

Formulaic Memorization as Barrier to Language Learning

Amjed Saleem

Abstract

Can memorizing text in the target language facilitate L2 learning? This paper examines an extreme case—the Quran as memorized by Muslims who do not have any independent knowledge of Arabic. The hypothesis, derived from existing research literature, was that they would develop implicit sensitivities to certain grammatical patterns in Classical Arabic as a result of repeated exposure to fully correct formulations, unadulterated by any interlanguage features. Non-Arabic-speaking Quran memorizers were asked to distinguish Classical Arabic sentences with and without an introduced morphological error. Contrary to the hypothesis, they could not identify ungrammatical sentences beyond chance level, and could rarely pinpoint the error in a sentence that they did isolate. A small follow up study using Quran memorizers who spoke modern Arabic revealed the same pattern, indicating a surprising lack of extrapolation from Modern to Classical Arabic, despite sufficient points of similarity to make pattern identification feasible. The reason for the findings is considered in the light of a model of how memorization is, or is not, a support to accurate language learning.

1. Introduction

1.1 Memorization as a means of language learning

For some time, there has been a debate in the research literature about whether language learners can benefit from not only being exposed to, but also deliberately memorizing, target language text (Nattinger & De Carrico 1992; Wray 2000, 2002, 2008). The rationale for supposing such benefit to learners is that accurate memorization would somewhat protect learners from the contamination arising from extensive exposure to their own and others' non-target-like output. The more they are exposed to material that is not only accurate but known by them to be accurate, the more they can trust it, and gradually develop intuitions about what 'sounds right'.

Foremost in making this claim have been researchers in China, where traditional educational approaches favour a disciplined approach to internalizing knowledge in both language learning and the rest of the curriculum (Dahlin & Watkins 2000; Kennedy 2002; Liu 2002). In the L2 learning context, Ding (2007) linked success in a prestigious English language competition in China to strict memorization practices extending back through the school years. He found that students were often pressurized into committing texts to memory even before they fully understood them on the basis that accurate target language material safely stored in the learner's head was then reliably available for subsequent examination, to bootstrap further learning. Such students, provided they saw the tough regime of memorization through, emerged with strikingly native like capacities, perhaps due to a growing sense that the language they had memorized had become their own (p. 275). To put it another way, by reproducing texts as output that would otherwise only constitute input, they effectively bridged the gap between receptive and productive capabilities.

It goes without saying that language learners would not get far if their only recourse to was to memorized material. Bloom (1973: 17) notes, with reference to first language acquisition, that we need much more flexibility of expression than that. Research into formulaic language has

concerned understanding the boundary between novel and previously encountered forms, with notable attention to how language teaching might benefit from not assuming that everything is novel. As Nattinger & De Carrico (1992: 27) point out, “a great deal of language that people are exposed to every day is very routine and predictable, just as are the situations they encounter”. It follows, they argue (p.113ff), that provided a wordstring is suitable for the communicative job in hand, it may not matter that it is not something you made up yourself. Knowing that it is 100% correct and nativelike must be a bonus that instils confidence.

Figure 1 lays out a basic model for how learning might result from the memorization of target language material. The key process depicted is the building up, through repetition of the teacher’s and one’s own faithfully reproduced models of texts, of a body of episodic memories that reinforce the particular patterns the texts contain. Port (2007) and Taylor (2012) are two theorists who recognise episodic traces to play a crucial role in pattern learning, in phonology and lexis respectively.

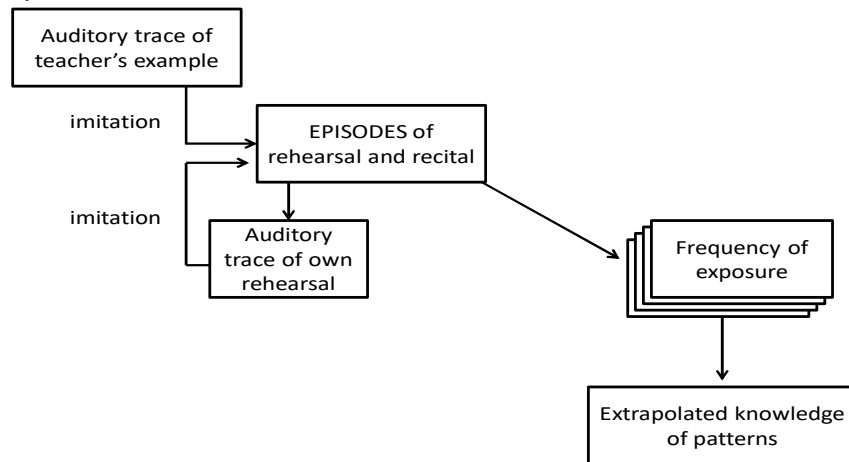


Figure 1.1: **Modelling language learning from memorized material**

Based on this model, one might reasonably ask why a learner would *not* benefit from memorizing and reciting native like texts. To put it baldly, if a learner knows that he will not only learn how to say things that are accurate and native like, but also be able to extract the information necessary to construct new, native like utterances, why would he not prioritize this approach? Why would teachers not do so? Why did drilling everywhere go out of fashion?

