged theory for moving between languages for the purpose of studying error gravity comparatively in languages other than Arabic.

*Keywords:* Arabic, comparative linguistics, English language teaching, error gravity, ESL/EFL

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## Introduction

There are two broad errors into which students can fall in English. One is developmental and stems from the built-in difficulties of the language itself (e.g., using a form like *\*eated* instead of *ate*). The other is transfer, or when, as Lado (1957) first described it, forms and meanings of a first language are applied to English in a way that does not quite work. When that first language is very different from English, the odds of negative transfer rise (Lennon, 2008). For Arabic-speaking students, negative transfer is no small problem.

The topic of this study is error gravity in English and Arabic. Arabic-to-English transfer errors are juxtaposed with equivalent and near-equivalent errors in Arabic in an attempt to discover whether there are any differences in the way they are perceived by teachers versus Arabic-speaking students. Its goal is the same for both groups: to sensitize the one to how errors are perceived by the other.

## Literature Review

Arabic-speaking students face unique difficulties in learning English, from spelling to discourse, resulting in a great deal of negative transfer (Grami & Alzughairi, 2012; Muftah & Rafik-Galea, 2013; Hassan, 2014; Sabbah, 2015; Albalawi, 2016; etc.). Deacon (2015), for instance, demonstrates that they make more spelling errors in English than do speakers of other languages. Thompson-Panos and Thomas-Ruzic (1983) blame this propensity in part on the fact that short vowels are not normally written in Arabic due to their relatively low functional load, resulting in a phenomenon that Ryan and Meara (1991) dub “vowel blindness” (p. 24). Mohamed and Omer (1999), meanwhile, demonstrate a wide gulf between English and Arabic discourse in the use of coordination and subordination, which can result in Arabic-speaking students transferring Arabic modes of discourse “intensively” (Stapa & Irtameh, 2012, p. 260)—for instance, by overusing conjunctions (Al-Khresheh, 2011), or producing sentences that in English are considered run-on (Al-Katib, 2001).

Khuwaileh (1995) posits that this negative transfer is often the fallout of a grammar-translation approach to writing, in which students think in Arabic during the writing process and translate their thoughts into English as they go along. On the other hand, Dweik and Abu Al Hommos (2007) find that students who write well in Arabic tend to write well in English, too. They conclude that writing skills can transfer positively between Arabic and English; however, their conclusion seems a bit off-target, akin to saying that good pianists make good cellists. They very well might, but if so it is probably thanks to a knack for music in general, not transfer—which, in the case of Arabic and English, as noted above, is nearly always negative.

Errors resulting from negative transfer are perceived very differently. Sweedler-Brown (1993), for instance, finds that non-teachers tend to zero in on errors at the sentence level, while teachers typically incorporate a more bird’s-eye view of discourse as a whole. However, even among teachers there is very little consensus on error gravity. For whatever reason, most studies of error gravity have focused on its perception by native versus non-native English speakers. Some, like Kobayashi’s (1992), find that the former are “more strict” (p. 81). Others turn up only small differences (Porte, 1999). Still others—the majority, say Hyland and Anan (2006)—conclude that native English speakers are, in fact, more error-*tolerant* than their non-native counterparts.

McCretton and Rider (1993) fall into this last category. They point to a number of similarities in the way that both native and non-native English speakers perceive errors, considering the possibility of a “universal hierarchy of errors” (p. 177) but ultimately concluding that similarities tend to be a product of shared background, not a universal hierarchy. Still, background plays a role in perception and seems a perfectly valid focus of study, as when Vann, Meyer, and Lorenz (1984) demonstrate that teaching experience affects how a teacher perceives errors. In theory, then, error gravity hierarchies might be predictable by background, including whether or not the teacher is a native English speaker, teaching experience, and any additional factors that further study might turn up (e.g., psychological state at the time of the study; Brackett et al., 2013).

Which brings us to the fact that students are part of a teacher’s background, too: their first language, the errors they make as a result of negative transfer, and how those errors are perceived. And here there is a gap in the research. To my knowledge, only Mahoney (2011) has studied error gravity from the student point of view. He finds that students have opinions about errors and their gravity, but little to no frame of reference for forming them, and that as a result their perception of errors is quite different from that of their teachers.

This study is an attempt to close the gap somewhat by providing the missing frame of reference.

## Method

This study has its roots in a conversation with a class of Arabic-speaking students in the Foundation Program at Dhofar University, Oman. The students had studied the third person singular form of simple present verbs the term before but were still producing sentences like *\*He study English* despite repeated modeling and correcting. Finally, it was pointed out to them that dropping the *-s* was on par with how Gulf Pidgin Arabic speakers jettison all inflectional morphology (Avram, 2014), and a rather grating example provided. The analogy was weak, but it had the desired effect. The students chuckled, and thereafter there was a noticeable uptick in their use of *-s*.

