

Inadequate Top-Down Information and Vowel Judgement

Wael M.S. Zuraiq*

Dept. of English Language and Literature, Faculty of Arts, The Hashemite University, PO BOX 330127 Zarqa 13133, Jordan

Moh'd A. Al-Omari

Dept. of English Language and Literature, Faculty of Arts, The Hashemite University, PO BOX 330127 Zarqa 13133, Jordan

Maisoun I. Abu-Joudeh

Dept. of English Language and Literature, Faculty of Arts, The Hashemite University, PO BOX 330127 Zarqa 13133, Jordan

Abdullah A. Jaradat

Dept. of English Language and Literature, Faculty of Arts, The Hashemite University, PO BOX 330127 Zarqa 13133, Jordan

Bassil M. Mashaqba

Dept. of English Language and Literature, Faculty of Arts, The Hashemite University, PO BOX 330127 Zarqa 13133, Jordan

Anas I. al Huneety

Dept. of English Language and Literature, Faculty of Arts, The Hashemite University, PO BOX 330127 Zarqa 13133, Jordan

Sabri Al Shboul

Dept. of English Language and Literature, Faculty of Arts, The Hashemite University, PO BOX 330127 Zarqa 13133, Jordan

Abstract—The current study evaluates the accountability of Native Listeners (NLs). The study recruited speakers from a mixture of Arabic dialects and accents as one group and LAFL as another group where both groups spoke actual Arabic words with long and short vowels in contrast. A main consequence of choosing the present experimental manipulation is the outcome that NLs of Arabic had increasingly slow right recognitions in the follow-on test. The conclusion of the present experimental manipulation supports the claim that the handling of words is delayed if data accessible to NLs is incomplete. Additionally, this experimental manipulation adds to our awareness of the accountability of the NLs themselves towards LAFL. The study is expected to assist in considering the accountability of listeners in the communication barrier as explained by the inadequate top-down processing.

Index Terms—listeners, vowel, Arabic, speakers, processing

I. INTRODUCTION

Recent studies on second language acquisition (Wiertelak, 2021; Borkowska, 2021; Pastushenkov et al., 2020; Wang et al., 2019; Stroud, 2019; Yashima et al., 2017) have managed to provide theoretical prudent accounts for the problem of pedagogical methods profoundly required to improve and boost communication between native and non-native speakers from different levels of language attainment. Such linguistic studies did not thoroughly invest equitable focus on the native listeners (hence NLs) themselves but on the speakers as the initial senders of the linguistic message (Effiong, 2016; Prohorets & Plekhanova, 2015). For example, Arabic language has a critical number of Learners of Arabic as A Foreign Language (hence LAFL) in the aftermath of September 2001. Commonly, the language of LAFL continually fluctuates as indicated by the communicative burden interlanguage puts on the NLs. A number of studies (Wede, 2014; Sincero, 2013; Eriksson et al., 2001) recommend that NLs cannot utilize the top-down data not provided

