The Sociolinguistic Salience of Linguistic Variables in Najdi Arabic

Nasser Mohammed Alajmi[1], & Abdullah Ghannam Alghannam[1]

[1] Prince Sattam Bin Abdulaziz University, Saudi Arabia

Correspondence: Nasser Mohammed Alajmi, Prince Sattam Bin Abdulaziz University, Saudi Arabia.

Abstract

This study examines the relative sociolinguistic salience of three linguistic variables in two Najdi dialects, the bedouin and sedentary dialects. The quantitative data elicited from sociolinguistic interviews in Alajmi (2019) shows that bedouins are converging on the sedentary dialect, to varying degrees across the variables. The aim of this study is to test whether the sociolinguistic salience of the variables is the reason why there is variation in the level of convergence. Three methods have been used to measure the relative salience of the variables, the Social Category Association Test (SCAT), dialect identification task and multiple interviewers. The data from all three methods agree with the level of convergence in the production data (Alajmi, 2019). The variable that shows high level of convergence to the sedentary variant was found to be salient, while the other variables which show low levels of convergence were not salient.

1. Introduction

The current study is an extension of the unpublished PhD thesis by Alajmi (2019) which examines a case of dialect contact between two social groups in Najd, the central region of Saudi Arabia. In this thesis, it was established, quantitatively, that a social group (Najdi bedouins, henceforth Bs) are accommodating to another social group (sedentary Najdi groups, henceforth Ss) in three linguistic variables, to varying degrees. For one linguistic feature, there is a considerable rate of accommodation, while for the other two there is slight to no accommodation. This study aims to test the hypothesis that the level of sociolinguistic salience of the examined variables is different. In other words, the variable exhibiting a high rate of convergence is expected to be salient, as opposed to the other two.

The three linguistic variables are:

- The short vowel merger /ʊ/, /ɪ/ > /ɪ/: In Classical and Standard Arabic, the short vowel system consists of three vowels: /a/, /ʊ/, /ɪ/. The S dialect in Najd, as well as many modern Arabic dialects, has undergone the merger /ʊ/, /ɪ/ > /ɪ/. Thus, almost all occurrences of /ʊ/ are realized as /ɪ/. The Najdi Bs, however, have retained the distinction between the two vowels. Therefore, the Najdi form for 'all of it' is realized in B dialect as /kʊllaha/, while in the S dialect it is /kɪllaha/.

- Suffixed pronoun for 3rd person singular masculine object/possessive (henceforth, 3SM suffixed pronoun): This pronoun is realized as /-ɪh/ in B dialect and as /-ah/ in the S. For the Classical Arabic form *kita:bu-hu* 'his book', the Najdi B form is *kɪta:b-ɪh* while the S is *kɪta:b-ah*.

- The imperfect prefixes (ya-/yɪ-, ta-/tɪ-, na-/nɪ-): The alternation between /a/ and /ɪ/ in imperfect prefixes across Arabic dialects has been noted by the ancient Arabic grammarians who referred to it then as *talatalah* (Rabin, 1951:61). The Bs use /a/ in all imperfect prefixes while Ss use /ɪ/ in these prefixes, except the 1SC prefix which is always ʔa- for both groups. Therefore, the B forms *ya-ktɪb* 'he writes', *taktɪb* 'she writes' and *na-ktɪb* 'we write' are realised as *yɪ-ktɪb*, *tɪ-ktɪb* and *nɪ-ktɪb* in the S dialect.

In the first part of this study, we shall attempt to discuss the role of sociolinguistic salience in dialect contact, the different sociolinguistic salience models, the categorization of linguistic features (based on salience), and the approaches of measuring salience, the approach of *criteria-list* and the *experimental* one (MacLeod, 2015). In the second part, we shall present the data and results of the experiments on the sociolinguistic salience of some of Najdi Arabic dialects' features.

Background

Salience is of the most underdefined terms in sociolinguistics. From a subjective perspective, it is defined as simply the speaker's level of awareness of a linguistic feature. From an objective perspective, it is "the property of a linguistic item or feature that makes it in some way perceptually and cognitively prominent" (Kerswill and Williams, 2002:81); or as defined by Siegel (2010:129) "the characteristic of being easily noticeable, prominent or conspicuous". Torbert (2004) points that most sociolinguist has a knowledge of the concept of salience and which of the examined linguistic variables are salient. Nevertheless, there has not been a consensus on what makes a linguistic feature more salient than the others, what it implies. There is also controversy on what the levels of sociolinguistic salience are and how it can be measured.

Role of Salience in Dialect Contact

As independent factor, 'Salience' has been applied in many studies of dialect contact (e.g., Auer et al., 1998; Nolan, Kerswill and Wright, 1991; and Trudgill, 1986). It was also applied in language contact and language learning (e.g., Mufwene, 1991; Bardovi-Harlig, 1987). In these studies, the linguistic structures that were classified as salient were more likely to be either adopted or rejected by in the cases of dialect contact, preferred over other linguistic features in language contact situations, or even acquired sooner in some cases of language learning.

In the remainder of this section, we shall briefly shed some light on the behavior of salient features in the aforementioned studies of dialect contact.

Trudgill (1986) presents evidence from the dialect accommodation case in Norwich (Trudgill, 1974). He maintains that "it is indeed salient features of the target variety that are adjusted to" (Trudgill, 1986:37); he also asserts that *extra-strong salient* features are less likely to be used in the accommodation process. In Nolan, Kerswill and Wright (1991) and Kerswill (1985) *l-vocalisation* was established as stigmatized/salient/ in English varieties of south-eastern parts; hence it was observed that some speakers avoid it. Auer et al. (1998) investigate, in real time, the case of dialect accommodation by speakers of Saxonian in west Germany. It was found in the study that use of non-standard but salient features declined over time.

2. Literature Review: Models of Salience

Before we attempt to review the different models of salience, it is crucial to draw the differences between *subjective* salience, as opposed to *objective* salience (overtly discussed in Auer et al.,1998). Objective salience is the internal linguistic qualities of a linguistic variable that make it easily noticeable. However, subjective salience is the level of awareness of the lay speaker about a linguistic feature.

<div align="center">*Trudgill (1986)*</div>

To answer why some speakers are aware of some linguistic features more than the others, Trudgill suggests the following criteria. When applying these criteria, at least one must be present (Trudgill, 1986:11):

- A high-status form of the stigmatized variant is present. The high-status form is found in the orthography, but the stigmatized form is not.
- The variable is involved in linguistic change at this time.
- The realizations of the variable are phonetically significantly different.

Using Labov's classification of variables based on level of speakers' awareness, Trudgill proposes that these criteria might convert an *indicator* to a *marker* (i.e., more salient). In this model, a variable is ranked *extra-salient*, *salient,* or *not salient*.

