

# Modality in Palestinian Sign Language

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The linguistic features of sign languages are as intricate as those of spoken languages and in many cases, there are common universal features that they share. Modality is one important feature that sign and spoken languages exhibit, yet modality in sign languages differs from spoken languages in certain basic ways: grammatical, semantic, and pragmatic. This research is an attempt to investigate modality in Palestinian Sign Language, in particular, and Arabic Sign Language, in general, using a descriptive approach by looking at the most frequent “modal devices” used in an endeavour to explore how basic modal meanings are expressed in Palestinian Sign Language. Data sources include but are not limited to Palestinian and Arabic Sign Language Dictionaries and sign user informants with various backgrounds. In order to identify the signs that express the meanings and to trace their possible motivations and their relation to other similar signs, data will be compared to some of the current signs that may have developed in the Arab world. The study will also investigate the characteristics of modality to arrive at an understanding to its function and examine how signs express modality in general, in an attempt to provide insights into sign language grammar.

**Key words:** *Modality and Arabic modals, modal signs, PSL, Sign language linguistics.*

## 1. Preliminaries:

### 1.1 Modality in Arabic

Modality refers to the speaker’s attitude, intention, judgement, perspective, or opinion (Palmer 1986, 2; Halliday 1970, 335). The term ‘modal’ literally means that which concerns the moods of the verb, while modality is the noun. Palmer (1979, 5) argues that modality is a semantic term while mood is grammatical, and “in theory there is no objection to describing each modal as one of the ‘moods’”. As a grammatical category, modality has different forms in languages, and the

very concept of modality is not the same in all languages although there is a claim that modality is universal. Even within a particular language, there are uncertainties according to the approach followed regarding the syntax, semantics, and pragmatics of modals. The notion of modality is “notoriously vague” (Palmer 1986), as such, difficult for any single approach to satisfactorily account for it.

Arabic has an inherent notion of modality that requires more than one approach and perspective to deal with (which is beyond the present study). But here is a brief account of modality in Arabic, for the purpose of this study, that can help understand this concept. In Arabic modality is both grammatical and lexical. Therefore, there are modal verbs, particles, prepositions, and phrases (Abdel-Fatah 1984, 10).

Arabic, like other languages, expresses modality in terms of notions: possibility, necessity, ability and in terms of logical categories: deontic, epistemic, abilitative, and bouletic. Deontic (from Greek *deon*: obligation) modality indicates possibilities and necessities resulting in laws or rules giving permissions and laying obligations. Epistemic (from Greek *episteme*: knowledge) modality expresses possibilities and necessities based on the knowledge of the speaker and existing evidence. Abilitative modality indicates the given abilities: physical or otherwise. Bouletic (from Greek *boule*: wish) modality refers to the given particular wishes and desires. In Arabic, modals are expressed using many structures:

- Verbs, such as *yumkin* (يمكن) = may/ can, *yadjib* (يجب) = must, *yanbaghi* (ينبغي) = have to, *yalzam* (يلزم) = must/ necessary, *yastati* (يستطيع) = can/ able to, *yasmah* (يسمح) = may/ can/ permit, *yaqder* (يقدر) = can/ able to, *yurid* (يريد) = want, *yarghab* (يرغب) = would like.
- Phrases, such as *min al-ja'iz* (من الجائز) = it is possible that, *biwis?ika* (يوسع) = it is in one's ability that, *bistia?atika* (باستطاعة) = it is in one's ability that, *min allazem* (من الازم) = it is necessary that, *min almumkin* (من الممكن) = it is possible that, *min almafroudh* (من المفروض) = it is supposed that, *min alwadjib* (من الواجب) = it is obligatory that, *la budda* (لا بد) = must be.
- Particles and prepositions, such as *?ala* (على) = incumbent on, *qad* (قد) = may, *rubama* (ربما) = might, *la?ala* (لعل) = might, *?asa* (عسى) = may/ hopefully.

These are but examples of the modals that can generally express possibility, necessity, ability and can specifically express meanings of obligation, permission, probability, certainty, ability, advisability, futurity, and volition amongst others.

Modal expressions in Arabic are distinguished from other non-modal expressions by two criteria. First, there is no co-occurrence of the modal where their meaning contradicts e.g. a) *yad3ibu yad3:zu ?an tadhhaba* (you must can go), and b) *la: budda qad tadhhaba* (you must may go).

Second, there are no imperative forms of the modal verbs as compared with other verbs (Abdel-Fatah 1984, 6-7).

## 1.2 Arabic Sign Language

Sign languages have naturally developed in deaf communities along with spoken languages with which they share many properties although there can be some differences between them in linguistic and even paralinguistic features. Arabic Sign Languages (ArSLs) are made of ‘sprachbunds’ spread in the Arab world resulting in as many sign languages as spoken Arabic. The sign languages of Jordan, Lebanon, Syria, and Palestine are related due to geographical proximity; the same can be said about other Gulf countries. Except for Libya and Egypt, local ArSLs in North African countries are still emerging; there may exist a sign language even within each city or village communities. In addition, some languages e.g., Moroccan, Algerian, Tunisian seem to have been derived from foreign signs languages: American, French, and Italian respectively. Generally speaking, all Arabic sign languages share similarities of certain degrees influenced by geographical proximity, common historical background, common sociocultural aspects, and pan-Arab education.

Arabic sign languages are in many ways like other world known sign languages and might have been influenced by them (Miller 1996). ArSLs are basically manual languages that involve hand shapes, location, and movement. In addition, ArSLs make use of other nonmanual features, like those of the face, mouth, and tongue (Abdel-Fattah 2005a, 214). Arabic sign languages have other grammatical features such as links between form and meaning (Abdel-Fattah 2005a, 214) that may be iconic, pictorial, conventional, or arbitrary (Brennan 1987). There is no 1:1 word class correspondence between Modern Standard Arabic (MSA) and an Arabic sign language which is generally limited to nouns, adjectives, and verbs; and mostly lacks classes such as prepositions and some adverbs or intensifiers (Abdel-Fattah 2005a, 214). However, the function of these can be conveyed by other means as position and direction of one sign in relation to another and by repetition of sign regarding intensifiers (Suwed 1984).