This impromptu juxtaposition of errors prompted the idea of a more systematic theory whereby error gravity could be compared cross-linguistically. This study is a first step in that direction. It focuses on transfer errors and asks three questions:

1. How do teachers perceive different categories of transfer errors in English?
2. How do students perceive equivalent or near-equivalent categories in Arabic?
3. Are there any differences between the two perceptions that might inform teaching practices?

Perception of the errors that students make differs from teacher to teacher. To answer the first question, eight examples of English usage that is prone to transfer errors from Arabic were collected from the Level 1 (i.e., CEFR Level A1) Reading & Writing textbook. There are, of course, other errors, both developmental and transfer, that Arabic-speaking students make, but the eight in question are common in Level 1 (and beyond).

1. Singular and plural nouns (SG/PL)
2. The verb *be* (COP)
3. Noun phrases with *of* (GEN)
4. Articles (ART)
5. Capital letters (CAP)
6. Conjunctions (CONJ)
7. Spelling with vowels (V)
8. Spelling with consonants (C)

Examples 1-4 are grammatical, 5-6 mechanical, and 7-8 lexical. Two sets of eight sentences were constructed, each with one of the eight transfer errors. Rifkin and Roberts (1995) allow that constructed texts are valid in error gravity studies when the questions at stake are theoretical. In this study, the first two questions are. The focus is not errors but error *categories*; accordingly, it was necessary to limit the errors in each text to one of the eight categories. Teachers were asked to rate the error gravity of these constructed texts (c-texts) from 8 (least grave) to 1 (gravest) for both sets.

The approach to the second question was the same. Arabic c-texts with functionally equivalent or near-equivalent error categories were constructed in Modern Standard Arabic (MSA) with the help of three university-educated native Arabic speakers and students asked to rate their error gravity from least grave to gravest. In the context of this study, a functionally equivalent error is one that involves the same category of error and transfers in both directions, albeit in slightly different form. For instance, the errors in *\*There are 50 state in the US* and the Arabic c-text translated as *\*There are 6 country in the GCC* are formally equivalent, with a singular noun used where the plural is required; however, they are not functionally equivalent because *\*50 state* is an Arabic-to-English transfer error while *\*6 country* is not an error that English speakers tend to make in Arabic. Conversely, *\*Amarel has 12 brother* and *\*Amal has 12 brothers* (which is incorrect in Arabic) are not formally equivalent because the word *brother* is singular in the English c-text and plural in the Arabic, but the errors are functionally equivalent transfer errors in the use of singular and plural nouns in both languages.

It should be noted that not all of the errors in the Arabic c-texts were functionally equivalent in the sense of being transfer errors, and one of them (capital letters) had no formal equivalent. In fact, no error, developmental or transfer, is 100% equivalent between two languages, and there was room to approach any or all of the eight categories differently in both English and Arabic. The approach of this study, however, was to construct c-texts whose errors were, insofar as it was possible, functionally equivalent, and to use them to answer the study's third question of how differences in their perception might inform teaching practices. If it was not possible to construct a functionally equivalent Arabic c-text, a formal equivalent or near-equivalent was used. The following is a list of the English c-texts and translations of the Arabic c-texts. The Arabic c-texts are provided in Appendix A. For brief explanations of the approach to their construction, see Appendix B.

English c-texts		
	Set 1	Set 2
SG/PL	There are 50 state in the US.	Amarel has 12 brother.
COP	They from Italy.	His name Tom.
GEN	The history Japan is interesting.	Paris is the capital France.
ART	Amir is boxer.	Jambalaya is American dish.
CAP	the man is tall.	I am from oman.
CONJ	He went to London and Paris and Madrid and New York and Los Angeles.	Kabsa is a rice and meat and vegetable dish.
V	Spelling is imporent.	The weather is beatiful.
C	I blay football.	Daria has a good jop.
Arabic c-texts (translation)		
	Set 1	Set 2
SG/PL	There are 6 country in the GCC.	Amal has 12 brothers.
COP	Ali will here tomorrow.	Ahmad not home yesterday.
GEN	I read part the book.	There are 35 kinds cheese.
ART	Knowledge is light.	Do you like bananas?
CAP	the man is tall.	I am from oman.
CONJ	He went to London, Paris, Madrid, New York, and Los Angeles.	Kabsa is a rice, meat, and vegetable dish.
V	The hospitel is far.	I am a student at Dhofar Univrsity.
C	I am a fisherman.	The weather is sunny.

Figure 1. English and Arabic c-texts

The three native Arabic speakers who helped to construct the Arabic c-texts recognized the errors immediately and, when asked to correct them, did so in the same way. When shown the English c-texts, they agreed that the error categories were more or less equivalent and had the same “feel” as the Arabic.

The study was conducted with 27 teachers and 94 students in the Foundation Program. Teacher ratings were analyzed according to cultural background and experience, and student ratings according to level of English study.

## Results

### Teachers

The teachers who participated in the study represented a breadth of background and experience. Fourteen were South Asian (Indian or Pakistani), seven were from across the Arab world from Morocco to Oman, and six were from English-speaking Western countries. Two were PhD holders. Their teaching experience ranged from 6 to 34 years, with anywhere from 3 to 33 years in the Arab world. Figure 1 shows their perception of the errors in the English c-texts. For each of the three different teacher backgrounds (*South Asian, Arab, and Western*), categories whose rating differed from the average (*Teachers*) by more than 0.5 are in bold.