The main weakness of Trudgill's model is it focuses on the internal properties of the variable. Although there is on external factor (involved in linguistic change), but it is debated by Kerswill and Williams (2002) as a result, not a cause, of salience.

<div align="center">*Auer et al. (1998)*</div>

Auer et al. (1998) examines other models of salience, e.g., Hinskens (1992) and Trudgill (1986), and provides parameters for measuring sociolinguistic salience. They draw the differences between objective criteria and subjective ones (Table 1). They debate whether subjective criteria are actually the outcome of linguistic-internal characteristics of the features.

Table 1. *Objective vs subjective standards for assessing sociolinguistic salience (Auer et al., 1998, p. 167)*

Objective Criteria	Subjective Criteria
Areal distribution	Usage in code-alternation
Articulatory distance	Perceptual distance
Lexicalisation	Comprehensibility
Continuous vs. dichotomous	Stereotyping/mimicking
Phonemicity	Representation in lay dialect writing

After applying these parameters to their study examining Upper Saxonian speakers' long-term accommodation, it was observed that few variables behaved differently than expected. For instance, some non-standard variants are resilient to change, even though they are salient. On the contrary, non-standard forms are dropped in the reading style, despite the fact that the variable was apparently not salient.

It was found that a variable can check all objective criteria and still contradicts the predictions set for salient variables in the process of accommodation. The randomness of association between objective and subjective salience (speakers' behavior) was addressed in their paper. It is acknowledged that in a new dialect a salient variant is adopted if it holds some prestige or is not stigmatized in the accommodating dialect. This agrees with the model of Kerswill and Williams (2002) which states sociolinguistic salience must take into account the social psychological factors.

Kerswill and Williams (2002)

Kerswill and Williams (2002) argue that salience cannot be discussed apart from considering language-external factors to help gain insights into the social patterning of linguistic features.   Their model of sociolinguistic salience proposes that extra-linguistic factors (element 3 of the model below) are "ultimately the cause of salience" (ibid:109).

Kerswill and Williams (2002:109) model of salience consists of the following components:

- There is a linguistic phenomenon for which the explanation might be attributed to salience of the feature(s) involved. Usually, such phenomenon will be a certain pattern involved in language variation, language change, the variable behavior in speech of individual speakers.

- Language-internal explanations, e.g., there is great phonetic distance, phonological contrast, semantic transparency, internally-defined naturalness, or a particular syntactic/prosodic environment.

- Language-external factors that are: pragmatic, cognitive, social psychological, and sociodemographic factors.

This model is based on the study of dialect levelling they conducted in three urban centers in England: Hull, Reading and Milton Keynes. This model of salience is arguably the most comprehensive; although it is criticized for not clearly showing how language-external factors are incorporated (MacLeod, 2015:5)

Perceptual salience (subjective)

Although the models above are concerned with which factors leading to the salience of a linguistic variable, subjective salience tackles the levels of speakers' awareness of a feature. It is also concerned with how linguistic variables belonging to a certain level behave similarly. Labov (1972:14) classified linguistic features based on speakers' awareness as: *indicators*, *markers* and *stereotypes*. *Indicators* are linguistic features embedded in a social matrix. They show social variation by age or social group. However, they tend to show no style shifting, and they have less evaluation force. *Markers* on the other hand show stylistic, as well as social, stratification. Lastly, *Stereotypes* are forms marked by the society, which are also prominently labelled.

3. Salience in This Study: Hypothesis and Research Questions

In language variationist studies, salience does not seem to be the focus of researchers. Yet, it is pursued as an explanatory factor, to account for why some linguistic features are preferred over others in data elicited from a dialect undergoing change. In the current study, we are further examining the production data in Alajmi (2019) which was elicited by conducting sociolinguistic interviews with 23 speakers. The data shows that one feature (the merger) shows accommodation to the S variable, while for the other two (the 3SM suffixed pronoun and imperfect prefixes) there is either slight or no accommodation. It is hypothesized that the feature that show high rate of accommodation is salient, compared to the other two.

The aim of this study is to collect additional data, the purpose of which is to quantify the relative salience of variables. We expect that the level of salience of the linguistic variables will agree with the production data in Alajmi (2019). That is, the rate of Bs' use of the S variant /ɪ/ (as opposed to /ʊ/) is higher than their use of S variants of the

other variables because the merger variable is salient while the other two are not.

We aim to answer the following questions:

- Are any of the examined linguistic variables salient?
- If yes, do salient variables behavior agree with the production data? (i.e., do salient variables show a higher rate of convergence?)
- What are the classifications of the linguistic variables according to Labov's taxonomy?

4. Methodology and Data Collection

MacLeod (2015) states that there are two approaches to operationalizing salience: the *criteria-list approach* and the *experimental approach*. The former represents the previous salience models discussed above. In this approach, a set of criteria is applied to linguistic variables to help evaluate their relative salience. In the latter, however, "the salience of a variable can be measured by the extent to which the presence of the variable contributes a particular social meaning to listeners." (MacLeod, 2015:85). It can be stated that the criteria-list approach incorporates both objective and subjective salience, while the experimental approach focuses on subjective perceptual salience. Next, we shall review the experimental approach.

The experimental approach involves audio stimuli containing the target feature, and listeners are asked to identify the dialect or social group of the speaker. Stimuli can be re-synthesised (for example by acoustically altering the F1 and F2 of vowels, as in Graff et al., 1986), spliced (simply replacing a variant with the target variant, as in Campbell-Kibler, 2009), or natural (extracted from authentic speech, as in Llamas et al., 2016). The listeners are asked to record their response in the form of a scale (e.g., Graff et al., 1986) or forced choices (e.g., Llamas et al., 2016). The percentage of correct identification of a dialect through a single linguistic feature can reflect the relative salience of that feature. The higher the percentage of correct responses is, the higher the salience. An additional criterion, reflecting the level of salience in such experiments, is the speed with which speakers record their judgment (Llamas et al., 2016). Arguably, the shorter the response time is, the higher the salience. To sum up, the experimental approach implements either a simple identification task, in which only the percentage of correct responses is measured, or else a more advanced task, in which both percentage of correct responses and response time are measured.

Another, but rather different, methodology which offers insights into the relative salience of a variable is evoking short-term accommodation (in the form style-shifting) by having multiple interviewers, each of whom speaks a different variety, interview the same speaker (Llamas et al., 2009). How is short-term accommodation related to salience? As suggested by Trudgill (1986), it is usually the salient features that are adjusted during accommodation. The premise of this method (used by Llamas et al., 2009), is that if the production patterns of a speaker are analyzed across interviews, each of which has been conducted by a different interviewer speaking different variety, it is expected that the rate of use of salient features will increase (converge) or decrease (diverge) according to the interlocutor's variety (Giles, 1984).

