HEBREW LOANWORDS IN WRITTEN PALESTINIAN ARABIC

HEBREW LOANWORDS IN WRITTEN PALESTINIAN ARABIC: A LANGUAGE CONTACT STUDY USING ORIGINAL CORPORA

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Abstract

Hebrew loanwords have penetrated not only spoken Palestinian Arabic (PA) but also written PA. Using original corpora, this dissertation examines the semantic categories, relative distribution, and linguistic adaptation, of Hebrew loanwords (HLs) written in Arabic script on digital platforms. Borrowing Hebrew words and writing them in Arabic script in digital texts is a new phenomenon. HLs were collected from websites in Arabic published in Israel, identified as the Israeli corpus, and in the West Bank and Gaza (WG), the WG corpus, and are representative of written PA. The study aims to better understand how contact between PA and Modern Hebrew within and outside the borders of Israel affects the use of HLs in digital texts in Arabic. HLs in PA are distributed across a range of semantic categories, particularly the category of *food* and that of *education and institutions*. The majority of HLs are nouns; and the most frequently used words appear in both corpora. Most HLs have Arabic equivalents; the study identifies two possible reasons for the use of HLs over Arabic equivalents: *cultural precision* and *formality avoidance*. Many HLs are adapted to the phonological and/or morphological system of PA, but some preserve Hebrew syllable structure or Hebrew number and gender markers. An interesting discovery is the formation of new words in PA through the process of root extraction. The vast majority of HLs preserve the Hebrew meaning, while a few select only one of the possible meanings available in Hebrew. A comparison of HLs between the corpora reveals that degree of contact affects the use of HLs in terms of relative distribution and frequency, but not in terms of linguistic adaptation. This is the first study to analyze HLs in formal digital texts in Arabic and to compare the use of HLs on websites originating from different regions of contact, Israel and the WG.

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List of Abbreviations

HL	Hebrew Loanword
MH	Modern Hebrew
MSA	Modern Standard Arabic
PA	Palestinian Arabic
WG	West Bank and Gaza

Linguistic Glossing

1	First person
3	Third person
C	Consonant
F	Feminine
M	Masculine
PL	Plural
PROG	Progressive
PRS	Present
PST	Past
SG	Singular
V(:)	Vowel (long)

Declaration of Academic Achievement

I, Rudaina Hamed, declare this dissertation to be my own work. No part of this work has been published or submitted for publication or for a higher degree at another institution. To the best of my knowledge, the content of this document does not infringe on anyone's copyright. The members of my supervisory committee, Dr. Anna Moro (primary supervisor), Dr. Victor Kuperman (co-supervisor) and Dr. Elinor Saiegh-Haddad provided guidance and support at all stages of this project.

Chapter 1

Introduction

With the ever-growing availability of technology, examining language change as it occurs has become a fascinating area of research in corpus linguistics. This dissertation examines language change via language contact taking place on websites, and in particular, focuses on the language change of Palestinian Arabic speakers in Israel, the West Bank, and the Gaza Strip.

1.1 Research Context

Modern Hebrew (MH) and Palestinian Arabic (PA) have been in contact since the end of the 19th century when Jews started immigrating to Ottoman controlled Palestine. This contact continued during the period of the British mandate in Palestine up until 1948. By then, Hebrew had borrowed many words from Arabic (Henkin-Roitfarb, 2011). Following the establishment of the state of Israel in 1948, PA became a minority language in the region while MH became the dominant language for the majority of Israel (Amara, 2002). Thus, MH has had a direct influence on PA since 1948 (Shehadeh, 2019). This contact between MH and PA has had various impacts on PA, such as code-switching, loan translation, and borrowing. This dissertation is primarily concerned with borrowing lexical items from MH into PA. The terms Modern Hebrew and Hebrew are used interchangeably in this dissertation to refer to the Hebrew spoken in Israel today. The term Arabic is used to refer to Modern Standard Arabic (unless otherwise specified); the use of the term Palestinian Arabic is detailed below in 1.2.3.