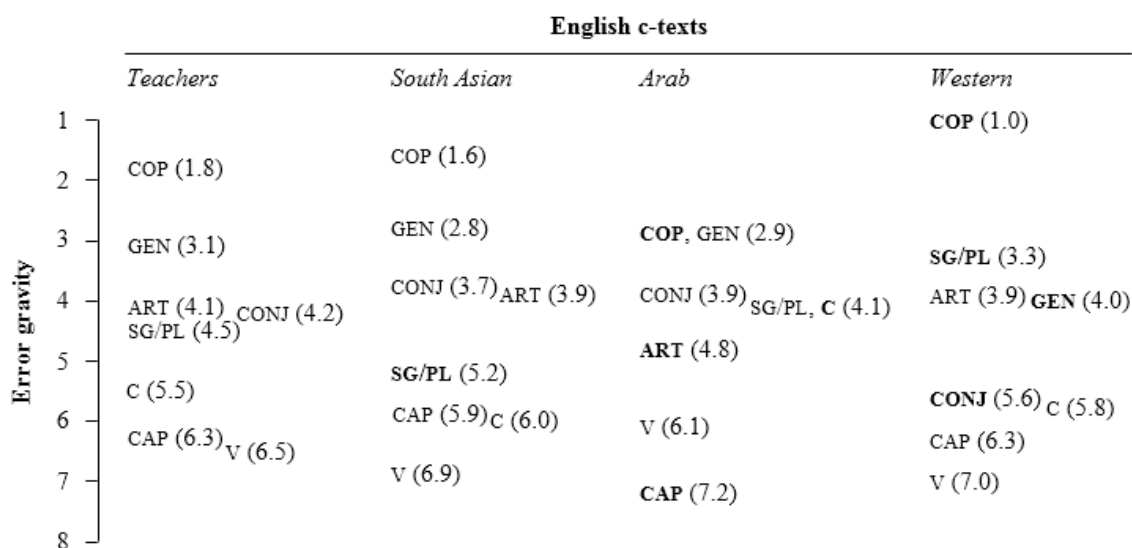


Figure 2. Error gravity by teacher cultural background

Teachers tended to perceive grammatical errors as graver than mechanical or lexical errors. Across the board, leaving out the verb *be* (COP) was rated as the gravest error, followed by leaving out the word *of* in noun phrases (GEN) and articles (ART), though the latter was bunched with the misuse of conjunctions (CONJ) and singular and plural nouns (SG/PL). Spelling errors involving either consonants (C) or vowels (V) and uncapitalization (CAP) were perceived as the least grave.

South Asian teachers, who comprised slightly more than half of the teachers who participated in the survey, were more or less in line with the average. Only one category, SG/PL, was more than 0.5 off the average (5.2 vs. the average of 4.5). In this instance, the average was pulled up by ratings from Arab and Western teachers, who tended to perceive the misuse of singular and plural nouns as a much graver category of error.

Ratings by Arab teachers were unique in several ways. In the first place, they were less categorical regarding leaving out the verb *be*, rating it as more than a full place less grave than the average, and tied with leaving out the word *of* in noun phrases at 2.9. They also tended to perceive spelling errors involving consonants as much graver than the average, tied with the misuse of singular and plural nouns at 4.1, while ratings from South Asian and Western teachers for this category hovered around 6. In addition, they rated leaving out articles as less grave than did either South Asian or Western teachers, essentially bunching the categories C, CONJ, and SG/PL as middling errors in the range of 3.9 to 4.1, while South Asian and Western teachers swapped out C for ART with a bunching range of 4.1 to 4.5. Finally, Arab teachers tended to perceive uncapitalization as the least grave error by far—at 7.2, nearly a full place less grave than the average of 6.3, and more than a full place below their rating for spelling errors involving vowels.

Western teachers unanimously rated leaving out the verb *be* as a 1, the gravest error. They also tended to perceive the misuse of singular and plural nouns as graver than the average (3.3 vs. the average of 4.5), but leaving out the word *of* in noun phrases less so. Still, there was a clear differentiation in the way they tended to perceive grammatical errors on one hand and mechanical

and lexical errors on the other, with a gap of 1.6 between the least grave grammatical error, leaving out the word *of* in noun phrases, and the gravest error of any other category, the misuse of conjunctions—which, at 5.6, they tended to perceive as less grave than the average of 4.2.

Ratings were also analyzed according to teaching experience. Nine of the 27 teachers had less than ten years of experience in the Arab world, and four had taught for less than ten years in total. (Interestingly, these four were a cross section of the teachers as a whole, with two South Asians, an Arab, and a Westerner.)