There are of course, good reasons why. Figure 1 does not tell the whole story. In section 5 we will return to it with a critical eye, drawing on research that has demonstrated memorization not to be as effective for accurate learning as we might expect. But first, we must consider the single most likely context in which Figure 1 actually might hold true—one in which the learner’s extrapolation of patterns would be maximally facilitated by the absence of any competition from other, less-regulated input.

1.2 Quran memorization by non-Arabic speakers

The Quran is the primary religious text of Muslims. It is written in Classical Arabic and is read and studied by millions of Muslims all over the world in its original version. (Later, it will become relevant to discuss the similarities and differences between Classical and Modern Arabic – see 4.2 below). Memorization of sections of the Quran is part of almost every Muslim's early education. But in addition, a good number of Muslims memorize the whole of it, and memorization of the Quran in full has always been an important tradition in the Islamic world. It is a point of honour to have a Quran memorizer, or *Hafiz*, in the family; and across the world Muslim boys and girls are encouraged to attend classes after school and at weekends to commit the full text to memory.

The word *Hafiz* (plural, *Huffaz*) literally means 'guardian' and this is important. For it is imperative that memorizers apply the highest standards of accuracy to their reproduction of the text. Changing the Quran in any way is considered blasphemous. Yet the holy Quran is a text of considerable length. It consists of 114 chapters in 30 sections. The total number of verses in the Quran is sometimes taken to be 6666, and sometimes 6236, depending on what is counted as a complete verse. The length of time it takes to read/recite the Quran from cover to cover can be 15 to 20 hours (though it can be recited much faster by fluent *Huffaz* during Ramadan).

Of particular interest to us here is how the Quran is memorized with full accuracy by Muslims who do not know any modern Arabic. If one listens to non-Arabic speaking memorizers' recitation of the Quran, one is struck by their fluency and ease of production, complete with a convincingly near-native pronunciation and lilt of the language. This is achieved according to the pattern laid out in Figure 1, though with some additional supports, which are added in Figure 2. They reflect the particular processes by which Quran learning is achieved, at least by sighted, literate memorizers: the position of text on the page, use of the configurations of alphabetic symbols as a cue, and personal images including episodic memories and associations (Saleem 2015).

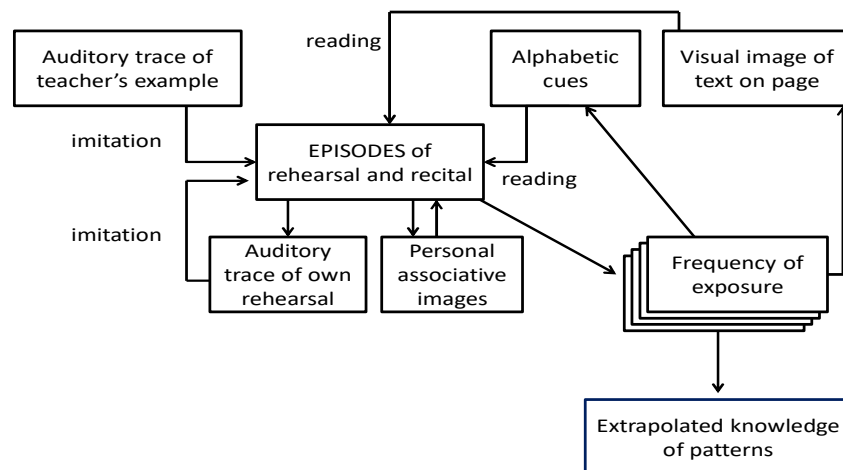


Figure 1.2: Potential learning processes for Quran memorizers

In the closed system of Quran memorization, we see a potentially perfect context for examining the capacity for a dedicated learner to develop implicit knowledge of an otherwise unknown L2. The study described below was undertaken to ascertain whether one sample of non-Arabic-speaking memorizers were in possession of such knowledge.

3. Investigating the implicit grammatical knowledge of Classical Arabic in non-Arabic-speaking Quran learners

The research question for this study was: *Can non-Arabic-speaking Quran memorizers distinguish ungrammatical from grammatical sentences in Classical Arabic?* As outlined above (and discussed in more detail later), there is a rationale, in theory at least, for why they might be able to. Thus, the hypothesis under test was that they would be able to distinguish the stimulus types at above chance level.

3.1 Participants

The participants were eleven¹ male memorizers drawn from three different mosques in a UK city. Nine out of the eleven participants had memorized the whole of the Quran. They were all aged over 18, were born in the UK, with parents born in Pakistan and from the Pashtun community. None of them had learned any Arabic, modern or Classical, other than that entailed in reading and writing the Quran, which they undertook without understanding the text (Saleem 2015). It is not possible to say that they knew no Arabic vocabulary at all, because Pashto and also Urdu (one of the official languages of Pakistan), being languages associated with Muslim cultures, have imported many Arabic words. In addition, Arabic itself contains Persian words that have independently entered both Pashto and Urdu. All the same, it was accurate to state that these memorizers did not have any specific knowledge of Arabic.