Arabic is the mother tongue of the Palestinian Arab citizens of Israel (Holes, 2004). There are more than two million Palestinian Arabs residing in Israel (representing 21% of the total population) consisting of Muslims, Christians and Druze (see Central Bureau of Statistics, 2023). Arabs in Israel live primarily in three areas: (1) the Little Triangle in central Israel; (2) the

Galilee and Haifa district in northern Israel; and (3) the Negev in southern Israel (Amara, 2006b). Most Arabs in Israel (approximately 90%) live in villages and towns in which the population is exclusively Arabs; the remaining 10% live in cities with mixed Arab and Jewish populations, though they live in separate neighbourhoods (Amara, 2006b). This demographic information may help explain the contact situation between PA and MH in Israel. For example, the smaller Arab population living in some mixed cities like Lod (Lid) and Yafa (Jaffa) often speaks Arabic at home, though "a small but rising number" (Levy, 2023, p. 2722) of Arab students attend Jewish schools where the language of instruction is Hebrew. Moreover, as Levy (2023) points out, "in 2019, about 34 of the 1,500 public Hebrew school (excluding religious, Haredi, and special education schools) enrolled at least 10 per cent of Arab students" (p. 2722). As a result of the demographic factors in some mixed cities, many Arabic speakers become fluent in Hebrew. This bilingualism among Arabs in mixed cities commonly leads to the borrowing of Hebrew words into PA.

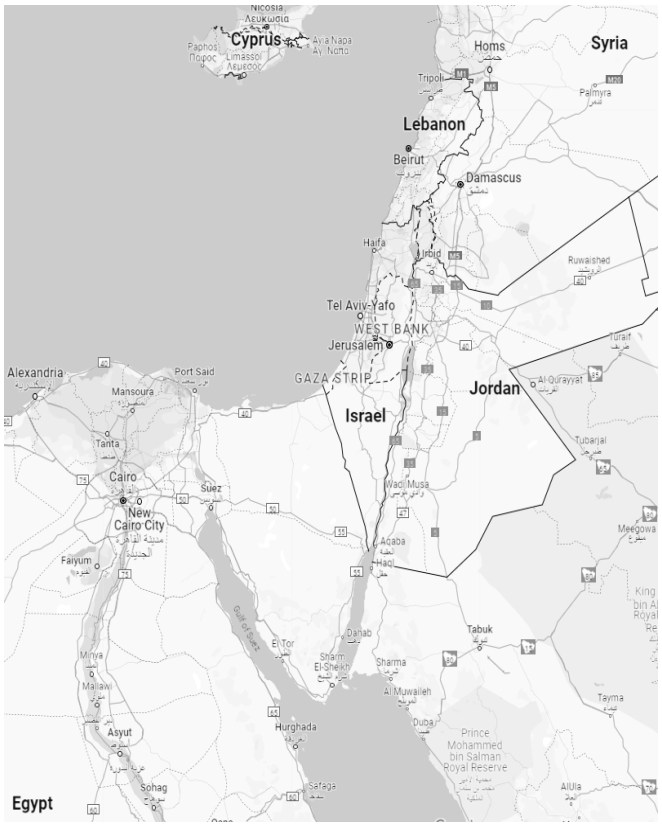
Arabic is also the mother tongue of the Palestinian Arabs who live in the West Bank and the Gaza Strip (jointly referred to in this dissertation as WG). In WG, the official language is Arabic, and Hebrew may be learned through direct contact with Israeli Jews, such as by Palestinians working in Israel (Amara, 2003). Nevertheless, Hebrew is used to a lesser extent than English among the Arabs in WG. The map in Figure 1 displays the borders of Israel, the West Bank and the Gaza Strip.

The map in Figure 1 also shows the political boundaries of the Arab countries bordering Israel: Lebanon, Syria, Jordan, and Egypt. In discussing what distinguishes Israel from its neighbours, Lombezzi (2018, p. 250) goes so far as to state that Israel is "the only state" surrounded by countries all sharing a "unique cultural-linguistic-religious group." Although this

is not quite true, given that the bordering countries include ethnic and religious minorities (e.g., Christians, Druze), it is nevertheless the case that Israel is the only Jewish-religion and Hebrew-language dominant political entity among its neighbours which are Muslim-religion and Arabic-language dominant. Among neighbouring countries, even Lebanon, which was historically considered Christian-dominant, is now considered Muslim-dominant: according to the Central Intelligence Agency's (2020) World Factbook, it is estimated that approximately two-thirds (67.8%) of the population of Lebanon is Muslim. It is certainly accurate to state that, outside of the context of Israel and the WG, the conditions for extensive direct contact between Arabic and Hebrew speakers simply do not exist.

Figure 1

Israel, the West Bank and the Gaza Strip (Google, n.d.)