* Corresponding Author: zuraiq@hu.edu.jo

by the context of communication if some of such basic information is underprovided. In the current analysis of this study, the researchers attempt to prudently offer a practical experimental linguistic account of why NLs are ineffective in quick and precise understanding of LAFL. Furthermore, they aimed to examine the cost of such comprehension inadequacy. "Comprehensibility" clarifications expect that LAFL are less understandable. Lev-Ari (2015) found out that NLs boosted their dependence on the top-down strategy and shortened the bottom-up techniques. Yet, the linguistic inquiry is to imagine a communicative scenario in which top-down data is unavailable or incomplete. NLs may not utilize extra assets to the top-down measures if deficient data isn't somehow accessible by them when taking care of the language of LAFL. Henceforth, NLs may rely on bottom-up hints only and thus may be inadequate. At this point, this may result in hindering effective communication. NLs realize how to fortify the benefit of extra-phonetic information if and only if such phonetic information exists. NLs start with the general input provided by speakers and then with the phonetic setting and subsequently employ their language expectations only if they are truly available in the context (Lev-Ari, 2015). NLs utilize logical data, albeit sometimes it doesn't uncover adequate language data (Lev-Ari & Keysar, 2012). NLs of any naturally spoken language may show an assorted disturbance, disappointment, and some prejudice with unsuitable language outputs since such absence of ability may suggest an odd language, vulnerability, and inconsistency (Munro et al., 2006). Rubin (1992) utilized language tests of American English using a created photo of the subjects. This image belonged to a "White lady" and participants who listened to her voice appraised her discourse as complemented when compared to the "Asian lady". The participants in the above study had an option to remap the special depiction just once they accepted that the abnormality in speaking is brought about by a different speaker. The listener's preparation in Top-down uses all appropriate data originating in circumstance and immediate setting. Perusing complex penmanship is seriously very encouraging if peruses read a linguistic and significant articulation, yet the perusing is requesting once people read detached words. The assistance in perusing happens considering the fundamental piece of proof that the contiguous words are bound to give help given that the relevant data coordinates significance generally (Federmeier & Kutas, 2005). Insights concerning letters or sounds, word recurrence, and sentence development sort showing up input. The higher period of mindfulness in comprehension and linguistic assumptions do impact the bottom-up processing positively. And top-down linguist preparation dominates mindfulness as individuals start handling significant reasoning and incredible appraisal before working with subtle communication, handling starts from the normal to the specific; so, the impressions can oversee what people group by utilizing their different faculties. Previous perspectives control the methodology and the way people survey or assess the nature of dialects. Language listeners can sometimes accept certain language expectations about learners of Arabic as a Foreign Language. Top-down handling is a reasonably determined preparation. Along these lines, judgment on speakers is constrained by all accounts once people are unmindful of such norms. Hence, listeners can always work with an opinionated approach due to their immediate understanding of the linguistic context. At that point, they stand as an inclination headed for grasping discourse just by overlooking any remaining outside subtleties. What we see is significantly biased by foundations and mentalities, commonality and assumptions, inspirations, and feelings.

The phonological acknowledgment of contrastive vowel length fluctuates in its consistency. If a LAFL speaker displays a mistaken vowel term, the NLs may misinterpret expressions. The vowel measurements in almost all dialects and accents of Arabic implicate contrastive length (Abu Rabia, 2019). Arabic exhibits differences from long to partners (Al-Ani, 1970; Aissiou, 2020). To describe:

Short	meaning	Long	meaning
/ sal /	ask	/ sa:l /	drain forward
/ d ₃ id /	find	/ d ₃ i:d /	neck
/ ful /	flowers	/ fu:l /	fava beans

A few phonetic and phonological components may decide on the characteristic of imprecise pronunciation of Arabic vowels. In the first place, LAFL can display vowel imprecision, which brings about irregularity in creating precise vowel lengths. Interestingly, NLs who are new to LAFL evaluate LAFL as off-base (Rubin & Smith, 1990). Also, preparing delay sorts unfamiliar sounds to be viewed as problematic segment (Lev-Ari & Keysar, 2012). When NLs are informed that LAFL uttered the word, we guess that NLs do call for more opportunity for preparing and showing a more mistaken contrastive rate (Rubin, 1992). The current testing inspects the linguistic notion that NLs is impacted by their language expectation about learners of Arabic as a Foreign Language, which has an easing back tension on their capacity or ability to effectively distinguish a given phonological differentiation when realizing that LAFL delivered a portion of the uttered words. In principle, the current testing examines the comprehension capacity of the NLs without empowering appropriate linguistic or extra linguistic information. All in all, immediate context is totally detached from ongoing communication. For example, non-verbal communication, phonetic setting, sound, and basic setting are all missing. Such signals as often as possible help NLs address a few testing words by utilizing top-down preparation. The fundamental rationale behind the current testing and manipulation is to value the tactical power of the NLs in making Arabic communication more effective or somehow blocked when NLs have inadequate information regarding learners of Arabic as a Foreign Language. Moreover, this paper does not discuss consonant variation. For consonant variations see Omari and Van Herk (2016).