3.2 Stimuli

For the experiment, a set of Classical Arabic sentences was required, some of which were grammatical and some of which were not. Two important considerations had to be kept in mind. Firstly, they needed to be sentences that the participants had never seen before. Secondly, it would be extremely unacceptable to introduce errors into sentences from the Quran. For this reason, texts contemporary with the Quran were used as the source for the test items. With the assistance of a Classical Arabic scholar¹ thirty sentences were selected that were similar in overall construction and length to verses from the Quran. Half were left as they were, and the other half were changed, to introduce a morphological error.

The errors so-introduced adhered to strict criteria. Firstly, they were associated with one of three marker types, number, gender or case, in equal measure. Second, it had to be possible to identify the error without knowing the meaning of words in the sentence. That is, the agreement needed to be at odds with another morphological marker, since these closed class forms would be much more frequent in the Quran, and carry their 'meaning' in part through their colligation with other markers. To exemplify this using English, it would be unreasonable to expect memorizers who did

¹The use of only eleven informants was a result of finding remarkable similarity in their responses, which suggested no additional value would be gained from further data collection. In lieu of a larger sample from this population, data were also collected from representatives of another population of memorizers, for the purpose of comparison, as described in section 4.2.

not understand the language to know that the word ‘duke’ refers to a male person, and thus inappropriate to expect them to spot the error in **The duke washed herself*. On the other hand, it would be reasonable to test their capacity to note the error in **He washed herself* because exposure to texts, even without much knowledge of the language, would presumably result in more exposure to the patterns *She ... herself* and *He... himself* than **He ... herself*.

It is difficult to fully illustrate using English the opportunities for agreement available in Classical Arabic, which is much more morphologically inflected. Thus, we illustrate now the sort of sentences used in the experiment. One of the five for each of the three types is given in Table 1. The correct version shows the morphological agreement across the sentence. The version with the error shows the morpheme that was changed, while the rest remained the same.

Table 3.1: Example stimuli

Type	Correct version	Translation	Version with introduced error
Gender	<i>Wayla-kum l-ajra ta'khuz-ūna a'mal-a tufsid-ūna sawfatalq-awna mā tahzar-ūna.</i>	Woe unto you! You take wages but perform bad work. You shall encounter what you are afraid of.	<i>Wayla-kunnal-ajra ta'khuz-ūna wa-l-a'mal-a tufsid-ūna sawfatalq-awna mā tahzar-ūna.</i>
Number	<i>La tastazilla wa-la taghbiti-l-ghanniya enda zikr-ī Khāsihan.</i>	Do not despise the poor and do not envy the rich, and be humble when mentioning Me.	<i>La tastazilla wa-la taghbiti-l-ghanniya wa-kun enda zikr-ī Khāsih-īna.</i>
Case	<i>Inna l-Allāh-kariha l-kum l-a'bas-a fī l-salāt-I wa-l-rafas-a fil-seyām-i.</i>	God does not want you to be frivolous during ritual prayer or to behave indecently during fasting.	<i>Inna l-Allāh-kariha l-kum l-a'bas-a fī l-salāt-a wa-l-rafas-a fil-seyām-i.</i>

In these examples, we see that, in accordance with the design criteria, correctness or incorrectness is morphologically marked and can be derived from the other morphological markers. For example, in the gender example, the interjection *waylakunna* (“woe unto you!”) that opens the sentence suggests that women are being addressed (the pronominal suffix *-kunna* is 2nd person feminine plural). The rest of the sentence contains four verbal forms marked as masculine plural by the ending *-ūna* or *-awna*. Thus, either *waylakunna* is an error for *waylakum* (“woe unto you”, masc. plur.), or the four verbs are all wrong (instead of the masculine plural forms *ta'khudhūna* “you take”, *tufsidūna* “you spoil, corrupt”, *talqawna* “you encounter”, and *taḥdharūna* “you are afraid”, one should expect the feminine plural forms *ta'khudhna*, *tufsidna*, *talqayna*, and *taḥdharna*, respectively.)

In the number example, the imperative *kun* (“be”) is masculine singular and according to the rules of Arabic grammar the predicate is correctly given in the accusative. However, *kun* is singular and the predicate should also be in the singular: *khāshi'an* (“humble”); *khāshi'īna*, with the plural marker *-īna*, is incorrect. *Khāshi'īna*, would be correct if the imperative was plural, that is, *kūnū*

instead of the singular *kun*. The plural of *tastazilla* and *taghbiti*, the other two imperative singular verbs, would then be *tastazillū* and *taghbitū*.

As far as the case sentence is concerned, in Classical Arabic every preposition must be followed by a noun or pronoun in the genitive. In this sentence, *fī l-ṣalāta* is incorrect because the preposition *fī* (“in”) is followed by a noun that has the marker of the accusative, *-a*.