The Grammar of Arabic Sign Languages is distinct and not similar to that of neither spoken nor written forms of verbal Arabic (Hendriks 2004 and 2008); therefore, it is difficult and not practical to compare Arabic sign languages with their spoken counterparts. Generally, ArSLs manifest a special grammatical system such as word order, agreement, and tense/aspect.

Basically, ArSLs use a “theme– rheme” structure, however peculiar even to each variety. Signed sentences, in some cases, make use of non-manual gestures e.g., raised eyebrows, head and shoulders leaning forward, signed question mark, etc. Sign duration and other context-based factors are also important aspects in the grammar of ArSLs.

### 1.3 Palestinian Sign Language

Palestinian Sign Language (PSL) is one of the national sign languages used in the Levant. It is the sign language used by the deaf people in Palestine. Arabic is the native language in Palestine; English the second language and the PSL is the third language.

PSL, like other sign languages in the region, has not been extensively studied being an emerging sign language. There are no studies on the features of linguistic structure (phonology, morphology, syntax, etc.) or on how this young language has evolved over generations. However, a study by Al-Fityani and Padden (2010), explored the similarities and differences among five sign languages of the Arab world: Jordanian Sign Language (LIU), Kuwaiti Sign Language (KSL), Libyan Sign Language (LSL), Palestinian Sign Language (PSL), and Al-Sayyid Bedouin Sign Language (ABSL). Selected signs were compared based on handshake, movement, location, and palm orientation. The study indicates that the sign languages compared are probably not dialects, although they share Arabic as common spoken language. The result of LIU and PSL comparison showed the highest number of similarity of 58%, which reflects their interinfluence. (Al-Fityani and Padden 2010, 442). This indicates that PSL appears to be related to other sign languages in the Middle East. Save for this study, only a few “simple” dictionaries have been published.

The first dictionary was published in 1992 by the Benevolent Society of the Deaf, Ramallah. In 2000, a dictionary of PSL was developed for educational purposes by the Palestinian Red Crescent Society, and in 2014 an improved version of *Qamous Al-isharah At-takhatubi Al-Filistini*, was published by the Palestinian Red Crescent Society, Ramallah, Palestine. The first dictionary of 1992 included approximately 1,500 signs and the republished in 2014 2000 signs. In addition, PSL sign language is used in formal T.V. news bulletins once a day. In 2014, Birzeit University adopted a course designed to teach sign language to enhance communication with the Deaf.

Presumably, PSL started to arise around the end of the 1970s, resulting from a “Deaf Community” forming in the West Bank and Gaza. While some of the origins of PSL can be traced to Ottoman court Sign Language, documented information is quite limited to claim so. However, it is natural to find borrowed signs from other languages, still this needs profound historical and comparative studies.

### 1.4 Deaf community in Palestine

The Deaf Population (profoundly deaf and hard of hearing) forms nearly 1.6% of total population. This means that of the estimated 5.052 million (PCBS 2020) people in Palestine, around 81,000 are suffering from a certain degree of deafness. The percentage of hearing disability is 14.2% amongst other disabilities (PCBS 2020).



The Deaf community was first cared for through benevolent societies and NGOs. The first deaf school was opened in 1971 in Bethlehem. In subsequent years, more deaf schools were established. These schools basically used oral education, but later shifted to total communication including sign language after publishing the first Palestinian sign language dictionary. Currently, 17 NGO institutions and schools provide educational services for the deaf with an estimated enrolled number of 900 students. Moreover, 1700 students with deaf and hard of hearing disability are enrolled at public schools (MOE 2019).

## 2. Introduction

Sign languages are natural human languages that are mostly used by the deaf as the main medium of communication. There are more sign languages than the nations of the world.

Sign languages such as ArSLs can be described using the same framework system as their spoken counterparts. However, we should recognize that both forms of languages are quite distinct though they do share important characteristics. Modality in sign language, in general, has not been deeply and comprehensively studied; and when it comes to Arabic, so far and up to the researchers' knowledge, there exists no single study that tackles modality or even addresses it within other topics. Basically, the notion of modality bears a significant complexity among other areas in the field of linguistics, and its meaning is very difficult to determine relying on a single perspective. In English attempts to account for modality as "semantic-grammatical" (Palmer 1990, 1) have perhaps been most successful given the system of modal auxiliary verbs. However, in other languages such as Arabic, which has a notion of modality inherently different from that in English, such accounts may prove inadequate (Abdel-Fattah 2005b, 31). Therefore, understanding sign language is by no means less difficult. Nevertheless, adopting a simplified approach for the purposes of this investigatory study, at this stage of ArSLs development, may be preferable and fruitful.

The term modality in some literature on sign languages refers to the mode of communication: oral-aural versus signed/visual mode (cf. Meier 2002; Sandler and Lillo-Martin 2006; Vermeerbergen et al. 2007; Sherman Wilcox and Jill Morford 2007, Hohenberger et al. 2002). In this study the term "modality" will always refer to the grammatical sense as defined by linguists such as Fillmore (1968, 23); Halliday 1970, 335; Palmer (1979, 5 and (1986, 16); Simone (1990, 278); Kiefer (1998, 59). The logical attributes including deontic, epistemic, abilitative, and bouletic will be used to explain the modal contents of the signs in addition to other regular linguistic metalanguage expressions.



The expressions of modality in Palestinian Sign Language- PSL (Lughat Al Ishara Al Filisteeniyah) are the central units to be analyzed and compared to other expressions in sister ArSLs, mainly Jordanian Sign Language (Lughat al-Ishāra al-Urdunia- LIU). The lexicon, semantics, and some syntax, in addition to other features such as iconicity (Stokoe et al.1965) will form a cornucopia of elements that can serve as tools to help understand and construe the modal meaning of signs. Issues such as grammaticalization and conceptualization are beyond the present study, and therefore, will not be directly considered.

This paper is, in essence, a preliminary investigation into modality in Palestinian Sign Language (and other related regional sign languages that have similar features with it, primarily Jordanian Sign Language- LIU). The paper will focus on the description of signs that express modality within three basic logical categories that include: epistemic, deontic, and dynamic; and the semantic contents of: necessity (obligation, permission), possibility, ability, and volition.