In the following sub-sections, we will review and discuss: (a) the application of the criteria-list approach to the current variables, (b) the experimental approach and (c) short-term accommodation in multiple interviews.

Application of the criteria-list approach to the current variables

The approach to measuring the relative salience of variables in this study is mainly experimental as it is sometimes challenging to apply the criteria for all variables; however, it is worthwhile attempting to apply the criteria-list approach to the current variables in order to see which criteria they meet and further support the experimental data, see Table 2 below. The list of criteria below is adapted from Auer et al. (1998). The criteria that are difficult to incorporate (or inapplicable) are excluded.

For the first criterion (phonetic difference), the merger is a lexical (phonological) variable, while the others are morphophonological. That is, the phonological variable occur in various parts of the lexical items, as opposed to morphophonological features which occur in a fixed part of the word (affix). The phonetic difference between the variants of the merger is reflected in the phonetic traits [+back] for /ʊ/ and [-back] for /ɪ/. As for the other two variables, the differences between the epenthetic vowels [ɪ] and [a] is reflected in [+high] for /ɪ/ and [-high] for /a/. The second criterion, involvement in the maintenance of a phonological contrast, applies only to the merger because it is found in the lexical root, as opposed to the other variables. The third criterion, areal distribution, applies to the merger but not the other variables. As discussed in Alajmi (2019), the merger has been completed in S and other dialects, while in B dialect it is in progress. This means that the S variant /ɪ/ is widespread (i.e., used by Ss and others)

compared to /ʊ/ which is used by Bs only. For the other variables, the S variants are not widespread; they are used by Ss only. The fourth criterion (usage in code-alternation) applies to the merger only. The last three criteria do not apply to all variables. None of the variables is reflected in the orthography, is subject to stereotyping/mimicking or hinders comprehensibility.

Table 2. Application of the criteria-list approach to the examined variables (criteria list is adapted from Auer et al., 1998)

	Criteria	Merger (/ʊ/ - /ɪ/)	3SM pronoun (-ɪh / -ah)	Taltala (ya- / yɪ-)
Objective	phonetic difference	✓	✓	✓
	Maintenance of phonological contrast	✓	X	X
	areal distribution	✓	X	X
Subjective	usage in code-alternation	✓	X	X
	representation in the orthography	X	X	X
	stereotyping/mimicking	X	X	X
	comprehensibility	X	X	X

It can therefore be stated that, based on the criteria-list approach, the merger is relatively salient as it meets four of the criteria, while the other variables meet only one.

The experimental approach in the current study

As discussed above, the experimental approach to salience depends on listeners' identification of a dialect or social group after listening to a word containing the target feature, produced by a model speaker. The reaction time of the responses can be also used as an indication of salience, along with the percentage of correct associations. This experimental design in sociolinguistics, developed by Llamas et al. (2016), is referred to as the *Social Category Association Test* (SCAT).

The SCAT

The SCAT is an adaptation of the *Implicit Association Test* (IAT), developed by Greenwald et al. (1998). IAT is a psychological test designed to measure *implicit attitude*, i.e., automatic (sub-conscious) evaluation, about various concepts (Greenwald et al., 1998, p. 1464). In this experimental design, the percentages of correct association and latency (measured in milliseconds) are calculated. It is found that longer latency is correlated with higher error rate in the association, and vice versa.

The sample for this experiment is 30 Bs from Najd grouped by Tribe (Ajmi, Dosari and Qahtani). The age of the participants ranges between 20 – 35, and they are all college educated.

SCAT is adopted in the current study and was designed using *PsychoPy* software (Peirce et al., 2019). The components of the experiment are as follows:

- *Stimuli*: following Llamas et al. (2016), the audio stimuli were all authentic recordings of Bs and Ss. Stimuli recorded by the same speaker were not played immediately after each other. Each word contains one variant only. All efforts have been made to make sure that there is no other variant (at least from the present study) in each stimulus.

- *Visual background*: in order not to distract participants, the visual background, shown whilst the stimulus is played, was plain dark grey. The order number of the stimulus appeared in the middle of the screen. The words were not written on the screen because they are in the spoken dialect.

- *Response recording tool*: the way in which responses are recorded in such experiments is crucial since response time is considered. In Greenwald et al. (1998), a regular computer keyboard was used. The participants were trained on the keys and their corresponding answer. Additionally, a visual reminder with labels, showing the keys and their corresponding answers, remained on the screen during each block of the experiment. In the current experiment, a more efficient tool, instead of the computer keyboard, was used. It seems to me that if the computer mouse is held with both hands, with each thumb above a button, it would be easier to record responses than on a keyboard. A visual reminder (Figure 1) showing the mouse buttons and the corresponding answers appeared immediately after the stimuli and lasted until the response is recorded.
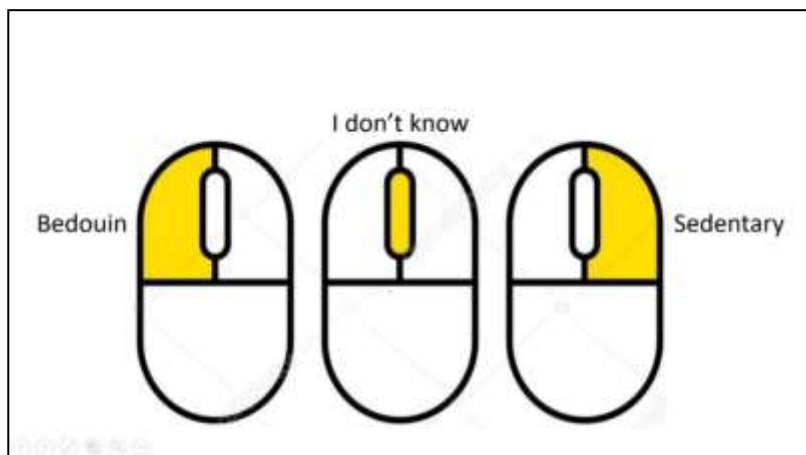
Figure 1. The visual reminder used in SCAT

- *Results*: after the experiment is finished, an Excel file of the results was automatically generated. The button pressed for each stimulus and the response time were both recorded.

Now we turn to the design and procedures of the experiment:

1. The order number of the stimulus appears in the middle of the screen.
2. After 1 second, the stimulus is played.
3. Once the stimulus ends, the recording response time begins, along with the visual reminder.
4. Once the response is recorded, the visual reminder disappears.
5. After 1 second, the number of the next stimulus appears, and this process is repeated.