Geography plays an important role in facilitating contact between Arabic and Hebrew in Israel and WG. Today, Hebrew words have penetrated virtually all domains of PA, including education, food products, technology, health, sports and transportation (Abu Elhija, 2017; Dekel & Brosh, 2012; Henkin, 2013; Henkin-Roitfarb, 2011). This dissertation aims to examine the borrowing of Hebrew words into PA, specifically in written digital texts.

Language contact between MH and PA in Israel has affected online written Arabic over the last two decades due to globalization and the written media becoming electronically accessible. A large body of research examines borrowing from Hebrew into PA in *spoken* language (e.g., Amara 1999a, 1999b, 2006a, 2018; Dekel & Brosh, 2012; Henkin, 2013; Henkin-Roitfarb, 2011; Marʿi, 2013; Shehadeh, 2019), however relatively few studies explore the phenomenon in the *written* language (e.g., Abu Elhija, 2017; Mahajna, 2019; Marʿi, 2016). Several researchers such as Dekel and Brosh (2012), Henkin (2013), Henkin-Roitfarb (2011), and Shehadeh (2019) have pointed out that Hebrew loanwords (HLs) indeed exist in written Arabic produced by PA speakers, but none of these studies have systematically examined the phonological, morphological, and semantic adaptations that these HLs have undergone in written Arabic. This thesis addresses this gap by exploring the distribution, frequency and adaptation of HLs used in written PA by examining the Arabic of websites originating from Israel and WG.

Furthermore, this study considers how direct contact between languages and geography impacts lexical borrowing. While borrowing from Hebrew into Arabic is common among Arabic speakers in Israel, Arabic speakers from the WG, who do not speak Hebrew, might not fully understand the HLs used among PA speakers in Israel. Since Arabs in Israel and Arabs in WG share the PA dialect but have different degrees of contact with Hebrew, this study compares the use of Hebrew words between the two regions and Arab populations in order to shed light on how

the intensity of language contact and associated factors such as literacy in Hebrew might influence the borrowing of Hebrew words into PA as reflected in written digital texts.

1.2 Historical and Linguistic Background

This section describes the chronology of contact between PA and MH in Israel and WG and describes the current status of the PA language variety in Israel and WG. In addition, it introduces some of the terms used in this study.

1.2.1 Chronology of Language Contact Between PA and MH in Israel and WG

Linguistic contact between PA and MH started at the end of the nineteenth century (Amara, 2006a; Henkin-Roitfarb, 2011); at that time, Palestine was under Ottoman rule[1], Turkish was the official language of the government, and spoken PA was the dominant language and *lingua franca* of Palestine (Henkin-Roitfarb, 2011; Lombezzi, 2018; Shehadeh, 2019). During the same period, MH was the *lingua franca* of the Jews in the same area (Henkin-Roitfarb, 2011). The two main groups of Jews at the time were Sephardic Jews and Ashkenazi Jews. The Sephardic Jews, who mainly came from Arabic-speaking countries, spoke Judezmo (also known as Judeo-Spanish or Ladino) and were able to speak PA competently. Ashkenazi Jews came from Europe; their native language was Yiddish, a West Germanic language, and they did not speak PA (Henkin-Roitfarb, 2011). Thus, since the revival of MH as a spoken language in the late nineteenth century, there have been two pronunciations of MH words: Ashkenazi and Sephardi (today called Mizrahi) (see Coffin-Amir & Bolozky, 2005). The differences between the two pronunciations are discussed in Chapter 3.

Following the Turkish rule, and during the time of the British Mandate in Palestine (from 1918 to 1947) English, Arabic and Hebrew were Palestine's three official languages. During the

[1] Palestine was under Ottoman rule from approximately 1517 until 1917.

British Mandate, MH borrowed many words, particularly from PA (Henkin-Roitfarb, 2011). However, following the formation of the State of Israel in 1948, the direction of borrowing began to change: PA started borrowing lexical items from MH, since MH had become the language of the majority and was more influential than Arabic in Israel (Henkin-Roitfarb, 2011). Two principal factors contributed to the diffusion of MH across Israel, including into Arabic-speaking areas: direct contact between PA and MH speakers and the fact that the language of institutions of higher education and government bodies in Israel became and still is MH (Amara, 1999a; Henkin, 2013; Henkin-Roitfarb, 2011; Talmon, 2000).

In terms of direct contact, there are Arab areas (i.e., areas with many Arab inhabitants) in which the degree of language contact between PA and MH is very high, e.g., urban areas, and other areas in which contact is quite limited, e.g., the Negev and the peripheral Northern Galilean villages. The central rural Triangle is considered to have an intermediate level of contact (for further details, see Henkin, 2013 and Henkin-Roitfarb, 2011).