In addition to the two sets of test sentences just described, fifteen sentences were selected from the portion of the Quran that the participants had memorized, for use in task 1 (see below).

3.3 Design

The participants were asked to undertake three tasks, the first two of which involved sorting cards on which individual stimulus sentences had been written. In task 1, they were given forty-five individual cards featuring, respectively, the 15 sentences from the Quran, the 15 correct sentences of Classical Arabic, and the 15 incorrect sentences. The cards were shuffled into random order, and they were asked to separate them into two piles: sentences from the Quran and sentences not from the Quran. The purpose of this first task was to establish that the participants were able to examine text in Arabic script and do something with it. It was predicted that they would have no difficulty with this task, since they were accustomed to seeing, and reading, the Quran sentences.

The second task involved a fresh set of just the non-Quranic sentences, which they were asked to separate into correct and incorrect. In both the first and second task they were asked to read the sentence aloud, since this was anticipated to help them judge its status. In the third task, the pile of cards that they had separated out as incorrect was used. For each sentence, they were asked to read it aloud and then say where they believed the error was and, if possible, correct it. Note that the pile used in task 3 contained only those sentences with errors in that they had picked out as incorrect, and it contained also any correct sentences that they had identified as containing an error.

3.4 Analysis

Task 1 was easily accomplished by the participants. The combined results are shown in Table 2. In only nine instances out of 165 (15 x 11) was a Quranic verse judged to be non-Quranic. Rather more non-Quranic verses were judged to be Quranic, but still it was less than 10% (30 out of 330, i.e. 30 x 11).

Table 3.2: Combined results for task 1

	Judged as Quranic	Judged as non-Quranic	Total
Quranic	156	09	165
Non-Quranic	30	300	330
Total	186	309	495

Fisher’s exact test was used² to compare the actual distributions with those predicted by chance. For the combined group, the difference was highly significant ($p < 0.0001$, one-tailed). Next, each

² The sample was too small for a linear regression. Use of both Fisher’s exact test and chi squared.

participant's individual performance was analysed. The statistical values ranged from 11.5 to 45 and all results had a p value of less than 0.01.

Participants performed at this level even though the Quranic sentences were presented out of context: they were isolated sentences picked up from different parts of the Quran at random (though excluding parts that had not yet been memorized). The participants' behaviour while performing the task was consistent with having a strong mental representation of the Quran verses as compared to the non-Quran texts. Although their speed of response was not measured, there was a noticeable tendency for the Quranic verses to be categorised more quickly than the non-Quranic ones. Moreover, the participants were not fluent in reading sentences from unseen Classical Arabic texts and, at times, found it difficult to pronounce them correctly.

In task 2, it was a different story, with little evidence that the two stimulus types could be distinguished (see Table 3). A Fisher's exact test gave a non-significant p value of 0.2158 (one-tailed).

Table 3.3: **Combined results for task 2**

	Judged as grammatical	Judged as ungrammatical	Total
Actually grammatical	95	70	165
Actually ungrammatical	103	62	165
Total	198	132	330

Examined individually, the Fisher's exact test values ranged from 0 to 3.393, and, with all p values greater than 0.05, none was significant. Thus, the hypothesis that the Quran learners would display sensitivity to morphological patterns in unseen Classical Arabic sentences was not supported.

Task 3 sought to understand the basis on which sentences had been judged ungrammatical. Each participant was asked to read aloud and then comment on the sentences in their 'ungrammatical' pile. Table 4, which reports only those items in the 'ungrammatical' pile that actually were ungrammatical, shows low rates for locating the error, and even lower ones for correcting it.

Raises a potential problem, in that the stimuli themselves are a potential source of variance (for discussion of how individual sentences were responded to in tasks 2 and 3, see [reference withheld]). However, a statistician confirmed, after simulating a larger dataset, that these tests offer a reasonable account of the patterns

Table 3.4: **Identification of error location and cause in task 3**

Participant	Correctly identified as ungrammatical (out of 15)	Location of error correctly identified (out of n correctly identified)	Correct explanation of error given (out of n correctly identified)
1	8	1	1
2	6	0	0
3	2	0	0
4	4	0	0
5	8	0	0
6	6	1	1

7	5	4	0
8	5	5	2
9	7	2	0
10	5	4	1
11	6	3	1

However, these low figures are still meaningful. While it is easy to understand how a random allocation of sentences to piles could give many correct answers by chance, it is much less obvious how chance could lead participants correctly to pinpoint what the error was, let alone come up with a correction. In addition, it is useful to examine whether errors in all three types of morphological marker (gender, number and case) were equally likely to be identified.