As for conducting the experiment, the procedures and the purpose of the experiment were explained to the participants, and all their questions were answered. Then they were trained how to record their responses, using the mouse. Before starting the experiment, *PsychoPy* requires the name of the participant to be entered; this is used as the name of the results file. In our case the names of the participants were coded. After that, they performed two trial questions before beginning the experiments. It was emphasized to them that they would not be able to listen to the stimuli more than once, and that once a response is recorded, it cannot be changed.

Identification Task

This task is supplementary to the SCAT. Using the same stimuli as the SCAT, an online survey (in the form of a questionnaire) was designed and distributed via *Qualtrics*. The number of participants in this task is 34: 14 Bs, 10 Ss, and 10 from other groups.

Since it was not possible to monitor participants while conducting the experiment, response time was not recorded. Similar to previous studies that implemented this type of task, we are interested in the percentage of correct associations. A certainty scale, however, was also presented after each question.

As for the design of the task, the questionnaire was first explained using simple language. Secondly, information about the participants is gathered: group (B, S or Other), age, and education. Then, the first question is presented. Each question includes an audio play button to start the stimulus, and a question asking: *is this person?* The choices were: *Bedouin*, *Sedentary*, *Other* (text entry provided), or *I don't know*. After each question, the certainty measure (0 – 10, 0 being *uncertain* and 10 *extremely certain*) was presented.

It should be noted that the questionnaire was distributed to Najdi people (B and S) and additionally to people who were born, or lived most of their lives, in Najd but are originally from other regions of Saudi Arabia.

Multiple Interviewers

Bell's (1984) audience design model states that speakers might change their speech style (i.e., accommodate) according to their addressee. Bell reviews the evidence of style-shifting in Trudgill (1981), in which Trudgill analyzed his own speech in ten of the interviews he conducted, as an interviewer, in Norwich. Bell (1984:166-167) asserts that different rates of accommodation will be found across linguistic variables due to salience. It is stated that

indicators show little or no susceptibility to style-shifting, while markers do.

In Rickford and McNair-Knox (1994) and Llamas et al. (2009), a more systematic approach to test style-shifting according to addressee is provided. The speakers are interviewed by different interviewers, and the production pattern in one of the interviews is considered the default. The default pattern is then compared to the other(s) in order to analyze style-shifting patterns (i.e., rate of accommodation). In both studies, the salience of the variables is explicitly introduced as the reason why speakers show convergence in some features but not in others. It should be emphasized here that a complete shift is not expected, but it is the rate of use of salient features that is most likely to increase.

In the present study, Bs showed convergence to the S variant in the merger and slight accommodation to the 3SM suffixed pronoun but not in the imperfect prefixes. The interviews of the Bs in the main study (Alajmi, 2019) were conducted by a B interviewer, and yet the participant showed convergence towards the S variants. Therefore, it is worthwhile exploring whether Bs will show more convergence rate if they were interviewed by a S interviewer.

A friend of mine, an S linguist, volunteered to interview some of the speakers who had already been interviewed in the main study. Due to time limitations for both the interviewer and the interviewees, only three B speakers were selected to be interviewed by the S speaker. They are grouped by tribe (Ajmi, Dosari, Qahtani) since tribe was found to be the most significant factor, see Alajmi (2019). For the other factors, they are all young and their level of education is the same (college degrees).

The production pattern in the interviews conducted by the B interviewer will be considered the default pattern, and the new interviews by S interviewer will be then compared to it. It is hypothesized that in the new interviews Bs will show even more convergence in variables that showed convergence in the default pattern. However, it is predicted that there will be little or no convergence among those for which there was no convergence in the default pattern.

The salience of the variables is believed to be the reason why the convergence rate in some variables will increase (as a result of short-term accommodation) and not in the others. The results from comparison of the production patterns are expected to agree with the results from the SCAT and the identification task.

5. Results

In this section, the results of the SCAT, the identification task and the multiple interviews are presented.

SCAT Results

It should be noted that there was no variation in the data across tribes. In other words, participants from one tribe did not show higher association percentage and less response time than the others. Also, the two measures in the experiment (association percentage and response time) are not to be analyzed independently. A higher percentage of correct associations is expected to lead to a shorter response time and vice versa. The relevance of response time increases with the percentage of correct associations (Llamas et al., 2016)

The results (association percentage and response time) for the 30 B participants who took part in the SCAT is provided in Table 3 and plotted in Figures 2 and 3.

Table 3. *Association percentage and response time from SCAT*

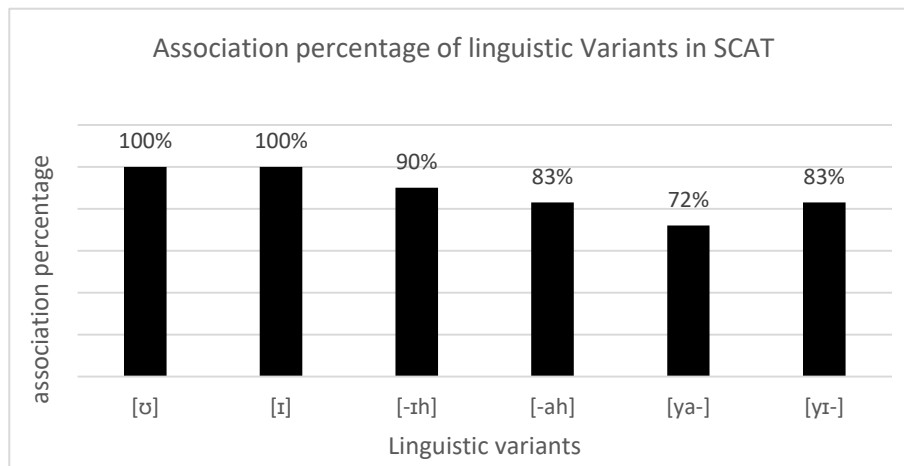| Participant | Response time | | | | | |
| | The merger | | 3SM pronoun | | Imperfect prefixes | |
	[ʊ]	[ɪ]	- ɪh	-ah	ya-	yɪ -
Average RT	0.7335	0.7844	1.3943	1.4644	1.7564	1.6844
STDEV	0.3736	0.2987	0.5937	0.492454	0.76969	0.867646
Association	100%	100%	90%	83%	72%	83%