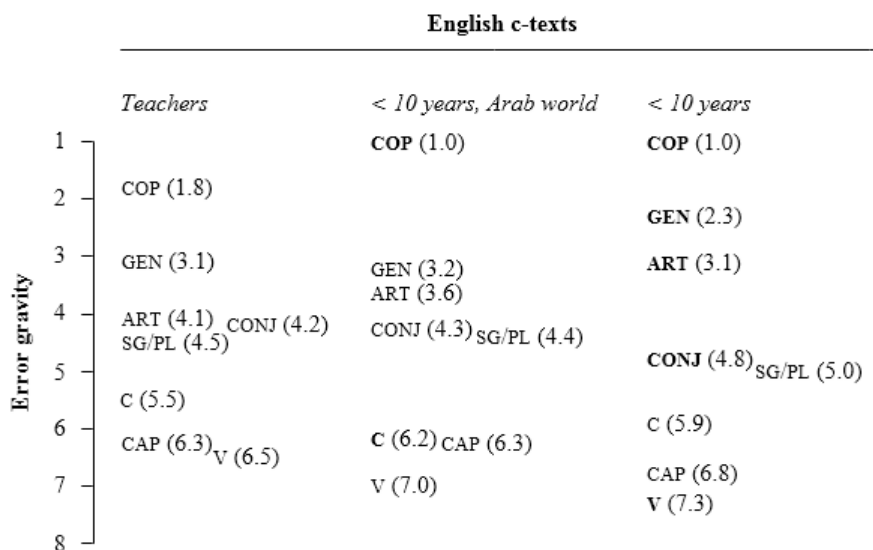


Figure 3. Error gravity by teacher experience

Experience appears to have played little role in teachers’ perception of error gravity. Both groups rated the eight categories of error in the same order as the average (COP-GEN-ART-CONJ-SG/PL-C-CAP-V). For those with less than ten years of experience in the Arab world, only two errors, leaving out the verb *be* and spelling errors involving consonants, were more than 0.5 off the average. Meanwhile, those who had taught for less than ten years in total tended to perceive errors quite similarly, with only two instances of bunching (for the categories CONJ and SG/PL, and CAP and V), with the result that half of the categories were more than 0.5 off the average.

Teachers were fairly consistent in their ratings between the c-texts in Set 1 and Set 2, meaning that paired ratings for *\*There are 50 state in the US* and *\*Amarel has 12 brother*, for instance, were for the most part the same or similar. Of the 216 paired ratings, only ten (4.6%) differed by more than two places. Four of the ten were for the category CAP. The four teachers who rated this category differently between Set 1 and Set 2 tended to perceive *\*the man is tall* as more grave than *\*I am from oman* (4.3 vs. 6.3), indicating that they perceived uncapitalization of the first word in a sentence as graver than that of a word in an arguably less prominent position.

### Students

The students who participated in the study were a cross section of the student body as a whole. Sixty-nine were women and 25 were men, in line with the student body ratio of 3-1. Thirty-one were from Level 1, 33 from Level 2, and 30 from Level 3. All were Omani. As with teacher ratings,



categories whose rating differed from the average (*Students*) by more than 0.5 are in bold for each of the three different levels (*Level 1*, *Level 2*, and *Level 3*).

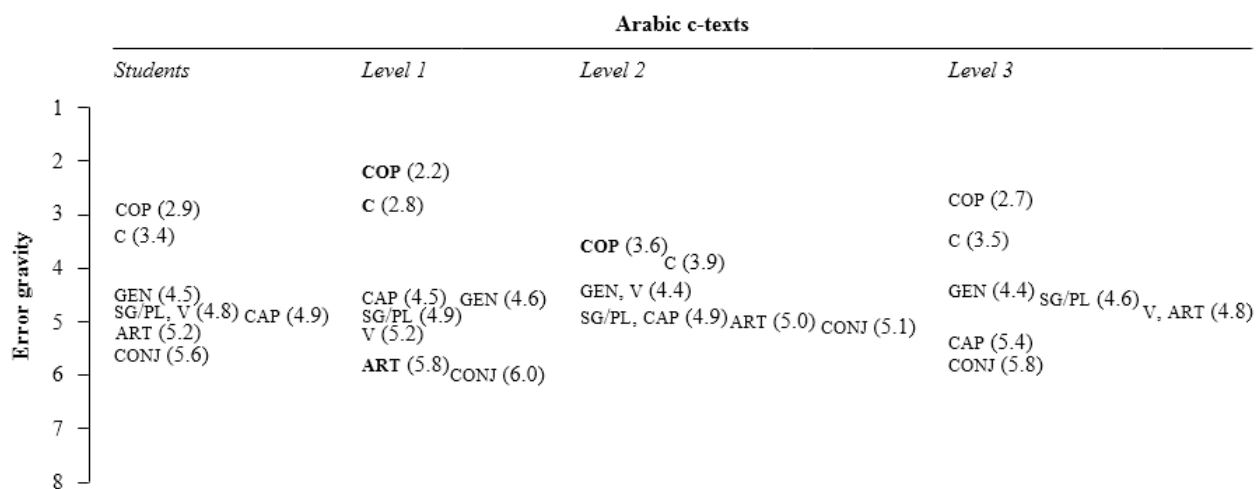


Figure 4. Error gravity by student level

Leaving out the verb *be* was rated as the gravest error, albeit not very categorically at 2.9. It was followed by spelling errors involving consonants. The other six categories were bunched between 4.5 and 5.6.