### **3. Research on Modality in Sign Language**

Sign languages as other spoken languages have linguistic systems that can be described and analyzed using the same or similar approaches. Modal systems in sign languages have not been widely investigated. One of the earliest studies on modality in sign language is that of Ferreira Brito (1990), who presents a preliminary study of modality in Brazilian Sign Language (Libras). The epistemic, alethic, and deontic modalities were discussed in this study. But perhaps, the most studied sign language is the American Sign Language (ASL). Still, modality in ASL has been studied by only few scholars (c.f. (Padden 1988; Wilcox & Wilcox 1995; P. Wilcox 1996; Shaffer 2000, 2002; Janzen & Shaffer 2002; Wilcox & Shaffer 2006).

Padden (1988) discusses the modals: CAN, SHOULD, MUST, and WILL paying more attention to the structure surrounding these signs and, in particular, the nominals that might precede them. Wilcox and Wilcox (1995) work offers an analysis account of ASL modals. This study focuses on the iconic sources of modal notions and their lexicalization in ASL. Janzen and Shaffer (2002) examine the grammaticalization of modals and their developmental from gestural to lexical forms.

Shaffer (2004) gives a detailed analysis of ASL modals and their functions as relates to information ordering such as the effects of grammaticalization in discourse information ordering.

Wilcox, Sherman & Barbara Shaffer (2006) describe a range of modal forms in ASL and analyzes their semantic domains of necessity and obligation, participant external and participant internal, and epistemic modality. They argue that, as for spoken languages, modal forms often develop from lexical sources, but signed languages such as ASL can be traced to gestures outside the language



system. Evidence of two routes leading from gesture to grammar are suggested: one in which manual gestures go through a lexical stage before developing into more grammatical forms, and a second which leads from gesture to prosodic device and then directly to grammar.

Elise Stickles (2010) discusses the semantics of polysemous modal verbs, their scalar strength, metaphoric and iconic epistemic force. While Barbara Shaffer and Terry Janzen (2016) had a different more elaborate survey of the expression of modality and mood in ASL, with a focus on modal verbs. In this study articulation with the hands is accompanied by distinctive facial gestures and body/head postures to express modals that range from agent-oriented to epistemic modals. The grammaticalization of modal categories is discussed, in addition to the conditionals, hypotheticals, and counterfactuals of mood.

The conclusions of these works on ASL indicate that a grammaticalization process undertook ASL development where lexical forms shifted meaning and have become polysemous. An example is provided by Shaffer suggesting that the sign STRONG has grammaticized into CAN (Shaffer 2002: 37). Other conclusions focused on the gestural origin of ASL modal signs and suggested that the source can be traced to Old ASL and French Sign Language (LSF).

*Modality and linguistic change in Spanish Sign Language (LSE)* (2013) discusses the area of necessity, in both of its dimensions (deontic and epistemic), and basically examines the *Diccionario usual de mímica y dactilología* (Usual dictionary of mime and fingerspelling), by Francisco Fernández- Villabrille (1851); in this work, Carmen Cabeza-Pereiro (2013) attempts to identify the signs expressing meanings associated with the deontic obligation and epistemic necessity. The source of the signs, OBLIGAR and NECESARIO, is discussed with a consideration of grammaticalization.

Ángel Herrero-Blanco, and Ventura Salazar-García (2010) study the expression of modality in Spanish Sign Language from a functional perspective. Different notions of modality such as volitive, epistemic, deontic are considered through lexical means: verbs, nouns, adjectives, and adverbs. The study highlights the validity of the cross-linguistic generalizations made about modality in oral languages. Modality as a grammatical category is analogized with the way it is usually studied in spoken languages. Probably, the main conclusion of this research is that there is an essential grammatical congruity between LSE and oral languages in the field of modality. Thanks to this, LSE is totally able to express the complex variety of modal contents, without showing any type of semantic deficiency.

A study of the modals in Brazilian Sign Language (Libras) of necessity and possibility (2014) by André Nogueira Xavier and Sherman Wilcox suggests that the Libras modals have a lexical source



with a more concrete meaning and can have their origin traced back to a gesture developed through the same grammaticalization processes observed for spoken languages and are based on synchronic polysemy. The analysis of the data discussed reveals that Libras modals also seem to evolve out of lexical signs with more concrete meanings and, in some cases, phonological change.

In their study of modality in Taiwan Sign Language (TSL), Chien-hung Lin & Jung-hsing Chang (2009) discuss the modality in TSL within the framework of Role and Reference Grammar (Van Valin and LaPolla 1997; Van Valin 2005), with the goal of finding out the distribution of modals, and their semantic scopes, when associated with negation. In their study they focused on how is the speaker's subjectivity represented in the syntax of TSL? And what are the word orders and semantic scopes of modals in TSL, when a clause involves both epistemic and deontic modals. They concluded that there is an iconic relationship between the scope of modals and their order, and in TSL, the epistemic modals always precede the deontic ones.

#### **4. The Study**

The results of searching: “modality in Arabic (or Palestinian) sign language” on google on March 5, 2020, yielded zero results, which indicates lack of research on this area compared with other sign languages such as American Sign Language and other European and world languages. It is clear, therefore, that there is a need for such studies in a field of growing interest and importance. This study attempts to shed light on the system of modality in Palestinian (or Arabic) sign language and examine its similarity to that of the spoken language in a humble endeavour to contribute to the research on sign language.

The investigation and results of the study of signed modality are hoped to contribute to the understanding of the grammaticization and the semantics of modality in sign language in general and the Palestinian (Arabic) sign language in particular. Considering the above, the goal of the present study is twofold: (i) to describe the modal expressions in the Palestinian Sign Language and (ii) to indirectly give an analogical account of these expressions with their counterparts in ArSLs and the Oral Language of Modern Standard Arabic.

Most likely, PSL and other ArSLs had a long history of development and many of them seem distinct though sharing many features of similarity. Unfortunately, there are no studies that follow the development history of ArSLs, and indeed very little has been written on the grammaticization of such languages. For this reason, the present study will consider as needed the formal similarities and dissimilarities in the modal vocabularies as they stand out without further discussion of the reason behind that, which might be attributed to cultural or dialectal similarities. The study will

proceed to discuss as briefly as possible: necessity (obligation, permission), possibility, ability, and volition.