Dealing with the latter issue first, ungrammaticality in gender agreement was the most likely to be correctly categorised as such, with 29 instances out of 55. However, this was only a little over 50%, which is chance level. Number agreement errors were only correctly categorised 19 times out of 55 (34.5%) and case ones 14 times out of 55 (25%). These low levels reflect the overall conservatism of the participants, who tended to judge sentences grammatical more often than ungrammatical (see Table 3), and it seems that the gender type was elevated by a greater genuine awareness of errors in that type.

Of the 29 instances of correct categorization for gender, 11 were accompanied by a correct location of the error, though only three participants were able to indicate what the word-ending should have been (and no two participants did so for the same sentence). In contrast, sentences with an ungrammatical number agreement only attracted two correct locations of the error (out of 19). Only in one case could the participant correct the error (replacing *Qālū* with *Qāla*), and he was not able to say why it was correct. Case agreement errors were located only four times (out of 14), and only one of these errors was corrected. It should be noted that across the entire sample, there were no instances at all of an error being located by more than one person. In sum, we see from these results a low level of sensitivity to errors. It falls below the threshold for significance in statistical terms but we cannot completely discard it as meaningless. The explanation is difficult to adduce from the group as a whole, but looking at the individual performances, it is a little easier to understand.

Participant 7 correctly located errors in four sentences (Gender 3, Case 1), participant 8 in five sentences (Gender 3, Number 1, Case 1), participant 10 in four sentences (Gender 3, Case 1), and participant 11 in three sentences (Number 2, Case 1). Participant 8 provided correct replacements for errors in two sentences and participant 11 in one. These four participants were also more confident in their decisions than the others. The performances are still at a low level, but they do suggest that individual variation may be a factor in how well linguistic information is taken in. Later, we return to this matter, since it will be proposed that Quran learners have a particular approach to learning that some may find easier to adopt than others.

4. Discussion: why did the Quran memorizers not perform better?

Figure 2, presented earlier, laid out how memorization might lead to the extrapolation of implicit knowledge of an L2 grammar. Yet we found little evidence of it. This finding resonates with

observations by Boyle (2006) in relation to memorization and learning in Islamic schools in Morocco, Yemen, and Nigeria:

On a basic level memorization of the Qur'an is associated with knowledge of the Qur'an, although not in the Western sense of being able to understand and explain it, but in the sense of being able to recite it. ...[T]he various groups and ages of learners I observed in the three countries were generally unable to explain what they had memorized (p. 487).

The achievements of non-Arabic-speaking Quran memorizers in terms of execution are particularly striking given that they are not able to use semantics to assist their recall. Where actors would identify features in the narrative structure to help anchor their memorization (Noise & Noise 1996), these memorizers cannot do so. Certainly, they deploy mnemonic devices (see Figure 2) but necessarily rather shallow ones, compared to what would be available if they understood the text.

4.1 The relationship between memorization and understanding

If you understand something, really understand it, you will have very strong impression and can memorise it without much effort (Marton et al 1993: 73).

As outlined below, it has been argued by some researchers that successful memorization is only possible with understanding. However, the context of that research is substantially different, and we must examine carefully the extent to which the claims are relevant to Quran learners. Firstly, there is a difference in what the memorization is for. Previous studies identify memorization as a means to achieve effective mastery, or temporary recall, either of content (Cooper 2004; Dahlin & Watkins 2000; Marton et al 1993) or of linguistic form (Ting & Qi 2001; Ding 2007; Wray & Pegg 2009; Dai & Ding 2010).

Regarding content, Cooper (2004: 289) identified in Chinese accountancy students a specific “tradition of memorization through repetition [that] can be used to deepen understanding and achieve high levels of academic performance”. He found this technique more effective than the surface memorization approach used by Australian students. Dahlin & Watkins (2000), similarly, found that while Western students focussed on the process of memorization, their Hong Kong Chinese counterparts focussed on the content. Furthermore, nearly twice as many Chinese (60%, n = 48) as German-Swiss students (33%, n = 18) agreed with the statement “Repetition plus ‘attentive effort’ can lead to new meaning” (p. 68). Thus, as Kennedy (2002: 433) suggests, in the Chinese tradition,

Memorization has never been seen as an end in itself but as a prelude to deeper understanding—mentally ‘photocopying’ texts, committing them to memory, enabled the ‘learner’ to savour and reflect on them later, and, finally, to integrate them with his/her prior learning and experience.

Of course, Quran memorization is not 'an end in itself'. However, its purpose is not to enhance understanding of the content. The memorizers do not consider that they *need* to understand it as part of their recall.

When it comes to language learning, memorization is again recognized as potentially playing a role, though the caricature of Chinese learners engaging in shallow, rote learning is vociferously challenged. For instance, Liu (2002) states:

It can be argued that memorizing words and phrases does not necessarily mean rote-learning long lists of vocabulary. If it is based on the process of understanding the materials first by means of elaborate study of the items, it may result in better and longer retention in students' memory.