The age and the gender of PA speakers also have an impact on the degree of contact with MH. Adult PA-speaking males use MH more than females, and younger adults more than older adults (Amara, 1995). Younger and male PA speakers likely use MH more because they tend to work outside their villages, in nearby Jewish cities. However, PA speakers of all ages in Israel have varying levels of contact with MH, which can also result in the use of MH words in spoken PA (Amara, 2006a). There is a fair degree of bilingualism among Arabs in Israel, especially among the younger population. Shehadeh (2019) states that many Arabs in Israel among the younger generations are bilingual. According to a 2013 Central Bureau of Statistics survey in Israel, 60% of Arabs in Israel were “proficient or highly proficient” in Hebrew (Druckman,

2013). As mentioned earlier, MH is used the most by PA speakers living in mixed cities, and also by Druze males, who are mandated to serve in the Israeli military (Amara, 1999b).

The history of contact between PA and MH in the WG is similar to that in Israel until 1948. However, after this point, the contact trajectories deviate, resulting in different degrees of exposure to MH in Israel versus in the WG. As mentioned earlier, Palestine was under Ottoman rule until 1917, then under a British Mandate until 1947. Some Palestinians in WG learned MH from contact with Jews during the British Mandate. Between the years 1948 and 1967, there was no contact between PA and MH in WG because the West Bank was a Jordanian territory and the Gaza Strip was an Egyptian territory; WG came under the occupation of Israel in 1967 (Amara, 2003). In 1967, contact was renewed between Palestinian Arabs from WG and MH speakers from Israel, and MH developed into the primary language of business (Amara, 2003). In addition, many Palestinians started working in Israel and as a result began learning spoken MH (Amara, 2003). In fact, even today contact with MH speakers is primarily limited to young males from WG who work in Israel (Amara, 1999b). As mentioned above, two factors principally contribute to the diffusion of MH throughout Israel: direct contact between speakers of PA and speakers of MH and the language of higher education and government institutions (MH). In the case of the WG, borrowing from MH stems only from direct contact (Amara, 1999b).

1.2.2 The Current Status of the Arabic Language in Israel and WG

This section introduces the official languages in Israel and WG; additionally, the language of education and the existence of Arabic language academies will be discussed. The information about Israel is presented first, followed by information about WG.

From 1948 to 2018, Arabic was a co-official language in Israel alongside MH, although the status of Arabic was not equal to MH (Amara 2006b; Amara, 2007; Shehadeh, 2019); MH

was "the preferred language of Israel" (Amara, 2002, p. 61). From 1948 up to today, MH has been the dominant language of government and academia, the media and the labour market (Amara, 2006b; Amara, 2007; Henkin-Roitfarb, 2011; Shehadeh, 2019). When Arabic had official language status before 2018, it was used in some official spheres alongside MH, such as in the court system, in legislation, and in other government contexts, e.g., offices dealing with currency and postage stamps (Amara, 2002). In 2018, MH became the only official language of the state of Israel. It is worth mentioning that today, Arabic is still used in currency and on postage stamps, although it is no longer an official second language of Israel.

Since 1967, the official language of WG has been Arabic (Amara, 2003; Jabali & Ayyoub, 2021). English is the second language and the status of MH is "unclear" (Amara, 2003, p. 218). Usually, the use of MH is "instrumental and work-related" (Amara, 2003 p. 224).

Most PA speakers in Israel attend schools where Modern Standard Arabic (MSA) is the language of instruction for all subjects (Amara, 2002; Horesh, 2015). According to Shwed, Kalish and Shavit (2018), over 70 percent of Arab students in Israel attend Arab-only schools. However, in secondary schools, the textbooks for mathematics and physics are sometimes translated ("poorly" according to Shehadeh, 2019) from MH to Arabic, which results in teachers frequently using MH terminology to teach these subjects (Shehadeh, 2019) even though the language of instruction remains Arabic. It is compulsory for students to learn MH in all Arabic-language schools in Israel from the third grade through high school. Furthermore, MH is a compulsory subject for matriculation exams for all students (Amara, 2006a; Shehadeh, 2019). MH is also the language of instruction in institutions of higher education in Israel; it is used even for the teaching of Arabic at university (see Shehadeh, 2019). Thus, MH is learned formally by PA-speaking children at school; it is also learned informally by some PA speakers of all ages

through contact with Hebrew speakers, which leads to the use of MH words in spoken PA (Amara, 2007).