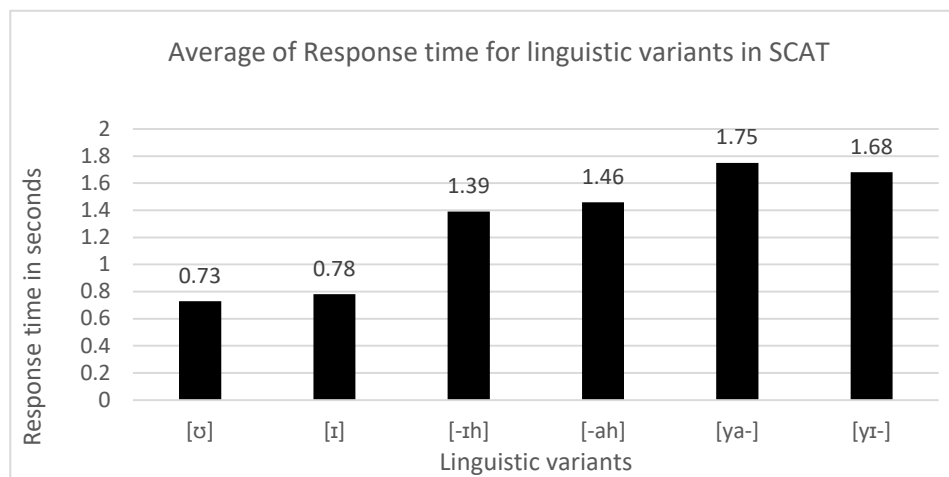Figure 2. Association percentage of linguistic variants in the SCAT

Figure 3. Average response time for linguistic variants in the SCAT.

The results show that the merger variants (/ʊ/ - /ɪ/) were associated correctly by all participants, while the variants of the other variables were mislabeled by some. The response time for the merger variants is the shortest, while for the other variants it is more than a second but less than two seconds for most participants. It can be stated based on these results that the merger is relatively salient compared to the other variables. This agrees with the production data as the highest rate of convergence was attested in the merger.

Now we turn to account for the difference between the association percentage and response time between variants of a single variable. The difference between /ʊ/ and /ɪ/ is minor, as manifested in the average response time. It can be claimed that the participants (all Bs) are as aware of /ʊ/ as they are of its prestigious variant /ɪ/. As for the 3SM suffixed pronoun, the response time is slightly longer than the merger, yet lower than the imperfect prefixes. This is rather expected, as the 3SM suffixed pronoun exhibited slight rate accommodation by young Bs in the production data (see Alajmi, 2019). Lastly the response time for imperfect prefixes the longest, which is not surprising given the level of accommodation by Bs in the production data.

Identification Task Results

As discussed above, in this task only correct/incorrect associations will be used as a criterion for relative salience. A certainty scale (0 – 10, 0 being *uncertain* and 10 *extremely certain*) was included to compensate for the lack of a response time measurement. But it is found that the former is not as reliable as the latter, as we will see.

34 participants (14 Bs, 10Ss, 10 others) responded. The forced choices for each question were *B*, *S*, *other* or *I don't know*. If for instance the stimulus represented the B dialect, all other choices were coded as *false*. If someone chose *other* and entered a name of a B tribe, it would be counted as *true*, but that did not occur in the results. The data from the certainty scale will not be used because the responses do not reflect awareness of the variants. Rather, most

participants responded with 10 (extremely certain) for all stimuli, even the ones they associated incorrectly. Therefore, only correct/incorrect association will be used in the analysis of this data set.

It is expected, based on the production data and SCAT, that majority of participants will associate the variants of the merger correctly, while for the other variable there will be mistakes. The data from the identification task is plotted in Figure 4 for all variants. In Figures 5 – 10, the responses for each variant, showing correct/incorrect responses by the group of participants, are provided.
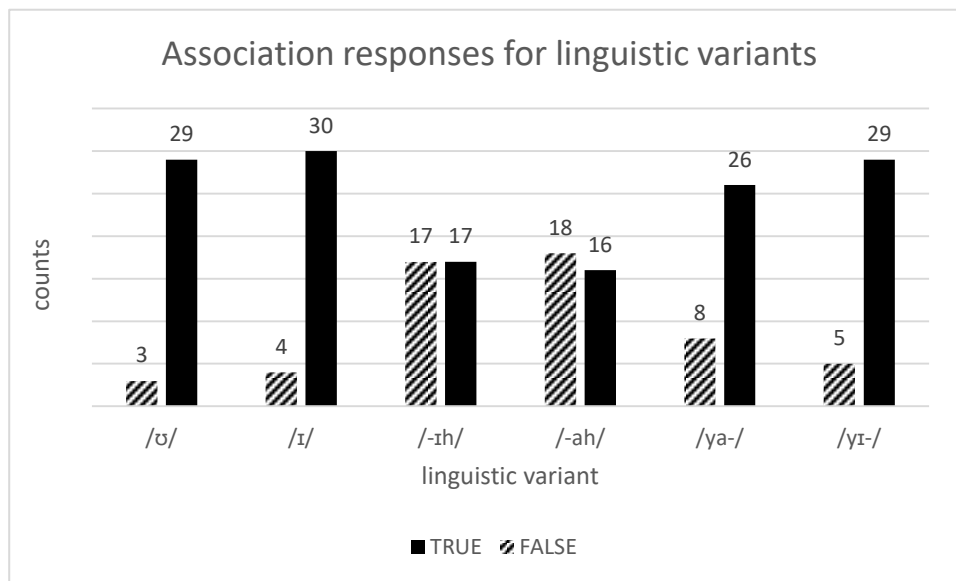
Figure 4. Identification of the linguistic variants by response type (True / False). The total is 34 for each, except for /ʊ/ (32).

The results in Figure 4 agree with the production and SCAT results, except for the imperfect prefixes. The merger variants were identified correctly by the majority of participants while the 3SM suffixed pronoun is identified correctly by 50% of the participants. This is expected and further indicates that the merger is more salient than the suffixed pronoun. Surprisingly, however, the correct association of the imperfect prefixes is relatively high, almost as high as the merger. This can be attributed to the major flaw of such tasks, which is overcome by the SCAT. In these tasks, including the current one, time is not controlled. As opposed to the SCAT, in which automatic (sub-conscious) responses are targeted (e.g., IAT, Greenwald et al., 1998), in simple identification tasks listeners mostly record their conscious responses. In this particular task, in which listeners accessed the questionnaire online, we do not know how long they took to record their responses and how many times they played the stimuli. Furthermore, although the variants of each variable have been shuffled, some participants might have modified their responses after listening to both variants. In other words, one might associate a variant with the B dialect incorrectly, and after listening to the B variant, he might change the previous response to the correct answer. It can be also claimed that when listeners record their conscious answers, they might look for other prosodic features of voice (e.g., voice quality, pitch, and speech rate) to help identify dialects or social groups (Giles and Billings, 2004). Since the stimuli in this task are authentic recordings, it is possible that this is the case.