II. EXPERIMENT AND DESIGN

The recruited Arab speakers in this study speak Modern Standard Arabic (MSA) along with a spectrum of other regional codes such as Ammani Accent, Iraqi vernacular, Syrian dialect, and Cairene Arabic. The recruited LAFL speak American English. The current analysis in this study relied upon a few Arabic words (minimal pairs). The sets are obviously contrastive in vowel length where a change in length of the vowel results in a change in the meaning of the written and the spoken word. To begin with, the researchers in this study notified all hearers that they were going to listen to participants from different regions, yet the researchers didn't guide the participants that this test incorporated LAFL tokens. By the follow-on testing, the researchers informed all NLS to listen to native participants plus learners of Arabic as foreign Language participants. This control (manipulation) should notice the effect of the listeners' assumptions regarding the creations of learners of Arabic as a Foreign Language. All NLS now know that some tokens are heard from LAFL participants and native participants from different regional dialects.

A. Experiment

The first group of NLS of Arabic underwent a lexical "identification task". All NLS listened to word sets. Only a single expression was used in each test trial. The researchers notified the NLS of Arabic that a number of real and meaningful words would be heard over a headphone. And at the same time, 2 correctly spelled words would instantaneously come into view on the computer screen. The researchers invited subjects to choose accurately which of the 2 visually presented words exhibits a match with the heard lexeme. Those presented lexical items are contrastive pairs (similar in graphemes) but not the single grapheme which alters the contrastive vocalic duration. Minimal pairs from the original production experiment were evaluated two times by (NAL). Initially, NLS were not given information about the participation of LAFL speakers. This convinced the NAL that mixed words from diverse dialects and around the region were used, and the non-native ' stimuli were randomly embedded as well. Then, NLS were overtly notified to listen to minimal pairs from Arabic who are native and to listen to another group of Arabic speakers who are learners of Arabic as a Foreign Language. Such an instructional variation enabled the researchers to observe such force of participants' attitude towards length variation in vocalic distinctions. The NLS in the study were 40 students: 20 females and 20 males enrolled at Hashemite University. Their mean age is 20.1 with 1.2 SD.

B. Stimuli

Nine Arabic sets were utilized. Three insignificant sets were unmistakable in the length of the front vowel, and three of the sets were particular in the vowel duration. But the other three sets were different as far as the term of back vowels (see Table one below). By recording, uttered words were taken from discussions during normal classes at the university. The word sets addressed the focal issue of in-class debates in deliberately planned conversation exercises. Furthermore, the research group mentioned subjects to utilize the targeted words in very much shaped and characteristic sentences.

TABLE 1
VOWELS

Type	Length			
	Short		Long	
High front	/bir/	giving	/bi:r/	water will
	/ʕib/	chest	/ʕi:b/	criticize
	/sib/	curse	/si:b/	let go
Low front	/d ₃ ad/	worked hard	/d ₃ a:d/	generously donated
	/dar/	produced milk	/da:r/	home
	/fiad/	Sunday	/fi:a:d/	sharp
High back	/d ₃ ud/	be generous	/d ₃ u:d/	proper name
	/sud/	block	/su:d/	gloomy
	/ful/	flowers	/fu:l/	fava beans

All words were obtained from 10 native and 10 LAFL who articulated 18 words (3 words for every vowel) with an amount of 360 target words. The words were monosyllabic, mean is divergent if, and only if, the vowel is adjusted (short versus long). There are extremely minor contrasts across all Arabic regions in the length of vowels.

C. Design and Procedure

As the recorded sets for the judgment experiment were induced from 10 native and 10 externals, who articulated eighteen words (three words from every vowel), 360 objective words were obtained. The words were essentially monosyllabic sets where dissimilarity is attained only if the vowel is adjusted (short versus long). There are minor contrasts across all Arabic varieties in the length of vowels. Diversity in listeners from different scopes controls the listening result (Munro et al., 2006).

III. RESULTS

Models of mixed-effects were used to incorporate response/reaction time (RT), estimated in milliseconds (measure variable) and with 2 treatment variables: native-ness (native versus LAFL speaker) and test package (primary part versus second part). The testing comprised of every single possible variable and cooperation at stage 1 to eliminate

irrelevant ones expecting to accomplish a definitive model. By utilizing the calculated capacity and the binomial variance, the subjects' error rates were examined also. Accordingly, 2% of the measurements were isolated from the testing since they were very odd and not predictable with different reactions.