In the WG, all subjects are taught in Arabic (Jabali & Ayyoub, 2021). English is taught in schools from the first grade (Dajani & McLaughlin, 2009) and in universities across the WG (Amara, 2003). MH is taught formally at a few Palestinian universities (Amara, 2003; Jabali & Ayyoub, 2021). Of course, MH is learned informally through direct contact with MH speakers, particularly at work, in trading goods and in jails (Amara, 2003).

Since the beginning of the 20th century, many Arabic Language Academies have been established in various Arab countries, such as the Arabic Language Academy in Damascus, established in 1919, the Arabic Language Academy in Cairo, established in 1932, followed by many other Arabic language academies in the Arab world (Lian, 2020). One of the goals of these Academies is "to help keep the language alive and active so that it could accompany modern developments in all fields" (Amara, 2018, p. 169).

Until 2007, there was no official body for the Arabic language in Israel that could address questions of language for PA speakers in Israel (Talmon, 2000) or that could "control borrowing" from MH through language planning (Henkin-Roitfarb, 2011, p. 80). In 2007, the first government funded Academy of the Arabic Language in Israel was established, and in 2008, another non-governmental Arabic Language Academy was established in Baqa al-Gharbiyye, called Al-Qasimi Academy for the Arabic Language (Amara, 2018; Lian, 2020). The two Arabic language academies share similar goals, including language maintenance (Amara, 2018). For example, one way that the Academy of the Arabic Language tries to preserve the Arabic language is by publishing flyers (also found on the Academy's website) which include lists of

borrowed words and their Arabic equivalents or alternatives as proposed by the Academy. The effectiveness of these efforts is an open question (see 5.1.5.2 for further discussion).

There are two Arabic language Academies in WG. The first academy is called the Palestinian Arabic Language Academy in Jerusalem, established in 1994, and the second is the Palestinian Arabic Language Academy in Gaza, established in 2013 (Lian, 2020). Their purpose and goals are similar to those of the Arabic language academies in Israel, in terms of making recommendations around the usage of Arabic.

Having provided a brief overview of Arabic and Hebrew from a language planning perspective, I will turn to discussing some key terminology regarding PA used in this dissertation in the next section.

1.2.3 Notes on Palestinian Arabic

The term *Palestinian Arabic* (PA) refers to a subgroup of the Levantine Arabic family of dialects, which also includes Jordanian, Lebanese, and Syrian Arabic (Abu Kwaik, Saad, Chatzikyriakidis, & Dobnik, 2018; Jarrar, Habash, Akra, & Zalmout, 2014). In this dissertation, I use the term PA as a cover term to refer both to the colloquial and the written Arabic produced by PA speakers in Israel and WG. PA speakers in Israel and WG share the same general variety of Arabic, but there are differences between the two groups in the use of Hebrew words in spoken communication. Due to greater contact with Hebrew speakers, PA speakers in Israel tend to use Hebrew words in spoken PA, whereas this is not typically the case for PA speakers in WG (Hawker, 2011). I will use the terms Palestinian Arabic and Arabic interchangeably to refer to the Arabic spoken and written by PA speakers in Israel and in WG today.

In a similar way, I use the term *Palestinian Arabic speakers* to refer both to Palestinian Arabs who are citizens of Israel, and those who live in the WG who speak varieties of the PA

dialect. Palestinian Arabs who are citizens of Israel are known by a variety of other descriptors: Arabs of 48 (referring to 1948); Arabs 'on the inside' (i.e., within Israel); Arabs of Israel; Arab citizens of Israel; Palestinian citizens of Israel; the Arab population in Israel; and the Arab sector (Ayyad, 2013; Shehadeh, 2019). Some scholars also refer to the dialect of this population as Israeli Arabic (Dekel & Brosh, 2012). In this study, I will distinguish the two varieties of PA if necessary, by referring to them as "PA in Israel" and "PA in WG".

1.3 Motivation for this Study

The use of HLs in *written* PA has received limited attention, although several relatively recent studies on Hebrew words in spoken PA exist. Further study is needed to examine borrowed Hebrew words in written Arabic produced by PA speakers in Israel and the WG. This topic is important for understanding how language contact between speakers of different languages helps spread loanwords across borders, such as between Israel and the WG. The study of HLs in PA will enable us to observe a relatively contemporary and complex situation of direct contact between speakers and will help us to understand the nature of borrowing from Hebrew in these regions. Since writing is a different mode of communication from spoken language, one that typically requires planning and forethought, it is interesting to examine which aspects of HLs penetrate written language and what characteristics those loanwords display (semantic, phonological, morphological) to gauge the impact of direct contact on borrowing in this region.