As for Figures 5 – 10, the observations that need to be highlighted are:

- No B mislabeled /ɪ/ (Figure 6). As in SCAT, all Bs identified the prestigious S variant /ɪ/ correctly.

- In the identification of the variants of the 3SM suffixed pronoun, each group identified their variant better than the other group (Figures 7 and 8). In the identification of the B variant - ɪh, 11/14 Bs identified it correctly, while 9/10 Ss mislabeled it. A similar, but reversed, pattern can be seen in the identification of the S variant -ah; i.e., more Ss identified it correctly than Bs.

- More participants from the *other* group identified yɪ- as S than ya- as B (Figures 9 and 10). This is expected since ya- is the Standard Arabic form.
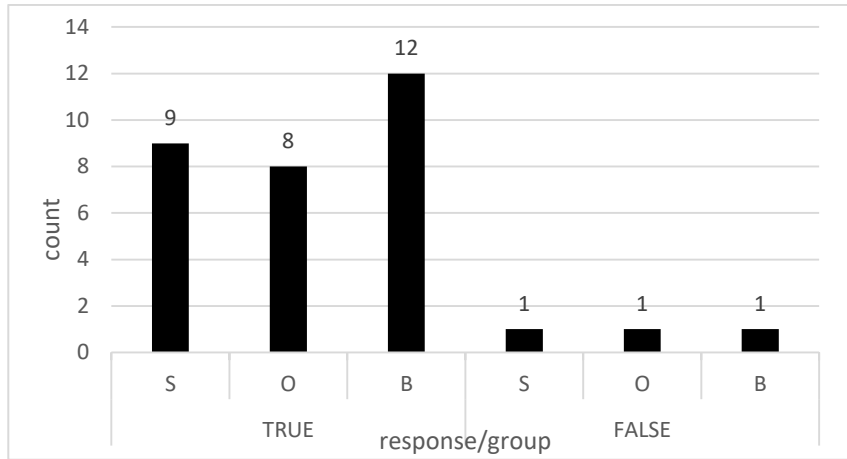
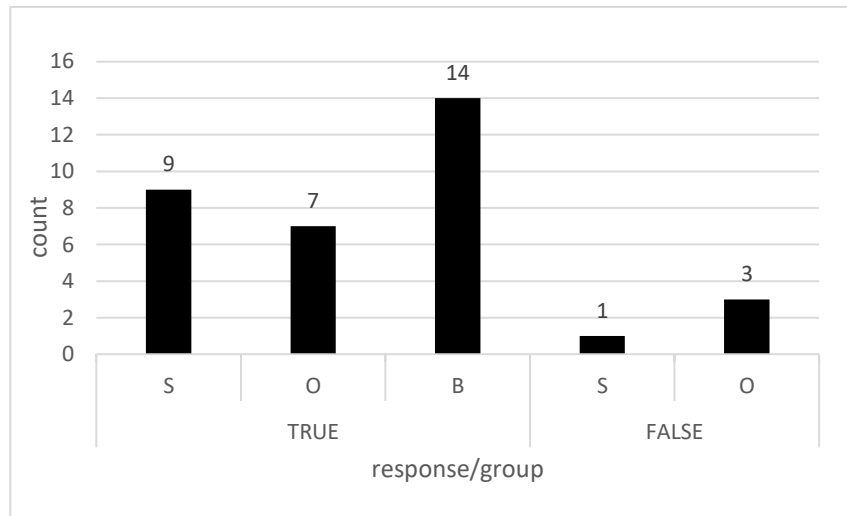Figure 5. Identification of the variant /ʊ/ by response type and group

Figure 6. Identification of the variant /ɪ/ by response type and group
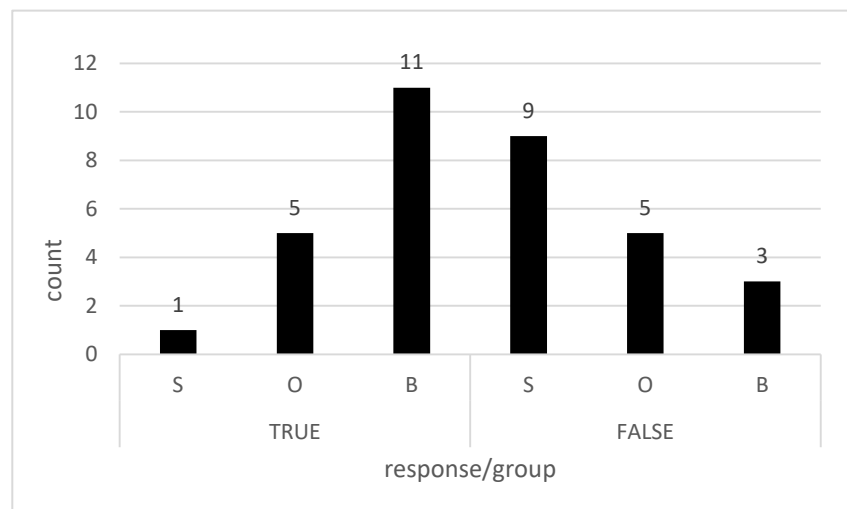

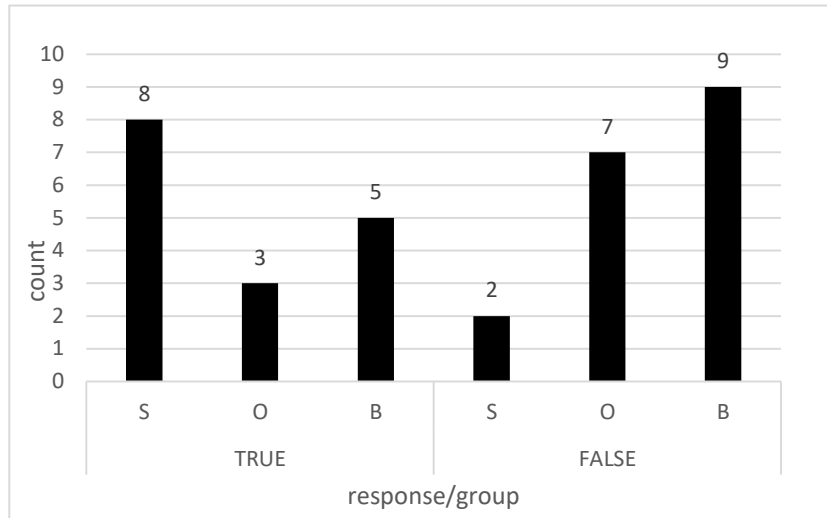Figure 7. Identification of the variant -ɪh by response type and group