As noted earlier, Ding (2007) found that memorization could be the gateway to highly accurate command of a second language. Such a command can even over-state the learner's knowledge. Wray and Pegg (2009) showed how extensive verbatim learning could enable IELTS test-takers to outwit the protocols of the marking system, resulting in high scores for accuracy and appropriacy that belied their actual knowledge. It was achieved by memorizing lengthy expressions that could be used generically across topics, e.g. *In this essay, I will be presenting my opinion on why I believe that...; There are three reasons for claiming that ...; To sum up, it is possible to conclude that....* Wray and Pegg observe that since this practice is consistent with what native speakers learn to do under the auspices of stylistic choice for genre, it is difficult to judge it 'wrong', even though assessors recognize its contribution to an overestimation of the candidate's linguistic capabilities.

One could argue that the Quran learners are like the IELTS test takers in Wray & Pegg's study. They display accurate output based on memorization and recall, without the understanding to match. However, Wray & Pegg do not suggest that these IELTS test performances would be possible without *any* understanding of the internal content. Although they observed a marked reduction in linguistic accuracy in the novel material between the accurate generic clauses, it is not plausible that the learners had no knowledge of the formal and semantic features of what they had memorized.

Can, we, though, speculate that the Quran learners would learn faster, or better, if they did understand the text? We will return to that question later. For now, we turn to the question of whether their failure to identify the ungrammatical sentences of Classical Arabic was because they did not understand the text. In the light of the existing research literature, it seems entirely reasonable to hypothesize that this is so. And the hypothesis was tested by giving the same task to memorizers who had a much greater potential to gain semantic access to the text.

4.2 Does increased capacity to understand the Quran text result in greater sensitivity to its linguistic patterns?

Four Quran learners who were native speakers of Palestinian Arabic were given tasks 2 and 3 as described earlier. They were all male, aged 18 or over, and born in the UK. None had studied Arabic at school. This meant that they had no literacy in standard modern Arabic, only native

speaker knowledge of a spoken dialect. To contextualise this level of knowledge of Arabic, it should be noted that modern standard Arabic is “essentially a modernized form of Classical Arabic” (Kaye 1987: 666), in which the grammar has changed little:

In fact, most students are amazed at the easy transition between reading a modern novel and a sūra of the Qurān (vocabulary and stylistics are other matters, however) (ibid.).

It follows that Quran memorizers, familiar with modern standard written Arabic, would find it relatively easy to identify morphological errors. On the other hand, the colloquial, spoken languages have a simplified structure, including a reduced case morphology (Kaye 1987: 667) in addition to sufficient features for speakers of different dialects not to be mutually intelligible (ibid).

Although speakers of colloquial Arabic would not be able to understand Classical Arabic, they would be expected to have greater capacity to apply their native speaker knowledge to prise it open than Pashto speakers would. To put it another way, if the task of extrapolating knowledge about Classical Arabic patterns was simply too difficult for the Pashtun memorizers we would anticipate a lower threshold for the Palestinians. The question under consideration was whether, being better equipped to notice patterns in the Quran text, these memorizers would demonstrate a greater level of implicit learning.

Table 4.1: Task 2 results for Arabic speakers

	Judged as grammatical	Judged as ungrammatical	Total
Actually grammatical	38	22	60
Actually ungrammatical	39	21	60
Total	77	43	120

As table 4.1 shows, the Arabic-speaking participants performed no better than chance on the categorization task. A Fisher’s exact test gave a p value of 0.5 (one-tailed). The individual performances for participants gave statistical values between 0 and 1.42, and none was statistically significant. On the other hand, the Arabic-speaking memorizers were slightly better at pinning down what the error was once they had found it (task 3). Two of the four participants correctly identified five errors each (out of 15), and were able to explain or correct four of them. A third participant correctly identified six of the errors, and was able to explain all of them.

It seems that they knew some patterns and not others. The ones they knew, they got right. So, although the statistical tests report a chance level of response, that is more about the chances of them encountering an example they could do, rather than only about them guessing when they didn’t know the answer. It is not clear whether their ability to explain and correct the errors was the result of their memorization or if they already knew these patterns because of their being native speakers of a dialect of Arabic, and being familiar with standard written Arabic. However, if extrapolation from the memorization of the Quran were indeed happening, we might expect that, with the advantage they had, they would have performed at greater than chance level overall. That

they did not perform that well, invites us to consider other explanations for the absence of linguistic intuitions in the original Pashtun, Quran memorizers.

4.3. A barrier to learning?

We need to reconsider the model in Figure 2, in the light of the failure of both the Pashtun and the Palestinian Quran memorizers to display much evidence of implicit linguistic knowledge despite their repeated exposure to, and production of, correct formulations of Classical Arabic. In particular, we shall explore the possibility that Quran learners deliberately set up a barrier to learning (Figure 3). In order to see why this might be the case – that is, what benefit there would be to them in doing so – we must return to the research literature.