Level 1 students were more categorical about leaving out the verb *be* and spelling errors involving consonants, both of which they tended to perceive as graver than the average. (The rating of 2.2 for leaving out the verb *be* was likely due to the fact that at the time of the study they were studying that very topic of grammar.) They rated leaving out articles as less grave than the average (5.8 vs. the average of 5.2) but were otherwise more or less in line with the average.

Level 2 students were the least consistent in their ratings, with all eight categories bunched between 3.6 and 5.1.

No category was more than 0.5 off the average for Level 3 students.

Student ratings were much less consistent than teacher ratings. Of the 752 paired ratings for the c-texts in Set 1 and Set 2, 261 (34.7%) differed by more than two places. The categories SG/PL and GEN were the top two culprits, with 43 and 40 inconsistent pairs, respectively. These two categories were analyzed separately to determine if students tended to perceive one c-text of the pair as graver than the other. This analysis, in fact, was planned for SG/PL. Arabic uses plural nouns for 3-10 but singular for 11-99. As noted above, \*50 *state* and \*6 *country* are formally equivalent; meanwhile, where an Arabic speaker might produce a sentence like \**Amarel has 12 brother* in English, \*12 *brothers* (plural) is an English-to-Arabic transfer error. The two approaches represent the tension between formal and functional equivalence. It was decided to include both to see if students rated one as graver than the other.

Across the board, students rated the formally equivalent Arabic c-text containing \*6 *country* (Set 1) at 5.1, and the functionally equivalent \*12 *brothers* (Set 2) as graver, at 4.4. The

differentiation was more pronounced among the 43 students whose ratings for the category SG/PL differed by more than two places, at 5.4 for *\*6 country* and more than a place and a half graver for *\*12 brothers* at 3.8. These ratings were somewhat surprising given that formally equivalent translations are generally regarded as the more stilted. Meanwhile, the errors in the c-texts for the category GEN, *\*part the book* (Set 1) and *\*kinds cheese* (Set 2), were rated at 4.2 and 4.8, respectively, but two whole places apart by the 40 students in question, at 3.3 for *\*part the book* and 5.3 for *\*kinds cheese*.

## Discussion

As noted above, there is very little consensus on error gravity. It is possible that the same sets of English and Arabic c-texts would produce different results with different study participants. The question is whether or not they are likely to produce different results—or more consistent results, given the fact that students' paired ratings were quite inconsistent. Consistency, of course, is not the same thing as validity. Fourteen of the 27 teachers, for instance, rated the paired English c-texts with exactly the same error gravity between Set 1 and Set 2 despite the fact that they were scrambled, indicating that they recognized that *\*50 state* and *\*12 brother* were the same category of error. There is, then, the quite real possibility that these teachers rated Set 2 by referring back to Set 1 instead of judging each c-text vis-à-vis the other c-texts in its set, thereby veiling differences like the one that appeared between *\*the man is tall* and *\*I am from oman*. However, ratings from these teachers were in line with the average, with only the category SG/PL out of order, owing mostly to the fact that five of the 14 were Westerners, who, as noted above, tended to perceive the misuse of singular and plural nouns as graver than the South Asian and Arab teachers. Thus, while the study's methodology might have been improved by flipping Set 1 and Set 2 for half of the teachers, the results appear valid.

Student ratings, on the other hand, were more or less the antipode of teacher ratings. Only seven students rated all eight paired Arabic c-texts within two places of each other between Set 1 and Set 2, and none rated them with exactly the same error gravity. There are several possible reasons for this inconsistency. In the first place, they might have misidentified the errors. This possibility was considered when the surveys were being compiled, with the first draft requesting students to correct the Arabic c-texts in addition to rating them for error gravity, to validate their recognition of the errors. However, this draft was scrapped as impractical time-wise and unnecessary, as the three native Arabic speakers who helped to construct the Arabic c-texts agreed that the errors were clear to any Arabic speaker. It was also possible that the paired c-texts differed in their error gravity, as with *\*the man is tall* and *\*I am from oman*. In the case of the categories SG/PL and GEN, above, some students do appear to have differentiated between the two sets. Most of them, however, did not: students whose ratings were consistent between Set 1 and Set 2 for the two categories in question rated both *\*6 country* and *\*12 brothers* at 4.9, and both *\*part the book* and *\*kinds cheese* at 4.7. As a whole, then, students did not perceive either of the paired c-texts as significantly different in terms of error gravity. Finally, there is the very real possibility that some students were disinterested in the study, rating the c-texts in a slapdash way that resulted in inconsistency. To test this possibility, all inconsistent ratings (i.e., those that differed by more than two places between Set 1 and Set 2) were removed.