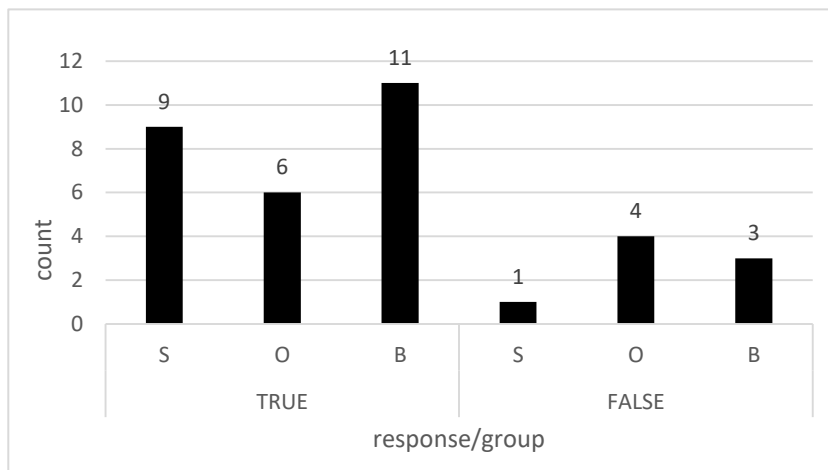Figure 8. Identification of the variant -ah by response type and group

Figure 9. Identification of the variant ya- by response type and group
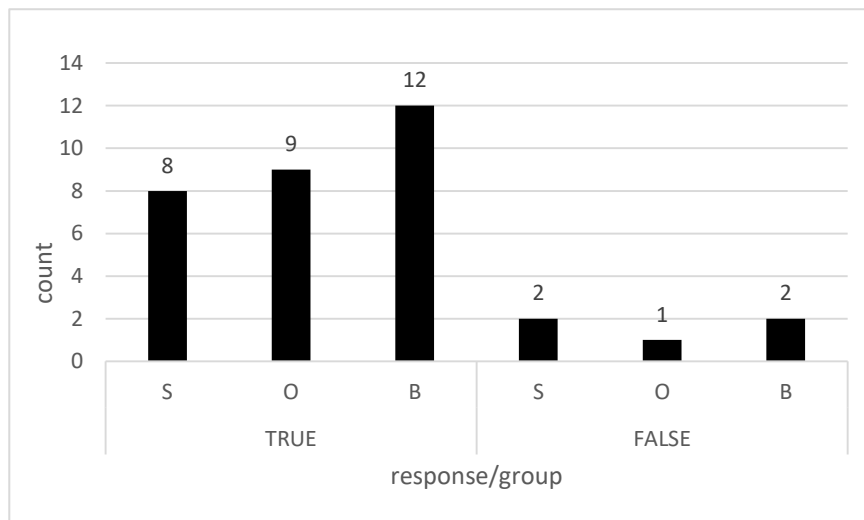

Figure 10. Identification of the variant yɪ- by response type and group

Multiple Interviews Data

In the production data in the main study, the Bs are converging on the S variants /ɪ/ and *-ah* but not *yɪ-*. The convergence on /ɪ/ is, however, considerably higher than it is on *-ah*. B speakers' use of /ɪ/ is sociolinguistically motivated, and thus it is expected that there will be more style-shifting in the new interviews. Their use of *-ah*, however, is accounted for (so far) as a natural drift due to redundancy (see Alajmi, 2019); therefore, it is expected to show no style-shifting in the interviews by the S interviewer. Finally, Bs showed no convergence on *yɪ-* in the production data, and it is expected that there will be no style-shifting here either.

The Merger (/ʊ/ - /ɪ/)

The data from both interviews for the 3 B speakers for this variable is provided in Table 4 and plotted in Figure 11.

Table 4. *Bs' use of the merger variants with B and S interviewers*

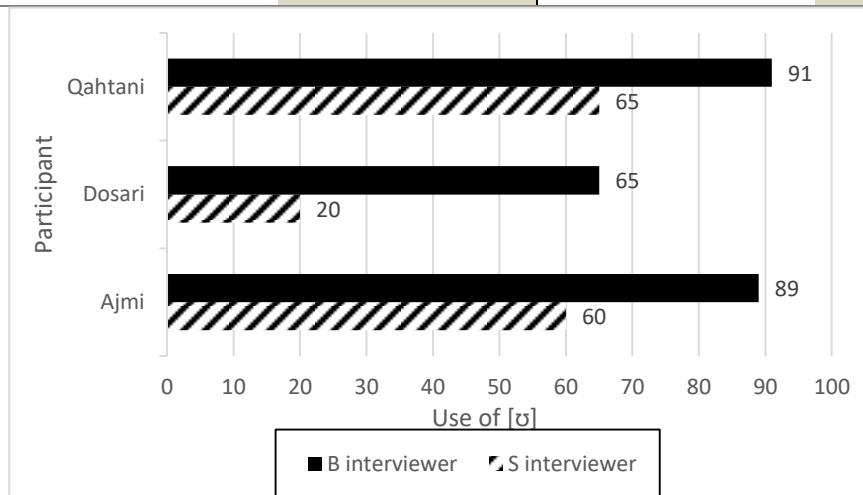| Participant	B interviewer				S interviewer			
	Frequency		Percentage		Frequency		Percentage	
	[ʊ]	[ɪ]	[ʊ]	[ɪ]	[ʊ]	[ɪ]	[ʊ]	[ɪ]
Ajmi	25	3	89.2%	10.8%	26	17	60.5%	39.5%
Dosari	29	15	66%	34%	7	28	20%	80%
Qahtani	43	4	91%	9%	23	12	65.8%	34.2%

Figure 11. Percentage of the use of /ʊ/ by participant and interviewer

The data in Table 4 shows that all speakers converged on

the S variant more when interviewed by a S interviewer. The Ajmi speaker converged by 30 percent more, the Dosari speaker by 45 percent more, and the Qahtani speaker by 26 percent more.

To test whether the degree of variance in the data is attributed to the interviewer effect (and not by chance), a simple Chi-square test was conducted for each speaker.

Table 5. Chi-Square test results for the interviewer-effect experiment

Speaker	Value	B interviewer	S interviewer	χ^2 (P value)
Ajmi	B (O value)	25	26	
	B (E value)	19.7	30.3	
	S (O value)	3	17	0.00858*
	S (E value)	7.8	12.2	
Dosari	B (O value)	29	7	
	B (E value)	20.1	15.9	
	S (O value)	15	28	4.70E-05*
	S (E value)	23.9	19.1	
Qahtani	B (O value)	43	23	
	B (E value)	37.8	28.2	
	S (O value)	4	12	0.00357*
	S (E value)	9.2	6.8	

The results of the test (Table 5) strongly suggest that the effect of the S interviewer is responsible for the increased rate of convergence on the S variant. This further supports the statement that the merger is a salient variable in Najd.