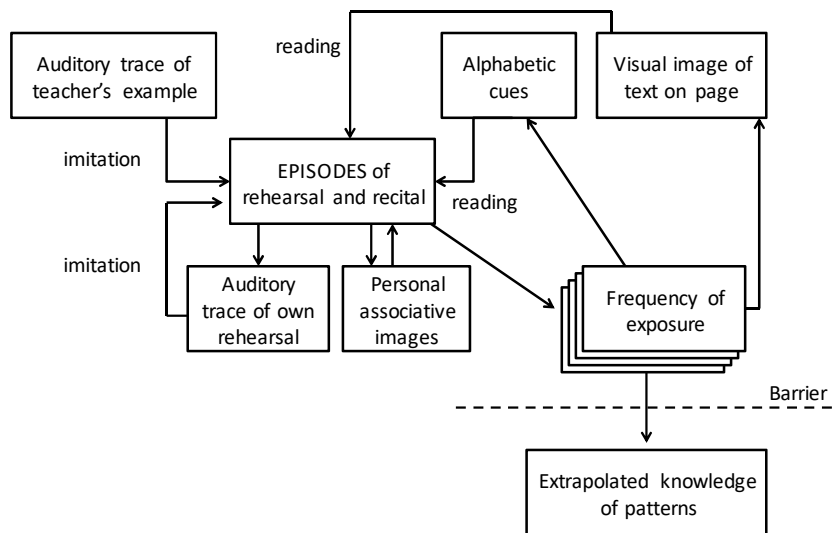


Figure 4.1: A barrier to learning?

4.4 Inaccuracy in memorization for language learning

As noted earlier, it is easy to reason that L2 learners might find text memorization an easy win. Although it takes effort, so does language learning in general. Rather than learning individual words, and the rules for combining them, why not memorize complete, grammatical sentences – preferably useful ones – and wait for intuitions about what else might be nativelike to filter through on the basis of frequency of exposure and, hence, familiarity with correct formulations? Two studies to examine this question were conducted by Wray (2004) and Fitzpatrick & Wray (2006; Wray & Fitzpatrick 2008, 2010). Participants prepared for a ‘performance’ in which they should speak fluently and in a nativelike way, by memorizing sentences that had been prepared for them by a native speaker, in accordance with what the learner anticipated needing to say.

In both studies, it was found that memorized material was disrupted by learner errors, even though it was in the interests of the participants simply to internalize the target forms and reproduce them.

Fitzpatrick & Wray (also Wray 2008) propose that it is difficult for learners to gauge how much effort they need to put into memorization, because their superior receptive knowledge of the language blinds them to gaps in their productive knowledge. To put it another way, learners will tend to believe they have done enough for it to be possible to recall the text accurately, when in fact their productive knowledge is inadequate to make good any lapses in memory.

Central to this explanation of why memorization is less successful as a learning tool than it appears able to be, is the matter of what learners do with the knowledge that they extrapolate about the language on the basis of their exposure to it.

4.5 Trial and error in language learning

According to Ellis & Sinclair (1996), when learners rehearse, they become able to see and notice regularities and patterns in word sequences. In other words, they abstract knowledge about associations among morphemes and words. Hummel & French (2010) suggest that repetition can enable learners to pay attention to formal aspects of language even when they have not been asked to pay attention to them.

However, in relation to both first and second language learning, researchers set memorization in balance with creative exploration and use of language forms (Bardovi-Harlig 2002, Hakuta, 1974, Myles et al, 1998, Nattinger & DeCarrico 1992, Peters 1983, Stevick 1989, Weinert 1995, Wong Fillmore 1976, Wray 2002). This means not only that repetition and memorizing are recognized as inadequate on their own for mastering a language, but also that the extrapolation of linguistic patterns from memorized (or frequently encountered) material is not consolidated until it is deployed to say new things. Use requires pushing at the boundaries of what is already known, to say things that have not been previously encountered.

In communicatively-based learning, such use will be expected long before enough input has been encountered for reliable judgements to be made about what it might be possible to say within the bounds of the language's grammar and collocational distributions. As a result, learners will produce errors. Errors are generally considered tolerable if the payoff is that the learner manages to convey the desired message. More than that, "we can regard the making of errors as a device the learner uses in order to learn" (Corder 1967:167). However, the value of errors is reduced where the learner is not aware of them, or does not know how to fix them.

Figure 4 shows how extrapolated knowledge is deployed in creating new forms. It entails taking risks about what the target language can tolerate. The learner's output becomes part of his own, and others', input. Since learners cannot distinguish this output from more target-like material, it gradually contaminates the pool of language to which they are exposed (whether or not memorization plays a major role). As a result, the next round of extrapolated knowledge may feature patterns that are derived from non-target-like sources. Thus, over time, the process of extrapolation, in feeding the capacity to be creative, corrupts the fidelity of the input, and reduces the learner's capacity to adduce nativelike intuitions.