#### **4.1 Data and methodology**

The key issues of data collection and analysis are to be considered in this section since the objective of this study was to **investigate** the use of modal expressions in PSL based on dictionary entries and informants' reactions rather than collecting and analyzing corpus data. The following description will generally describe the approach used in this study.

##### **4.1.1 Data collection**

The process of data collection went through three stages. First, the main data, which includes all signs that express modality or modality relevant expressions, was first collected from the three available dictionaries on PSL, which are the basic sources of drawings and figures in this study: Qamous Al-isharah Al-Takhatubi Al-Filistini 2014, Qamous Al-Mustalahat Al-Ishariyah Limawad At-Tarbiyah Al-Idgtimaiyah 2011, and Qamous Lughat Al-Ishrah Al-Filisteeniyah: Ta'limi -Tarbawi 2000.

Second, the researchers interviewed the informants and asked them to provide the signs for the modal expressions in Arabic (written words) with the help of a sign language expert/interpreter (the co-author of this paper), and then the signs were recorded on camera. Third, true examples with modal expressions were selected from elicited conversations with informants. All informants are members of the deaf community in Palestine and use PSL in their everyday communication. They are adult deaf persons of both sexes from different social, professional, and educational backgrounds. Some have a university degree. The examples were initially spontaneous utterances by signers, and then they were constructed into sentences by the PSL expert and interpreter who judged their grammaticality and prepared them for the study.

Data representing signs from LIU was selected from dictionary entries from: *Dictionary of Jordanian- Arabic Sign Language (2015)*. Moreover, a fieldwork visit was made to *The Holy Land Institute for the Deaf, Salt, Jordan*. A work meeting with deaf community sign language experts and teachers in the Institute was held during which all LIU signs that express modality were revisited to ensure accuracy and gather parallel data that could be used for cross-linguistic comparison.

#### 4.1.2 Methodology

The crude data of dictionary entries expressing modality or related meaning was screened to identify the signs that always unambiguously express modality and in all contexts. Altogether, nine signs were identified and considered for the study.

Informants were interviewed and asked to sign the modal expressions to determine manual and non-manual force used in the signs. This will help in determining the exact meaning of each sign. Clauses that contain modal meanings were elicited from the informants. These were signed and recorded to serve as foundation data for the purpose of the study.

Finally, a description of each sign expressing modality was designed with the help of hearing sign language expert and educated deaf informants with a university degree (M.A. and B.A.). A conference with deaf community sign language experts and teachers in *The Holy Land Institute for the Deaf, Salt, Jordan* was held to determine the comparative parameters of the PSL modal signs with their LIU counterparts.

#### 4.2 Necessity

Necessity, whether deontic or epistemic, in Modern Standard Arabic is expressed by many words and phrases (c.f. 1.1 above) such as *yadjib* (يجب) = must, *yanbaghi* (ينبغي) = have to, *yalzam* (يلزم) = must/ necessary, *yasmah* (يسمح) = may/ can/ permit, *min al-ja'iz* (من الجائز) = it is permitted, *min almafroudh* (من المفروض) = it is supposed that, *min alwadajib* (من الواجب) = it is obligatory that, *la budda* (لا بد) = must be, all of which express different degrees of necessity or obligation according to the speaker's involvement in the speech event. In ArSLs, so far, only a few signs are used to express each notion or sub-notion. The same can be said about the PSL where only one or two signs are used to express all the above.

##### 4.2.1 Deontic necessity

Deontic modality is categorized as a kind of modality that “identifies the enabling or compelling circumstances external to the participant as some person(s), often the speaker, and/or as some social or ethical norm(s) permitting or obliging the participant to engage in the state of affairs” (Van der & Plungian 1998, 81).

Deontic necessity includes the categories of obligation, and permission. Obligation in PSL is mostly expressed with a modal sign that generally expresses the meanings of the words: *yadjib* (يجب) = must, *lazem* (لازم) = it is necessary, *min al mafroudh* (من المفروض) = it is obligatory/

incumbent (have to) without making distinctions between these meanings as in the case of spoken Arabic.

Necessity/ obligation in PSL (Figure 1\*: *Yadgib, Laazem* in PSL), the right hand makes a fist, placed up against the right shoulder, and then pushed downward with force with a serious facial expression indicating necessity, e.g.

1. انت لازم ادرس منيح

*Inta lazem udrus mneeh*

You **MUST** study good

‘You must study hard’



Figure 1 (*Yadgib, Laazem* in PSL)

The modal expression in the example above indicates necessity and obligation. The signer describes an external obligation using the pronoun you. The signer lays an extreme advisability obligation pointing out to a “hypothetical” conditional result: failing. Thus, saying: “you must study hard”, or hypothetically “you shall fail, and bear all consequences thereafter”.

In more incumbent situations, the fist starts from a higher position close to the nose, and the face expressions are more serious to indicate intensity and to stress serious obligation according to the situation and the degree of necessity, e.g.

2. مهم مهم لازم روح دكتور

|              |              |              |             |                |
|--------------|--------------|--------------|-------------|----------------|
| <i>Muhim</i> | <i>muhim</i> | <i>lazem</i> | <i>rouh</i> | <i>doctor.</i> |
| Important    | important    | <b>MUST</b>  | go          | doctor         |

‘You must go to the doctor, it’s very important.’

The situation here is more incumbent and might be a matter of life and death; the additional intensity in facial expressions and the higher position of the hand (with more muscular intensity) are very necessary to convey the obligation meaning. The situation governs the use of **MUST** in 2 above is a highly demanding and thus imposing a more deontic use of the modal *lazem*.

A similar sign is used in LIU (Figure 2: *Yadgib, Lazem* in LIU, sign starts from right to left); however, the right hand makes a fist with the thumb contacting the middle finger, the fore finger extended, and the rest of the fingers closed. The hand as such is pushed from beneath the head downwards with a serious facial expression indicating necessity. It is important to note that intensity, speed, facial expression and duration can all play a role in the final intended meaning.