The 3SM Suffixed Pronoun

As there is slight convergence led by young Bs on -*ah* in the default production pattern (Alajmi, 2019), it is difficult to predict whether Bs will converge more on -*ah* when interviewed by a S speaker, who uses -*ah* all the time. If this change is internally motivated, as claimed before, there would be no increase in the Bs' rate of use when interviewed by a S speaker; but if there is an increase, this might lead us to reconsider the claim that this change is internally motivated. The data distribution by interviewers is provided in Table 6 and plotted in Figure 12.

Table 6. Bs' use of -ıh / -ah by interviewer, B and S

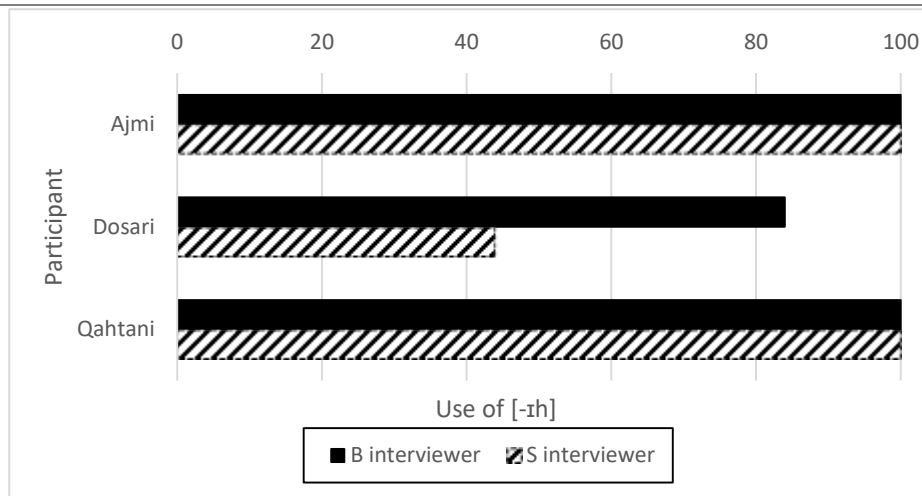| Participant	B interviewer				S interviewer			
	Frequency		Percentage		Frequency		Percentage	
	[-ıh]	[-ah]	[-ıh]	[-ah]	[-ıh]	[-ah]	[-ıh]	[-ah]
Ajmi	59	0	100%	0%	38	0	100%	0%
Dosari	27	5	84%	16%	11	14	44%	56%
Qahtani	35	0	100%	0%	24	0	100%	0%

Figure 12. Percentage of Bs' use of the B variant -ıh plotted by participant and interviewer

That data reveals that speakers who did not show convergence with the B interviewer also did not converge with the S interviewer. As for the Dosari speaker, he converged significantly more on the S variant in the second interview. One possible explanation for this is that this variable has acquired *marker* status for some speakers but not for others. In other words, some Najdi Bs are aware of this variable, and they style-shift between variants according to the interlocutor; on the other hand, other speakers are not aware of it (it is an *indicator*), and therefore do not style-shift towards the S variant.

The Imperfect Prefixes

The Bs showed no convergence on the S variant *yı-*. It is expected that this variable is an indicator and there will be no style-shifting when interviewed by a S speaker. The data from both interviews is provided in Table 7 and plotted in Figure 13.

Table 7. *Bs' use of ya-/yı- by interviewer, B and S.*

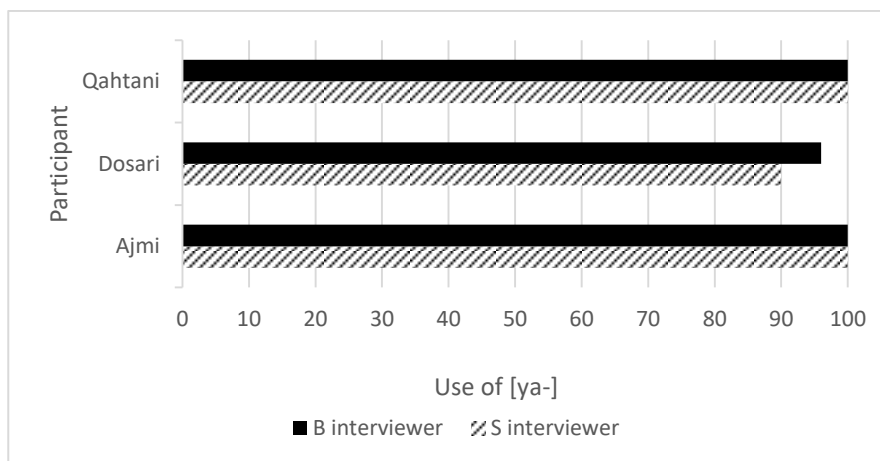| Participant	B interviewer				S interviewer			
	Frequency		Percentage		Frequency		Percentage	
	ya-	yı-	ya-	yı-	ya-	yı-	ya-	yı-
Ajmi	26	0	100%	0%	15	0	100%	0%
Dosari	29	1	96.6%	0.4%	19	2	90.4%	9.6%
Qahtani	34	0	100%	0%	17	0	100%	0%

Figure 13. Percentage of Bs' use of the B variant ya- plotted by participant and interviewer

Among the B speakers selected for the experiment, only the Dosari speaker shows convergence on the S variant with both interviewers. Although the rate of convergence increased with the S interviewer, the number of tokens is too low for us to attribute this shift to the interviewer. As for the other B speakers, the results further support the statement that Bs are not aware of this feature, and hence they do not converge on the S variant.

6. Conclusion

In this study, the relative sociolinguistic salience of the three linguistic variables has been measured using the SCAT, an online identification task, and repeated interviews. The results from all measures show that the merger is a salient variable, which is acquiring the status of a *marker*, while the other two variables are *indicators*. Bs were able to associate the merger variants correctly in the SCAT and in the identification task, and they style-shifted to the S variant when interviewed by an S interviewer. For the other variables, there were some counterintuitive patterns; but overall, it can be stated with reasonable certainty that Bs are not aware of these variables.

This study further supports the statement that the Bs are subconsciously switching to the S dialect for the features that they are aware of. This is because the S dialect has been associated with modernity and education as opposed to the B dialect. For any feature that is salient in the B dialect it can be claimed that it will likely disappear because of the shift form B to S. Other stigmatized B features, discussed in Alajmi (2019) have already disappeared from the B dialect of Najd. Finally, it is thus postulated that the Najdi standard dialect (koine) is likely to exhibit S features rather than B features.

Acknowledgment

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