A mixed-effects model was significant in normal response time (RTs) including NLs' reaction to the insignificant sets for native, mean = 1103, as well as their response to negligible sets for learners of Arabic as a Foreign Language, mean = 1180, as the last fixed impact remained consistent (main testing), $p = 0.0001$. Furthermore, results revealed that subjects essentially ($p = 0.0001$) expanded the response time in the primary testing by around 80 ms. Yet, the model showed interactions concerning the trial part and the speaker's native-ness ($p = 0.001$), entailing that their effects on listeners' response time wasn't separate. Nevertheless, they relied on levels of former variables. The subjects' normal response time (RT) to the words verbally spoken by LAFL in the follow-on testing, mean = 1239, was less (58 ms) than the normal reaction time to the alike relating stimuli produced by the identical LAFL during the primary testing.

Assessment of right reactions shows that NLs responded precisely to both native and LAFL words through more than [80%] of sets across the primary part and in the follow-on testing strategy. The derivation is that NLs are phenomenal at recognizing LAFL' sets. However, results show that listeners displayed a 2% expansion in the judgment accuracy to the badge of natives during second testing [93%] differentiated from our primary division testing [95%]. Particularly, slight increments were connected with an impact of the acquaintance since NLs heard the same stimuli multiple times. Then again, NLs displayed a 6% decrease in the judgment exactness for the badge of the LAFL in the second part of the testing [78%] differentiated to their near precision for the similar badge of the LAFL in the second part of the testing [84%]. In any case, the analyst group expected it to rise because of the acquaintance. Standing out from native, LAFL submitted less differentiation between words in the pre-test and post-test.

The native Arabic subjects during follow-on testing expanded the log odd of the NLs' exactness by 0.27, which stood out from the primary testing. Alternately, the analysis showed interaction with LAFL in the following testing was [0.33] which is less than the log odds across the correct reactions towards indistinguishable LAFL during primary testing. As recently demonstrated, such a difference is small in the probabilities since the likelihood size for the right reactions was just boosted (i.e., almost 100%) for testing division and native-ness. The results of RTs and exactness rates imply that consciousness of vowel duration is dependent on the speaker's correct speech as well as on the NLs' tolerance of the LAFL speaker.

IV. DISCUSSION AND CONCLUSION

The current paper tried to examine listeners' consciousness of the phonemic vowel duration in Arabic as produced by non-native speakers. The language stimuli in the current investigation were produced by both natives and non-natives across detached Arabic words without context-oriented data. The single top-down detail that was determined to listeners was that the words in the second part of the test had some LAFL in the current study. The testing in this study did two pieces of a speech judgment analysis. In the first part, all NLs were not informed that the words were articulated by foreign learners of Arabic which is a lack of information that may or may not hinder their ability to accelerate the speed of identification of the Arabic words. After that, we had to tell listeners that both native and LAFL were included in the study. All listeners in the second manipulation took a more handling timing with the Arabic phonemic words of LAFL when listeners were informed about learners of Arabic as a Foreign Language. More Arabic words and thus (vowels) were misidentified by some of the NLs in the follow-on test which suggests that the NLs of Arabic were impacted by the prior anticipations or beliefs about the non-natives (Lev-Ari, 2015). The above testing tried to focus on a single perspective, that is NLs' mindfulness of such inclusion of "outlandish" utterers in the follow-on portion of the research. All Arab Listeners were not presented with other information regarding such learners of Arabic as a Foreign Language. At the point, when the native subjects were given one top-down detail (learners of Arabic as a Foreign Language), they did show somehow a less awareness rate, and they required more time for processing contrastive words. The assessment of such contrastive words will be somehow dependent on the prior information which is directly given to Arab listeners; expecting LAFL to be incompetent as indicated by postponed handling by Arab listeners. We believe that such listeners may had no top-down strategies to handle such a subtle situation, which normally smooths the predicted progression of tuning in by furnishing the listeners with insights concerning the anticipated acclimatization to LAFL speech. Also, it seems that vowel length of the LAFL may propose preparing to time if the NLs expect that the LAFL vowel term is uncertain. The isolated speech of Arabic words then may be impacted by the language mode of listeners' assumptions regarding the foreign speaker's linguistic background since we usually anticipate that foreign speakers are usually incompetent speakers and thus we as native listeners tend to underrate their language productions (Grosjean, 2008). Lev-Ari (2015) affirmed that NLs modify the style of handling time once native listeners anticipate a reduced amount of consistent "alien" discourse. In any case, Lev-Ari (2015) grouped those NLs with working memory as extraordinary listeners depending on setting-oriented data to anticipate the circumstance. Albeit some top-down strategies are missing (setting), listeners may not prepare the precise answer for the reason that accessible data wasn't giving satisfactory intricacy to smooth the comprehension of the speech. Listeners' forecasts started this end as the logical data of words was missing and hence listeners were not doing perfectly in the phonological intricacy.