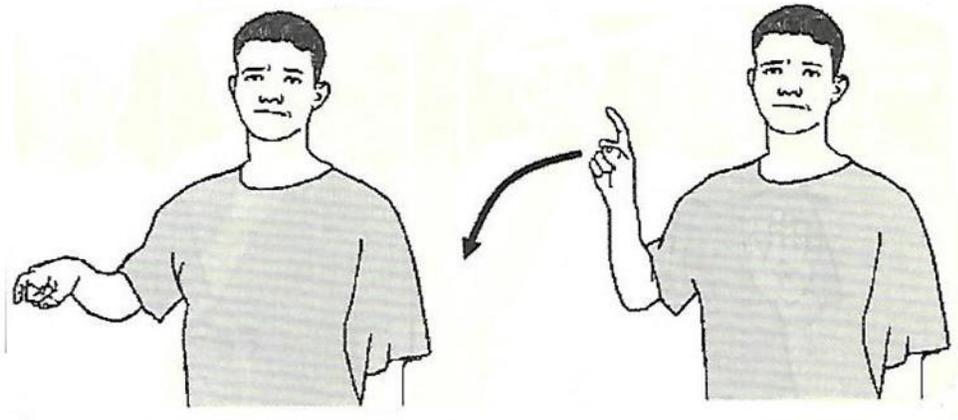


Figure 2 (*Yadgib, Lazem* in LIU, sign starts from right to left)

The similarity between the two signs is clear in all aspects except the shape of the fist. It should be remembered that the two languages are remarkably close and share around 58% of their vocabularies (Al-Fityani and Padden 2010, 442). In addition, most signs are reciprocally intelligible by both deaf communities. It is interesting to note here the similarity (almost identical) between LIU *must/ should* and that of ASL. Therefore, one would strongly conclude that this sign was borrowed from ASL, or French Sign Language (LSF) form IL FAUT ‘it is necessary’. In this regard, there have been lexicostatistical analyses that show similarities between languages (e.g., Woodward 1978). However, discussing this issue is beyond the present study.

#### 4.2.2 Epistemic necessity

Epistemic necessity expresses the degree of certainty on which one bases proposition. In PSL, epistemic necessity is expressed by the sign indicating *la budda* (لا بُدّ), which is the same sign as *lazem* above (figure 1); however, this sign epistemically expresses the meaning of “must be”. The epistemic modal meaning is conveyed by the context, and by using different facial expressions that accompanies the sign which express wondering (raising the eyebrows and spreading the lips) rather than a narrow eyebrow grim and lip rounding and firmness in the case of deontic expression, e.g.

3. (أمس في حفلة زفاف) أحمد لازم موجود  
(*Ams fi haflat zafaf*) *Ahmad lazem mawdjoud.*  
  
Ahmad MUST- BE existing

(In a wedding party, yesterday) ‘Ahmad **must be** there.’

In this example, we can argue that this use is epistemic necessity that rests on the knowledge of the speaker. The sense of MUST-BE in this case is one of judgement by the speaker based on the context of a party and the almost certainty that Ahmad must have gone there, being a close friend to the groom.

#### 4.2.3 Dynamic necessity

Dynamic necessity is the type of modality that does not involve the authority of the speaker as the deontic or the judgment of the speaker as the epistemic. Dynamic necessity is expressed by *min al mafroudth* (من المفروض), and *yata?ayan* (يتعين). This modal sign indicates necessity that rests on an external authority rather than the speaker’s authority or judgement. Such participant-external root necessity is expressed with the production of “MUST” meaning as in:

4. لازم في صم مترجم اشارة  
*Lazem fi sum mutardgem isharah*  
MUST in deaf interpreter sign

‘The deaf **must** be allowed sign interpreting.’

In this example, the signer is saying that an external authority (presumably a law regulation) obligates that it is necessary (for the law) to allow the deaf to work as interpreters to other deaf

people. The source of obligation is not clearly stated; rather it is understood that this source is external to the agent. This is arrived at by (extra) facial expressions or contextualizing by reference to the authority laying the obligation.

A different context of less force involves using other non-manual features. For example, participant-external advisability often describes contexts where there is advice about an action, condition, or a state. Non-manual markers have been recognized in signed languages to express different sentence meanings, as well as intentions, emotions, and state of the mind of signers (cf. Baker-Shenk 1983; Emmorey 1999; Dachkovsky 2007), e.g.

5 لازم انت غسل ايد قبل بعد أكل عشان مرض

|              |             |               |            |              |              |             |               |               |
|--------------|-------------|---------------|------------|--------------|--------------|-------------|---------------|---------------|
| <i>Lazem</i> | <i>inta</i> | <i>ghazel</i> | <i>ied</i> | <i>qabel</i> | <i>ba?ed</i> | <i>akil</i> | <i>?ashan</i> | <i>maradh</i> |
| <b>MUST</b>  | you         | wash          | hand       | before       | after        | food        | because       | disease       |

‘You **should** wash your hands before and after the meals to avoid catching the virus.’

The meaning of **should** is best described as ‘it is necessary’ expressed in MSA by *yanbaghi* (ينبغي) in an advisability context, where the situation demands the ‘necessity’ to do something. In the example above, the pandemic of Covid19 was the driving force to repeat and stress the advice of washing the hands although this is the norm in usual times. The meaning of “should” can be associated with the sign of *lazem*, and the facial expressions of wondering and expressing objection to not performing the act of hand washing.

### 4.3 Possibility

The semantic notion of possibility includes deontic possibility, epistemic possibility, and dynamic ability. The logical categories of deontic, epistemic, and dynamic have a direct relationship with permission, possibility, and ability respectively (Abdel-Fatah 1984, 39).

#### 4.3.1 Deontic possibility

Deontic usage is expressed by modals giving permission based on the speaker’s role as a participant in the discourse, which is here someone with an authority to give the permission. This kind of modal expression is usually performative speaker or discourse oriented. Such meaning is conveyed in Arabic by the words: *samaha* (سمح) = permitted, *wafaqa* (وافق) = agreed, *?mkana* (أمكن) = can, *istata?a* (استطاع) = could, *qadira* (قدر) = able to, *wasi?a* (وسع) = able to; all of which are expressed by one sign in PSL (fig3) which indicates permission.