1.4 Modern Hebrew Loanwords in Palestinian Arabic

This section begins by reviewing what is currently known about MH loanwords in spoken PA, followed by the available studies on HLs in written PA. As we will see, available studies on MH in written PA are limited to written forms that largely serve as proxies for spoken

and informal communication, such as Facebook and WhatsApp. We will then outline in detail the current study.

1.4.1 MH Loanwords in Spoken PA

Many studies have focused on MH loanwords in spoken PA in Israel (see: Amara 1999a, 1999b, 2006a, 2018; Dekel & Brosh, 2012; Henkin, 2013; Henkin-Roitfarb, 2011; Marʿi, 2013; Shehadeh, 2019; and others). As mentioned earlier, contact between PA speakers and MH speakers began before the establishment of Israel, but direct contact increased after 1948 (Amara, 2006a; Henkin-Roitfarb, 2011). As a result of over seven decades of extensive direct contact between Arabic speakers and MH speakers, at work, in universities, and in government offices and institutions, many MH words and phrases entered spoken PA in Israel (Amara, 2006a; Shehadeh, 2019). PA speakers from all academic levels and ages use MH words in their speech (Amara, 2006b, Amara 2018). Shehadeh (2019) adds that HLs are used in spoken PA in multiple contexts, both within and outside the home (including medical and legal environments), even though most such borrowings have Arabic equivalents, e.g., *bisīdir* (MH *beseder*) ‘okay’ and *mīsir* (MH *meser*) ‘message.’ Most HLs are nouns, as is typical of lexical borrowing; it has long been observed in language contact studies that the greatest number of borrowings are nouns (e.g., Tadmor, Haspelmath, & Taylor, 2010). HLs in spoken PA belong to many areas of everyday life, such as food, education, construction, business, the economy, health, transport, sports, public services, technology, and entertainment (Amara, 2006a; Dekel & Brosh, 2012; Henkin, 2013; Henkin-Roitfarb, 2011; Shehadeh, 2019, among others).

Amara (2006a, 2018) indicates that there are more HLs in modern domains (e.g., transport and electricity) than in traditional domains (e.g., kinship and animal names) because modern domains reflect a greater degree of contact between PA speakers and Israeli culture after

1948. Although some MH words may be borrowed to fill lexical gaps for modern concepts that did not exist in PA, the majority of HLs have Arabic equivalents (Amara, 2006a; Henkin-Roitfarb, 2011). Dekel and Brosh (2012) suggest the possibility that PA speakers may not be aware of the Arabic equivalent or find some MH words difficult to translate due to their cultural connotations. Indeed, many MH words retain their form and meaning in PA, e.g., *stam* 'merely, just like that' (MH *stam* 'just like that') and *ʾīn dafār kazi* 'there is no such thing' (MH *en davar kaze* 'there is no such thing').

The borrowing of MH words in spoken PA is not only motivated by the need to fill lexical gaps; it can also be motivated by prestige. Some PA speakers prefer to use MH words, even if they know the Arabic equivalent, because they are perceived as more prestigious. As Henkin-Roitfarb (2011, p. 62) explains, MH words borrowed in PA can "symbolize modernism, education, and social mobility." Shehadeh (2019) and Amara (2002) agree that, particularly in the case of Arab youth, Hebrew words can symbolize progress and modernity.

Other reasons suggested for lexical borrowing in the literature include the avoidance of taboo (Amara, 2006a, 2018). For instance, the MH word *shirutim* 'toilet' is often used in PA instead of the Arabic words *ḥammām* or *mirḥāḍ* because the latter have negative connotations; the MH loanword makes it possible to avoid breaking a taboo (Amara, 2018).

Henkin-Roitfarb (2011) has also suggested that spoken PA is particularly prone to borrowing Hebrew words. In her words, there is an "openness of PA with regard to foreign influence" because of the "salient diglossia" (p. 79) associated with Arabic. Arabic is a diglossic language that, in the language of Ferguson (1959), has a standard or *high* variety used for formal and literary functions (i.e., MSA) and a *low* variety used for everyday communication (i.e., the spoken Arabic varieties aka Colloquial Arabic). In Henkin-Roitfarb's view, since MSA is

resistant to borrowing, it leaves the spoken Arabic varieties, such as PA, more susceptible to incorporating loanwords, thus ensuring that borrowings do not "contaminate" (Henkin-Roitfarb, 2011, p. 79) the standard variety.