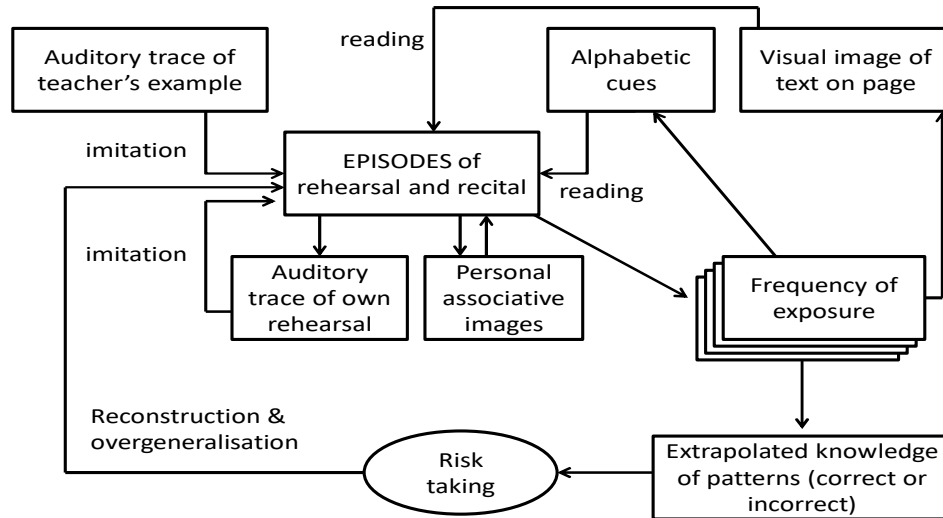


Figure 4.2: **The feedback loop**

It was suggested earlier that Quran learners put up a barrier to prevent them extrapolating knowledge from their experience of Classical Arabic (Figure 3). We can now see why that might be. It is contrary to their interests to take any risks with the text. The less they understand the text, and the less they allow themselves to identify patterns in the language, the less likely it is that they will start to take risks, based on their receptive knowledge, about when to stop rehearsing and trust to memory, when it is in fact their productive knowledge that will determine the accuracy of recall.

5. Discussion and Conclusions

It is the sacred duty of a Quran memorizer to exercise total accuracy, since changing the text in any way is blasphemous. Although the Quran was initially orally transmitted, there has remained over time only one version. The unanimity about the Quran text on which all Muslims agree is in sharp contrast with other oral traditions, such as the tradition of epic poetry (Lord, 1960/2000; Parry 1928/1971; Rubin 1995) and other types of religious text, such as the Bible, of which there are multiple versions both in the original sources and in translation. The historical fact of 100% accuracy of the text over many centuries despite being passed through the memories and mouths of so many memorizers is remarkable.

In the study reported here, the memorizers' limited ability to identify morphological errors was contrary to implicit predictions in the research literature regarding both the potential role of memorization in language learning and the effect on knowledge of frequent exposure to patterns. This finding extended also to memorizers whose native language would give them a capacity to identify and deploy semantic hooks that could assist them with recall.

It can be argued that every time a memorizer put his focus onto the meaning, he would *risk learning* and this is a risk he could not afford to take, because learning leads to errors. Learning is about pushing at the boundaries of what one knows, so as to increase one's knowledge. But by

definition, that entails extrapolation, and languages are not sufficiently regular and predictable to make it possible only to extrapolate fully accurately.

Key to a complete and correct recall is a clean and faithful version as input (Bjork 1988; Anderson 2010), and it is vital that Quran memorizers do not contaminate their input through inaccurate production. They are trained to recognise the importance of word-perfect recall every time. We can compare the situation to that of a walker who is afraid of getting lost. He is safe if he never strays from the path. The disadvantage (if it be perceived as such) is that he never explores, and thus never gains confidence with the adjacent landscape. He knows no other route. Even if he sees other paths, he chooses not to take them.

The participants in this study did reveal a limited capacity to recognise patterns—it is perhaps unavoidable that some sensitivity develops. But in stark contrast to language learners, Quran memorizers may perceive such insights as a threat to their purpose rather than an opportunity consistent with it. They elect not to pay attention to any linguistic insights, because they do not want to know how the language works. For knowing how it works is a recipe for mislearning.

If this reasoning is correct, then the memorizers' failure easily to identify the morphological errors in the test sentences was not that they absolutely *couldn't* but that they did not *need to* and did not *want to*. The variation in sensitivity found between the test participants could be indicative of individual differences in the capacity to suppress noticing behaviours. If so, then, in contrast to standard language learning, it would be those who noticed *least* who would be most successful in their task, since they would be at the lowest risk of misremembering.

Research into L2 learning shows that a learner's attitude towards learning, and towards the language, plays a role (Dörnyei 1990, 2003). Typically, when researchers consider the failure of L2 learners to progress, they attribute it to negative affect. Quran memorizers are far from negative towards the language—indeed, their identity is significantly tied up with mastering one particular element of it, and their motivation is high. Yet their attitude towards it also seems to entail a barrier to internalising its patterns. Although we must conclude that Quran learning is an unusual and unrepresentative case, it does contribute to our understanding of the mechanisms of L2 learning, by mapping out what happens if one typical part of the puzzle is not in place.

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