**The meaning of Permission** is expressed by the sign indicating the meanings of: *yasmah* (يسمح), *yowafiq* (يوافق), which means give permission to (Figure 3: *yasmah*, *yowafiq* in PSL – right to left). Both hands are used with the inside toward the chest; the fore finger and the middle finger are close together facing the chest while the other fingers are closed. Both hands are then moved away in the direction of the receiver, with a face expression indicating acceptance and agreement. This sign is identical with the sign in LIU and highly related to the one in ASL.

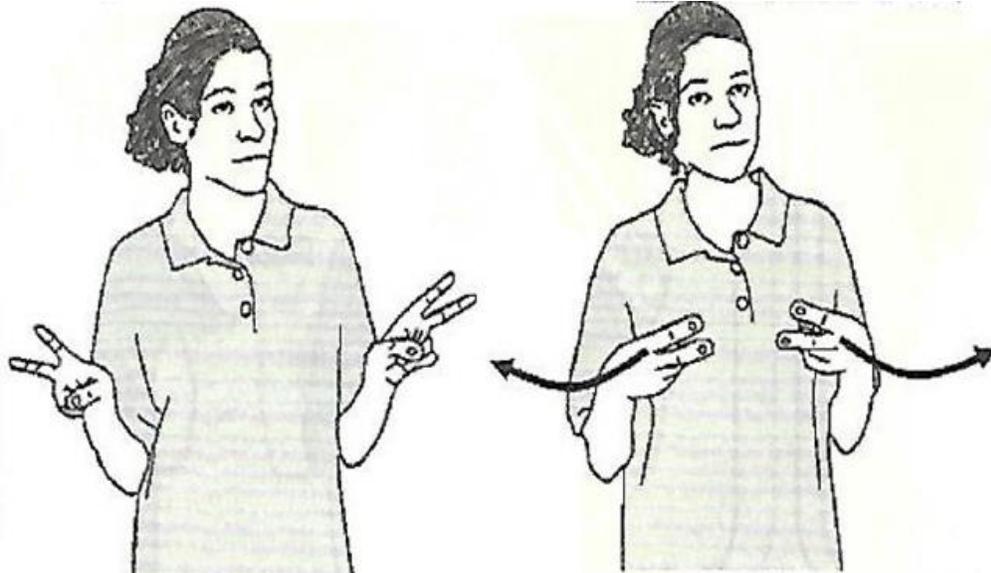


Fig.3 (*yasmah*, *yowafiq* in PSL – right to left)

The deontic meaning here focuses on giving permission which is within the authority of the signers or is afforded to them by an external source, e.g.

6 الآن انت مسموح روح

(تقدر أن تغادر الآن)

*Al aan inta masmouh rouh*

Now you PERMITTED go

‘You **can** leave now.’

In 6 above, the deontic meaning is permissive. The speaker expresses subjective deontic possibility (permission to leave). In spoken Arabic, we have a similar situation of giving permission using variety of modal expressions including modal and regular verbs such as *smaha* (permitted) and *wafaqa* (agreed) and *qadira* (able to), in addition to modals like *amkana* (can) c.f. 1 above.

### 4.3.2 Epistemic possibility

This type of modal meaning is expressed by the sign which indicates the meanings of: *la?ala* (لعل) = might, *amkana* (أمكن) = may, *rubama* (ربما) = maybe, *qad* (قد) might, *dgaza* (جاز) = possible, *ihtamala* (احتمل) = probable in spoken Arabic. The epistemic possibility is mostly concerned with propositions and judgement of possibility. In PSL, the sign that expresses subjective possibility (figure 4) is made by the right hand open and the fingers spread in a semi-circular shape while the hand is swaying left and right. The lips are rounded with a facial expression and eye narrowing indicating possibility, example:

7      ممكن صوم أحد جاي  
          (من الممكن أن يكون الأحد القادم صيام)

*Mumkin*      *soum*      *ahad*      *dgay*

**MAYBE**      fast      Sunday      next

‘We **may** fast next Sunday.’

In this example the speaker expresses an epistemic judgment based on hypothetical assessment of the time of fasting (first day of Ramadan), which is usually decided one or two days before the commencement of the month depending on crescent sighting.

PSL does not make distinctions between the different nuances conveyed in the spoken language, which determine the choice of the modal expression. PSL uses more than one single sign for possibility (Fig. 4 and 5), while if there is a need to express meanings as in the spoken counterparts, the deaf would succumb to utilize additional communicative means. “Sometimes, Deaf people use mouthing to “spell out” Arabic words. This is relative and varies according to the Arabic Sign Language (ArSLs) used, the sign nature, hearing degree, education, and interlocutors (deaf-to-deaf or deaf-to-hearing)”, (Abdel-Fattah 2016, 790).



Figure 4 (*mumkin*)= MAY



Figure 5 (*rubama*)= MAYBE

For example, the use of specific expressions such as *rubama* and *qad*= *might* (which indicate low probability) is limited between the educated interlocutors who really know what these words in the spoken counterpart refer to. Therefore, they attempt to convey the exact word by combining fingerspelling and a modal sign. In such cases, fingerspelling is added to complete the expression, but using additional signs (synonym) and/or appropriate facial expressions can also be made to indicate the required meaning without using the fingerspelling, e.g.

"بسبب غياب المعلم قد يتم تأجيل امتحان اللغة العربية"

‘Because the teacher is absent, the Arabic Language exam **might be** postponed.’

Deaf communicates: There is a note that says: “Because the teacher is absent, the Arabic Language exam **might be** postponed.”

سبب معلم ما في، ممكن، ربما/ قد امتحان تأجيل

*Sabab mualim ma fi mumkin, rubama/ q-a-d imtihan ta'dgil*

Reason teacher not in **MAYBE** **PROBABLYL/ MIGHT** exam postpone

The educated deaf will translate this note using the sign of “*mumkin*” and “*rubama*”, which both mean: maybe, but one with more probability than the other, or will use fingerspelling according to the level of education of the receiver. Mouthing is usually not an option here; “Mouthing of Arabic words tends to be used more when Deaf people sign to hearing people than when Deaf people are signing to each other”, (Hendriks 2008, 16).