HLs in PA may keep their MH form and meaning, as we will see ahead (Chapter 5), or undergo linguistic adjustments to comply with the Arabic phonological or morphological system (Amara, 2006a; Dekel & Brosh, 2012). We will discuss differences between Arabic and MH phonological and morphological systems in Chapter 3. Some MH words may undergo semantic changes when borrowed in PA; e.g., Henkin-Roitfarb (2011) found that in some PA varieties the MH word *shakhur* 'black' is adopted but restricted to the compound خبز أسود *khubz ʾaswad* 'black bread' (i.e., whole-grain bread).

It has been observed that there are three ways to pluralize HLs in spoken PA (all plural examples in this section are from Henkin-Roitfarb, 2011). HLs can retain the MH plural morphemes, *-ot* or *-im* as in *bagruy-ūt* (MH *bagruy-ot*) 'matriculation exams,' and *maḥsūm-īm* (MH *maḥsom-im*) 'roadblocks.' HLs can also use the Arabic feminine plural morpheme *-āt* (a default form for borrowed inanimate nouns), e.g., *bagrūt-āt* (MH *bagruy-ot*) 'matriculation exams.' Moreover, it is possible for HLs to use the Arabic broken (non-concatenated) plural as in *bagārīt* (MH *bagruy-ot*) 'matriculation exams.' In her study of spoken PA in the southern part of Israel (the Negev), Henkin-Roitfarb (2011) observes that less-integrated HLs tend to keep the MH plural morpheme and are usually used by educated bilingual speakers; more integrated HLs are accompanied by Arabic morphology and are typically used by less-educated monolingual speakers.

Recently, the use of HLs has been understood as "integral" to spoken PA in Israel (Amara, 2018). In fact, some scholars go so far as to suggest new terms to identify a new, quasi-

hybrid or mixed variety: *ʿaraʿibriyya*, *ʿarbāniyya* or *ʿirbiyya* in Arabic, *ʿarʿivrit*, *meʿurvetet* or *ʿaravit balibosh ʿivri* in MH, Hebrew-Arabic language, and Israeli Arabic (Dekel & Brosh, 2012; Marʿi, 2013; Shehadeh, 2019). According to Shehadeh (2019, p. 35), "this register of spoken Arabic and also written Arabic" used by many Arabs in Israel may not be fully understood by an Arabic speaker who does not know MH. Of course, not all scholars agree with this view, and many are silent on the matter. Hawker (2018), who examined the use of Hebrew by PA speakers in Israel in the past decade (data collected in 2015), concludes that there is no such language mixing phenomenon. Her study discusses several cases of codeswitching and the borrowing of specialist terminology from MH (e.g., *milgot* 'bursaries,' *kablani qolot* 'vote contractors,' *ḥavat daʿat* 'opinion'), in addition to some discourse markers. In Hawker's view, the analysis of the data collected for her study does not have enough evidence to suggest that a new hybrid variety of spoken PA has emerged in Israel.

In WG, the borrowing of MH words is associated with the flow of Palestinians from the WG who temporarily migrate to a Hebrew-speaking location in Israel, sometimes on a "day labour" basis, for work (Hawker, 2011; Jabali & Ayyoub, 2021). Moreover, when Palestinians from WG communicate with Palestinian citizens of Israel – who use MH words in their Arabic speech – those Israeli citizens, although Arabic speaking, also provide another source of exposure to MH words (Hawker, 2011).

Jabali and Ayyoub (2021) found that MH words have indeed penetrated spoken PA, but that this penetration is limited to the names of commercial goods, such as food and beverages, as well as the names of advertised construction products. They also note that many Palestinians who work in Israel, in construction, agriculture or industry, use MH to communicate with other workers and employees. Another point of contact between MH and PA speakers is at checkpoints

in the West Bank. All of these circumstances lead to a situation in which PA speakers come to use some MH words in everyday conversations**.** Although Jabali and Ayyoub's (2021) study focuses on the West Bank, many of the same linguistic contact contexts would historically apply also to PA speakers in Gaza.

Inkheili (2020) too examined the use of MH words in spoken PA in the West Bank based on interviews with Palestinian workers hired to do manual labour in Israel. Inkheili also argues that the use of MH technical terms is motivated largely by the need for better communication with MH speakers in the workplace and the lack of known Arabic equivalents. Additionally, the interviews revealed that many workers from the West Bank who are familiar with MH loanwords were completely unaware of the words' MH origins.