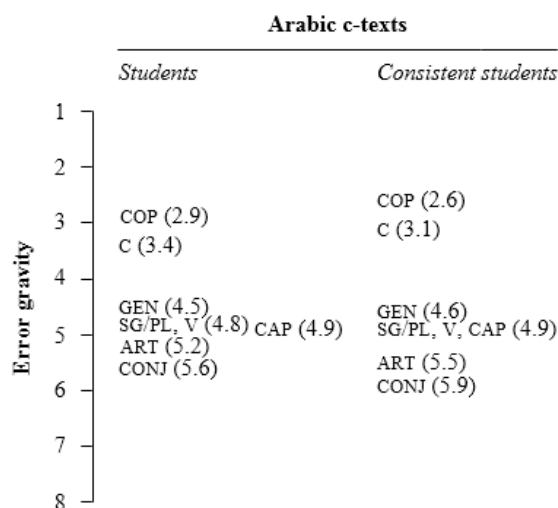


Figure 5. Error gravity by student consistency

No rating was more than 0.3 off the average. What this means is that students were not necessarily slapdash in their ratings. They merely had, from student to student, differing perceptions of the error gravity of the Arabic c-texts—a lack of consensus that resulted in the bunching of six of the eight categories.

Which brings us to this study’s third question: Are there any differences between teacher and student perception of transfer errors that might inform teaching practices?

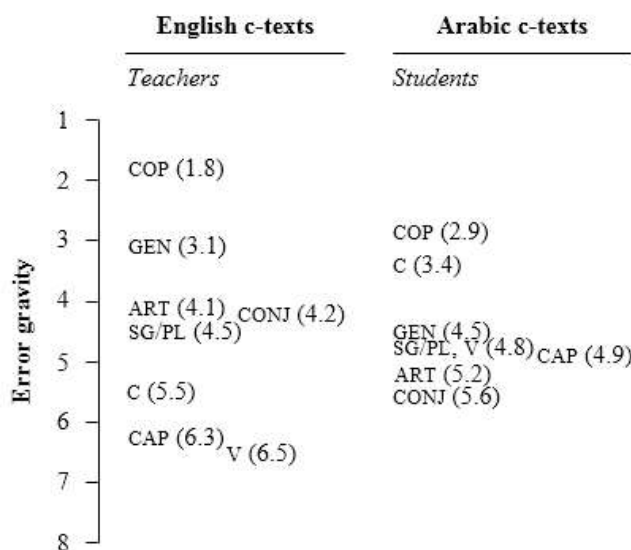


Figure 6. Error gravity, teachers and students

Teachers and students both tended to perceive leaving out the verb *be* as the gravest error, but rated the other seven categories quite differently. In fact, only SG/PL was rated to within 0.5

between teachers and students, at 4.5 and 4.8, respectively. The most striking difference was how students rated spelling errors involving consonants as much graver than did teachers (3.4 vs. 5.5).

There were, however, several interesting parallels between ratings by Arab teachers and students. In the first place, they both rated leaving out the verb *be* at 2.9. They also tended to perceive spelling errors involving consonants as graver than did South Asian and Western teachers. This might stem from the fact that Arabic utilizes an abjad in which short vowels are not normally written and consonants carry a much greater functional load than in they do in English.

As a follow-up, it was decided to have the Arab teachers also rate the Arabic c-texts.

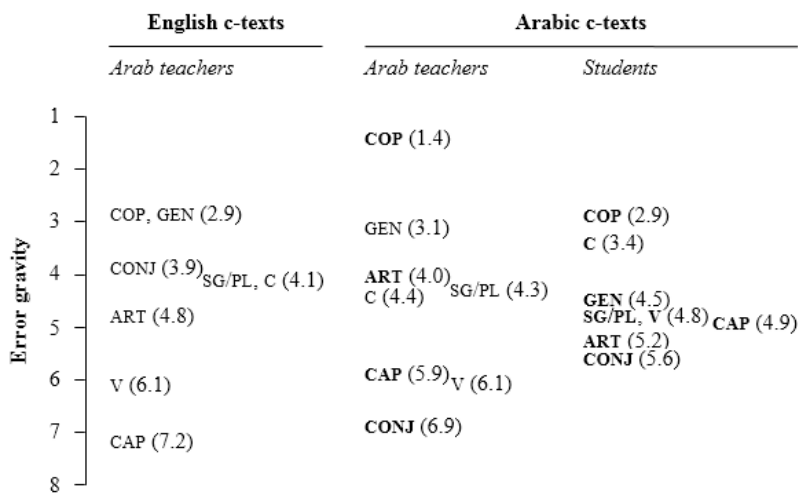


Figure 7. Error gravity, Arab teachers and students

Four categories differed between the English and Arabic c-texts for the Arab teachers. In the first place, they tended to perceive leaving out the verb *be* much more categorically as the gravest error in the Arabic c-texts, at 1.4. Leaving out articles was also rated as graver, as was uncapitalization, which, while not particularly grave at 5.9, was more than a full place graver than teacher ratings in the English c-texts. The biggest difference, however, was the rating of CONJ, which dropped a full three places from 3.9 to 6.9 between the English and Arabic c-texts. It is interesting that the Arab teachers tended not to perceive spelling errors involving consonants as graver in Arabic, rating them as less grave in the Arabic c-texts, at 4.4, than in the English c-texts, where they were rated at 4.1.