In this example, the signer refers to a note and tries to interpret what the note exactly says by first, expressing the epistemic possibility through the usual sign of “*mumkin*”, and second by fingerspelling the word “*q-a-d*” or using an additional sign to explain the meaning, that of *rubama*. We should note here that both interlocutors can read, but one of them is not educated enough to know the meaning of “*qad*” from the note. This type of possibility is referred to as “Root possibility” where the situation itself enacts the speech event rather than the speaker. The speaker role is to relate to the note and its meaning content. He/she explains to friend the purport of the message stated in the note describing what is possible to happen to the exam.

Many hearing persons use the modals of *may* and *might* interchangeably when referring to possibility and probability regardless of the difference between the two which is one of degree of possibility. While *may* is used to express possible, factual, or could be factual events, or states; *might* is rather used to express hypothetical, counterfactual, or less possible ones.

The same can be argued about the usage of similar modals within deaf communities including the Palestinian and Jordanian. “*mumkin*” sign is equal to “*may*” and that of “*rubama*” to *might*. The degree of possibility between both can be expressed interchangeably through facial expressions, and very few can make the distinction.

#### 4.4 Ability

Dynamic ability is expressed in spoken Arabic by *wasi?a* (وسع), *qadira* (قدر), *istata?a* (استطاع), *tamakana* (تمكن), all of which indicate can/ able to . Dynamic ability gives the general meaning of: “it is in one’s ability to / that”. The speaker in such usage is either involved (participant-imposed dynamic), or not involved in the action; rather he/she acts as a neutral interlocutor (situational dynamic). The exact type of ability meaning is usually determined by the context (whether the ability is physical, financial etc. (Abdel- Fatah 1984, 78). In PSL, the sign of: *qadira* (قدر)/ *istata?a* (استطاع) = can is used to express this type of dynamic ability (Figure 6: *yastati?/ yaqdir*). This sign is again very related to its counterpart in ASL, e. g.

8 الصم بقدر شغل تمام

|               |               |                |  |
|---------------|---------------|----------------|--|
|               |               |                | (الشخص الأصم يستطيع القيام بأعمال جيدة.) |
| <i>Al sum</i> | <i>biqdar</i> | <i>shughul</i> | <i>tamam</i>                             |
| The deaf      | CAN           | work           | perfect                                  |

‘The deaf person can do good work.’

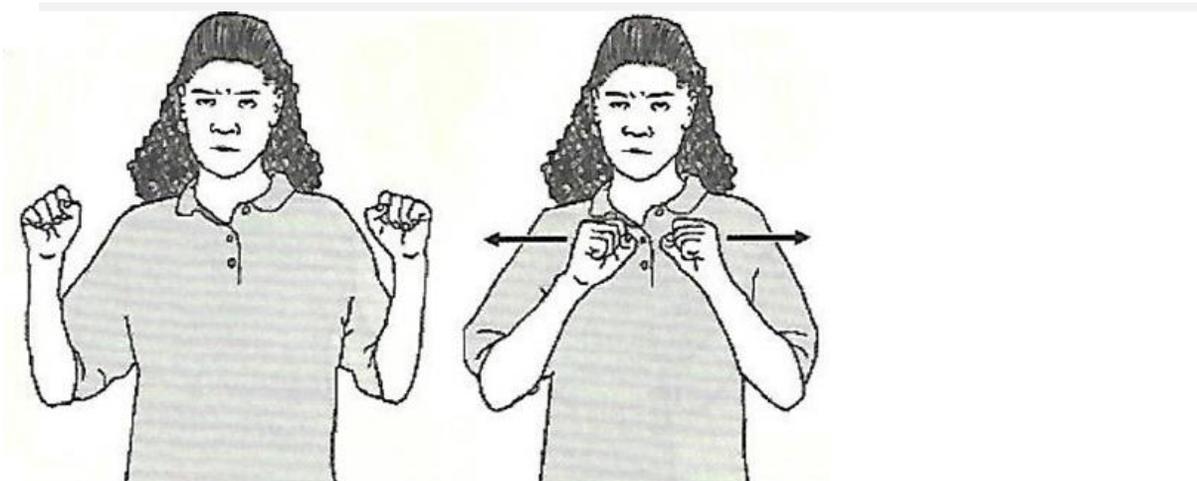


Figure 6 (*yastati?* / *yaqdir*) = CAN/ ABLE TO

The speaker states his physical and mental ability to do good work although he/she is deaf. The sign that expresses ability “CAN” is dynamically used. The ability is inherent in the persons who carry out the work whether they are deaf or not; however, stressing this fact negates the idea that a “deaf” person cannot perform a job/work in the same manner as others, which is generally presumed by the community at large, as advocated in the example.

#### 4.5 Boulomaic Modality

Boulomaic Modality is a type of modality that expresses what is possible or necessary given someone's desires, hopes, fears, regrets, and wants. Perkins (1983,11) categorizes boulomaic modality as dynamic since it has a 'disposition' notion. Such disposition rests on the desire of the interlocutor, thus tantamount to volitive modality that involves the participant's expression of aspirations towards the world.

##### 4.5.1 Volition

**Volitive modality** is concerned with the desires and intentions of the speaker. Such Modality expresses like or dislike of an event and the desires of an individual. In PSL, modality that expresses the volitional meaning of *arghabu* (أرغب) = desire, *uhibu* (أحب) = (would) like is distinct; these modal words are actually regular verbs in Arabic unlike the true modal expressions [such as *yadgibu* (must), *rubama* (may), *la budda* (must be)]. Therefore, each verb is expressed by a different sign according to the meaning it conveys. The sign of YUHIB (يحب) = like (figure 7) usually expresses the volitive meaning of likeness, made by the right hand open and placed toward the chest, and moves downwards and upwards with a facial expression that indicates want and

desire: eyes open and lips spread. PSL uses another sign to express the above meaning (figure 8), but the fingers are apart unlike the sign in figure 7, e.g.