The current inspection can extend the results of the testing to different sorts of people like aphasic and dyslexic individuals. Listeners whether native or non-native should attempt to show some degree of adaptability to imperfect

speakers. However, there could be a few cut-off points to such adaptability (Lev-Ari, 2015). The findings of the current testing give a point of reference commitment to the job of the past expectations about the accuracy of LAFL discourse. Listeners may decide not to conform to mistaken discourse, especially if no decent setting is available. Lev-Ari and Keysar (2012) inferred that if NLs survey natives, they assess them as generally correct, yet they appraised LAFL as less correct. They also maintained that when discourse exists through an unusual emphasis, listeners are not willing to accept it. Then they generate expectations about speech, as opposed to whatever LAFL genuinely say. In their view, there is additional energy that our minds need to process "uncommon" expressions. At that point, we tacitly assume the incorrectness of the LAFL speaker. Lev-Ari and Keysar (2012) claimed that listeners willing to adjust to LAFL discourse are proficient.

Different from most approaches dealing with second-language attainment that do not place any accountability on the NLs, the current testing examines NLs accountability. The central issue here was to identify the power of the NLs to improve or hinder communication. The testing embraced a novel methodology. We tested NLs twice: once without any background details concerning LAFL and another with one detail which is the fact that some LAFL are included in the Arabic stimuli. Such a manipulated test was carefully planned to show the processing situation of NLs. The noteworthy wrap-up is that NLs of Arabic ended the test with a reduced amount of correct acknowledgment of words once listeners realized the fact that some were learners of Arabic as a Foreign Language. Such normal consequence confirms the essential presumption that NLs can be very accountable for the consistent impediment of the language communication if they are not given the adequate information from the rich context. From a pedagogical point of view, students from unknown dialects need to attempt to expand their language exactness (phonetic and phonological) by trying to create native-like vowels to try to boost the positive effort of the NLs in trying to minimize the lag in perception. Tests in this "perceptual set" experiment provided undeniable commitments to the psycholinguistic perspective of the accountability of the NLs themselves, and the tests add to the comprehension of the connection between NLs and learners of Arabic as a Foreign Language. This helps us, researchers and educators, to profoundly think about the ignored capacity of NLs in executing effective discourse.

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Wael Zuraig graduated from the University of Kansas in 2005 with a PHD in Linguistics and now is an associate professor of Linguistics at The Hashemite University. He published almost 30 papers on varied topics in First and second language acquisition related to acoustic phonetic and phonological attainment.

Moh'd A. Al-Omari graduated from Canada with a PHD in Linguistics and now is an assistant professor of psycholinguistics at The Hashemite University. He published almost 10 papers on varied topics in psycholinguistics.

Maisoun I. Abu-Joudeh graduated from the University of Kansas in 2005 with a PHD in Linguistics and now is an associate professor of Linguistics at The Hashemite University. She published almost 15 papers on varied topics on syntax related to Arabic sentence structure.

Abdullah A. Jaradat graduated from the University of Kansas in 2007 with a PHD in Linguistics and now is an associate professor of Linguistics at The Hashemite University. He published almost 15 papers on varied topics on semantics of Arabic and proverb studies.

Bassil M. Mashaqba graduated from the University of Salford (UK) in 2015 with a PHD in Linguistics and now is an associate professor of Linguistics at The Hashemite University. He published almost 30 papers on varied topics in First and second language phonetics related to Arabic studies.

Anas I. al Huneety graduated from the University of Salford (UK) in 2015 with a PHD in Linguistics and now is an associate professor of Linguistics at The Hashemite University. He published almost 30 papers on varied topics in discourse analysis.

Sabri Al Shboul graduated from the University of Kansas in 2007 with a PHD in Linguistics and now is a professor of Linguistics at The Hashemite University. He published almost 25 papers on varied topics on the morphology of Arabic and grammaticalization.