The Arab teachers and students, meanwhile, differed by more than 0.5 in their ratings of every single category in the Arabic c-texts. The only commonality, in fact, was that the misuse of conjunctions was rated as the least grave error (albeit in the students' case not by much). The upshot is that the Arab teachers and students tended to perceive errors quite differently, even in their shared first language, a finding that corroborates with Sweedler-Brown's regarding teachers and non-teachers.

That said, translation, and the translation of errors in particular, is a tricky business, more art than science, and there was, as noted above, room to approach any or all of the Arabic c-texts differently. For instance, one Arab teacher called into question the use of numbers, pointing out

that they are typically written out in Arabic, and visually jarring when they are not. (The decision not to write them out was deliberate. The rules governing number-noun agreement in Arabic are rather labyrinthine, and the worry was that writing them out might focus students away from the real errors.) His ratings reflected this perception. He rated the Arabic c-text translated as *\*There are 35 kinds cheese* as a 2, with its pair for the category GEN (which did not have a number) as a 6. For the category SG/PL, he rated *\*6 country* as a 1 and *\*12 brother* as a 3. His perception, however, was shared by neither the other Arab teachers, who rated the two SG/PL c-texts at 4.7, nor the students, who rated them at 4.8. It appears, then, that he was unique in focusing away from the real error (the misuse of singular and plural nouns) and that the use of numbers in the Arabic c-texts did not significantly skew their perception by either Arab teachers or students.

### Conclusion

The first question asked by this study was how teachers perceive different categories of transfer errors in English. The broad conclusion is that they tend to perceive grammatical errors as graver than mechanical or lexical errors. A notable exception is that Arab teachers tend to perceive spelling errors involving consonants as graver than do South Asian or Western teachers.

The second question was how students perceive equivalent or near-equivalent categories in Arabic. For the most part, students tend to perceive leaving out the verb *be* as the gravest error, followed by spelling errors involving consonants. Aside from these two categories, there is little that can be concluded from student ratings.

The third and most practical question was whether there are any differences between the two perceptions that might inform teaching practices. While students do tend to perceive leaving out the verb *be* as the gravest error, it was rated as less grave vis-à-vis teachers, and it might be constructive to point out this fact to them. It might also be pointed out to them that while they tend to perceive spelling errors involving consonants as the second-gravest category of error, teachers perceive it as less grave and place more gravity on grammatical errors.

More broadly, teachers and students might benefit from a better understanding of both their own tendencies in perceiving errors and those of the other party in the learning process. For teachers, this means focusing more on helping students to improve in areas in which errors tend to be perceived as graver (without, of course, trivializing less grave errors). For students, this means coming to the particular kind of clarity afforded by a frame of reference whereby they hear their own voices as they really are—or, at least, as they are perceived by English speakers.

Areas for further study involving error gravity in English and Arabic might include any of the categories in this study to better understand, for instance, the role of prominence in uncapitalization, or different spelling errors—particularly those involving vowels. Most dialects of Arabic have a scant five phonemically distinct vowels by quality, and three letters for spelling them. Meanwhile, most Englishes have at least a dozen, and any number of ways to spell them. The vowel /u/, for instance, can be spelled twenty-one different ways.

This study is the first step toward a cross-linguistic theory of comparative error gravity. It has utilized what is a very rudimentary approach to translating c-texts from English to Arabic, that of

functional equivalence. A full-fledged theory for moving between languages for the purpose of studying error gravity would be a welcome second step, at which point this study could be adapted to study transfer errors in other languages.

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## Appendix A

### Arabic c-texts

#### مجموعة 1

- \_\_\_\_\_ هناك 6 دولة في مجلس التعاون الخليجي.  
 \_\_\_\_\_ قرأت جزءاً الكتاب.  
 \_\_\_\_\_ الرجاء طويل.  
 \_\_\_\_\_ انا سياد السمك.  
 \_\_\_\_\_ ذهب إلى لندن، باريس، مدريد، نيو يورك، ولوس اتجلس.  
 \_\_\_\_\_ علم نور.  
 \_\_\_\_\_ المستشفى بعيد.  
 \_\_\_\_\_ على سوف هنا غداً.

#### مجموعة 2

- \_\_\_\_\_ الجو مسمص.  
 \_\_\_\_\_ انا من حمان.  
 \_\_\_\_\_ لم أحمد في البيت امس.  
 \_\_\_\_\_ مكونات الكيسة هي الأرز، اللحم، والخضار.  
 \_\_\_\_\_ انا طالب في جمعة ظفار.  
 \_\_\_\_\_ لأمل 12 إخوان.  
 \_\_\_\_\_ هل تحب موز؟  
 \_\_\_\_\_ هناك 35 نوعاً الجبن.