1. أنا بحب زواج صم سبب تواصل  
(أنا أحب الزواج من فتاة صماء لسهولة التواصل معها)

*Ana bahib zawadg sum sabab tawasul*

I **WOULD LIKE** marriage deaf reason communication

‘I **would like** to get married to a deaf girl because it is easy to communicate with her.’

It is noteworthy to mention here that PSL and LIU signs that express volitive modality are identical and are equally intelligible by Palestinian and Jordanian deaf communities. Moreover, both signs are sometimes interchangeably used.



Figure 7 (*Uhibu/ arghabu*, PSL & LIU)



Figure 8 (*Uhibu/ arghabu*, PSL & LIU)

The sign of UREEDU (اريد)= want/ need (Figure 9), in PSL, is expressed by a gesture that indicates want and that the person is in need of something. The right hand is placed in the centre of the chest, with the fingers together bent toward the heart with a downward movement, the palm is open and curved a little into a claw shape. Signers use a stronger facial expression to indicate a greater degree of imperative, e.g.

2. ابوي بدو دوا يوم يوم  
يحتاج ابي الى الدواء يوميا

*Abouy bido (yureed) dawa youm youm*

*My father*      **WANTS**                      *medicine*      *day*                      *day*  
'My father **needs** medicine daily.'

The Meaning of this sign is “to require (something) because it is essential or especially important”, expressing necessity or obligation. This sign is also identical with its counterpart in LIU.



Figure 9 (*Ureedu* in PSL)

## 5. Note on Grammar

PSL (and other Arabic sign languages) exhibit a general preference for a straight subject-verb-object (SVO) word order. This word order does not follow the unmarked standard Arabic of the hearing community (VSO), but does follow the spoken colloquial (SVO) in many structures, though not all (Hendriks 2008, 64). Therefore, one cannot specify a fixed word order to any Arabic sign vernacular; definitely research is very dire in this area. Nonetheless, the pattern of Subject-Predicate structure (theme/rheme) is perhaps most dominant in describing sign languages due to the universality of the pattern within spoken and sign languages at large (of course, regardless of the order).

Modality structures do not, therefore, form an exception. The modal patterns are quite flexible, and one cannot follow a certain pattern to describe them. This is probably because there are no established and codified grammars of the Arabic sign languages which makes it extremely hard to analyse the syntax of modality in PSL and other ArSLs.

Generally speaking, we can still give a syntactic description of some of the examples (above) we received from the informants, and that will shed some light on the general grammar of the modals in sign language and may establish first-hand rules though not reliable to be considered final.

Let us consider example (1) =انت لازم ادرس منيح (Inta **lazem** udrus mneeh) = you must study hard (S/pronoun + modal + verb + adverb). The modal here is used after the subject and before the main verb, but it can be equally used at the beginning (modal + S + V + adverb): **lazem** inta udrus mneeh, or as a comment at the end of utterance (S + V + adv. + modal): Inta udrus mneeh, **lazem**. These patterns may apply to all modals in PSL. However, we should note that such patterns are not allowed in Standard Arabic. Still, some structures such as the comment is permitted in spoken Arabic vernaculars.

In PSL, in the subject- predicate structure, the verbal constructions of OV= object-verb and VO= verb-object are possible. An example like (2) روح دكتور [rouh doctor] (VO) = ‘go doctor’ can be restructured into (OV) دكتور روح (doctor rouh) = ‘doctor go’. The modal can be used at the beginning of the utterance as in لازم روح دكتور (**lazem** rouh doctor) = ‘**must** go doctor’, or at the end روح دكتور لازم (rouh doctor **lazem**) = ‘go doctor **must**’. This word order flexibility seems not to be restricted to modals, or SVO structures, but may be generalized to other ones.

The process of lexicalization and grammaticalization are obvious in ArSLs including PSL. There are signs of grammatical development in PSL such as the use of abstractions including modality. For example, the sign for **RUBAMA** in PSL (fig. 5 above) indicating low possibility (might) is formed by the fore finger of the right hand dragged across the forehead. Clearly, there is no iconic relation of the sign with its intended meaning, unlike the other signs that may have direct or indirect relation with their counterpart gestures in the spoken language.

In addition, we should note that non-manual markings are used to express many types of meaning including modality nuances. Signs are sometimes adequate and sufficient to convey the intended meanings, but in many instances, additional signs such as facial expressions, mouthing, space, and simultaneity are necessary. However, there is much inconsistency in using the non-manuals that makes it extremely difficult to come up with a pattern description of such usage. Inconsistency in mouthing spatial setups found in both LIU (Hendriks 2008, 71) and in PSL is particularly significant and may be typical of emerging sign languages, and it is obvious that grammatical complexity increases as a sign language develops.

## 6. Conclusion

This study attempted to described modal expression forms basically used in a “developing sign language” such as the PSL by using the semantic notions of necessity possibility and ability, and the logical categories of deontic, epistemic, and dynamic. There is no evidence that PSL (and other ArSLs) modal signs can be traced to a foreign “borrowed” source of gestures. Nevertheless, there are certain overlaps with some established foreign sign languages most importantly ASL and LSF.



The deaf community can differentiate between the verb and its types by using the appropriate sign and “body” expression, exploit the movement, repetition, and emphasis pausing where appropriate and continuing if necessary. The signers utilize the appropriate facial expressions to show these differences without having clear codified rules for this language. This makes it subject to the signers’ innovations, their expressive abilities, and the extent of their harmony with the interlocutors. Therefore, there remains a dire need for the grammaticalization of ArSLs, especially to cater for the need to develop teaching curricula using sign language.

There is no doubt that there is an urgent need to enrich the PSL and encourage the deaf community to come up with signs that express new meanings. The deaf and their educators resorted to extrapolation and derivation commensurate with the characteristics of their sign language to help them express different emerging meanings and concepts easily. However, there are still meaning areas that need special development such as abstractions and modality.

Modality presents a great problem especially in understanding speaker intentions and certain academic expressions that use hedging and conjecture, and it is no secret that there are insufficient adequate signs in many Arabic sign languages including the Palestinian Sign Language to express such meanings. Despite the great development and increase in the vocabulary and the enrichment of ArSLs lately, the signs are not enough and still fall short of meeting the aspired for ambition particularly to have “an academic sign language” that can serve university education.

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