## Appendix B

### Construction approach

#### 1. Singular and plural nouns (SG/PL)

The approach to the construction of the English and Arabic c-texts for this category is provided in the Results section.

#### 2. The verb *be* (COP)

Dropping the verb *be* in English is a developmental error for children, a colloquialism, headlines, and a characteristic of certain Englishes. It rarely introduces ambiguity in meaning, nor is it a common English-to-Arabic transfer error. In Arabic, the verb *be* is dropped in most contexts, and it was difficult to construct c-texts in which it was both used and droppable without introducing ambiguity in either meaning or error category. Two particles that mark the future and negative past tenses and require the verb *be* were used. The resulting errors were formally equivalent to those in the English c-texts.

#### 3. Noun phrases with *of* (GEN)

In Arabic, most noun phrases like *the history of Japan* and *the capital of France* have no preposition; however, for certain noun phrase heads (including *part* and *kind*), a preposition meaning “of” or “from” is required. Dropping the preposition in the Arabic c-texts was not a transfer error but a hypercorrection, and the errors in the English and Arabic c-texts were formally equivalent and functionally near-equivalent.

#### 4. Articles (ART)

The zero article marks indefinite nouns in Arabic, and dropping *a* or *an* is a common transfer error. With no indefinite article to drop in the Arabic c-texts, the definite article (which is required for general nouns like *knowledge* and *bananas*) was dropped as a functionally equivalent English-to-Arabic transfer error.

#### 5. Capital letters (CAP)

Errors in capitalization are less clear-cut as to whether they are transfer or developmental. It is tempting to say that for a language like Arabic, which does not use a Latin-based alphabet and has no formal equivalent of capital letters, there is nothing to transfer and capital letters are merely a built-in difficulty of English, like irregular verbs. Yet it is plainly a transfer error when a Dutch speaker forgets to capitalize *I* or *Tuesday* because *ik* and *dinsdag* are not, and we might just as well say that, more than a word here or there, the entire vocabulary of Arabic is uncapitalized, and that uncapitalization blanket transfers to the sentence case of English.

The difficulty for this study was how to represent capital letters in the Arabic c-texts. Forms were used as a workaround. Arabic letters have up to four different forms depending on their position in a word. Incorrect forms were used in the words *the man* and *Oman*. The resulting errors were formally near-equivalent to those in the English c-texts.

Hitherto, I have avoided defining the terms *developmental error* and *transfer error* except broadly. This was deliberate. If there is very little consensus on error gravity, there is even less on



its typology. The goal of this study is not to define terms but to sensitize teachers and students to problem, and it seems counterproductive to that goal to rule out a common category of error merely because it is less clear-cut as to whether it is transfer or developmental. That said, I have described the errors in the Arabic c-texts as near-equivalent formally, but not functionally (i.e., as non-transfer errors). It might be argued that because English letters have only one lowercase form, errors in writing multi-form Arabic letters are, like uncapitalization, an example of blanket transfer from English to Arabic. This argument, however, does not stand up to scrutiny. Developmental errors are one-off. A form like *ate*, for instance, might be lost to attrition, but once learned it is not prone to errors resulting from first language transfer. This is precisely what we see when English speakers are learning to write Arabic. They might butcher Arabic spelling, but they rarely, if ever, use incorrect forms of Arabic letters (Brosh, 2015), and the learning process entails nothing like the recurring difficulty that Arabic-speaking students have with uncapitalization. As such, the errors in the Arabic c-texts cannot be called functionally equivalent, or even near-equivalent.

#### 6. Conjunctions (CONJ)

In lists, commas and the conjunction *and* function in the same way between English and Arabic. Swapping them is a transfer error in both directions and functionally equivalent.

#### 7. Spelling with vowels (V)

As noted above, spelling presents special difficulties for Arabic-speaking students. In this study, two common categories of misspelling were included in the English c-texts: using an incorrect vowel and dropping a vowel. Constructing equivalent Arabic c-texts was surprisingly difficult because vowels function quite differently in the two languages. In words longer than *bag*, English is fairly forgiving when it comes to misspelling, and it is not difficult to see what is meant by *\*important* and *\*beatiful*, even out of context. In Arabic, however, short vowels are not normally written, and misspelling the long ones can produce an entirely different word.

In the first Arabic c-text, the long vowel in *hospital* was changed from /a/ to /i/ by adding two dots. Like the misspelling in *\*important*, the change was visually small and the meaning of the c-text clear. In the second, the long vowel in *University* was dropped. The resulting word means “Friday,” but what is meant is still clear from context. The errors were functionally equivalent to those in the English c-texts.

#### 8. Spelling with consonants (C)

Arabic does not distinguish between /b/ and /p/. The misspelling *blay* is a transfer error and *jop* a hypercorrection. English speakers, meanwhile, often have trouble with /s/ and the pharyngeal /s<sup>ʕ</sup>/ in Arabic. The letter representing /s/ was transferred to *fisherman* in the first Arabic c-text and hypercorrected to the pharyngeal in the second, making the English and Arabic c-texts functionally equivalent.