1.4.1.1 English loanwords

Presently, MH is "the main source of innovation" (Amara, 2006a, p. 6) for lexical borrowing in PA in Israel (in contrast to WG), not only in terms of Hebrew words borrowed, but also as a vehicle for the entry of English terms in PA: many English words penetrate PA in Israel indirectly through MH, rather than directly through English (Amara, 1999a; Amara, 2006a; Dekel & Brosh, 2012; Rosenhouse, 2008). For example, the word *ṭesṭ* in MH is borrowed from the English word 'test' and the meaning of the word is restricted in MH to 'an annual car licensing test' but in English it may refer to different types of tests (Dekel & Brosh, 2012); the word تست *tist* in PA spoken in Israel is used with the same restricted meaning that it has in MH, indicating that PA borrowed it from MH, rather than directly from English. It is possible to gauge the source of English borrowings. Let's consider the borrowing of 'automatic,' cited by Amara (2006a): in Israel, PA speakers use the form أوتومات *ʾūtūmāt*, derived from MH *oṭomaṭ*, whereas in the WG, PA speakers use the form أتوماتيك *ʾotomātīc*, which is borrowed from English. Amara

(2003) confirms that English is the most widely used additional language in the WG. As observed correctly elsewhere by Amara (1999b), Arabs in Israel view MH as a prestige language, while Arabs in the West Bank, particularly in urban centres, consider English a prestige language. It is not surprising, then, that in WG, in parallel fashion to most Arabic-speaking countries, English is the dominant source of lexical borrowing.

1.4.2 MH Loanwords in Written PA

Some scholars have observed that a small number of MH borrowings are used in written PA (e.g., Amara, 2006a; Dekel & Brosh, 2012; Henkin, 2013; Henkin-Roitfarb, 2011; Shehadeh, 2019), mentioning also that these loanwords may appear in Hebrew script only, in Arabic script only, or one alongside the other. The current study focuses on MH words written in Arabic script that appear on websites in Arabic published in Israel and in WG.

The daily contact of Arabs in Israel with either the MH language or with Israeli culture may lead to the adoption of MH words in spoken PA; in some cases, these loanwords also appear in written Arabic among PA speakers in Israel, especially in newspapers. Examples of HLs that often appear in newspapers include بجروت *bajrūt* 'matriculation exam' and رمزور *ramzūr* 'traffic light' (Amara, 2006a, p. 6). Henkin (2013) reports loanwords in newspapers, especially in advertisements, and that their orthography may be phonetic or etymological (i.e., based on MH writing). For example, the MH etymological *ṭ* ט, pronounced [t], is conveyed phonetically in the PA form تفتوف *tiftūf* (MH *ṭiftuf*) 'drip irrigation system,' while in the loanword شلاط *shalāṭ* (MH *shalaṭ*) 'remote control' it reflects the MH etymological *ṭ.* Henkin (2013) adds that dialectal variants of PA may influence the spelling of HLs.

As Henkin-Roitfarb (2011) observes, although HLs are used in many areas of everyday life in spoken PA, fewer are found in written PA. At times, written forms are exploited in specific

communities for very specific literary aims, such as humour and satire (Al-Refa'i, 2001; Henkin-Roitfarb, 2011)[2].

With the advent of digital technology and the broad dissemination of written materials through smartphones and other devices, much written Arabic used by PA speakers does not align with MSA and is not subject to the strict editorial controls of publishers. PA writers in digital spaces have more freedom with lexical choices. Moreover, digital spaces enable 'general audience members' to engage with digital texts. The small number of studies on the use of HLs in digital spaces are reviewed below.

Marʿi's (2016) study of code-mixing in Israel includes an account of MH words written in Arabic and in Hebrew scripts[3] that appear in the comments sections of websites. Marʿi (2016) suggests that writing MH words in Hebrew script is motivated either by prestige factors (users wish to show their proficiency in MH) or by difficulty in finding the Arabic equivalent for MH words. He provides several examples (see pp. 216-229), mainly from readers' comments on the Panet website, a general content news site aimed at the young adult Israeli Arab community.

Abu Elhija (2017) examines HLs used in written PA based on Facebook messages ("timeline posts and comments"); the study includes loanwords written in Latin, Arabic or Hebrew scripts. The HLs used in the Facebook study are usually nouns taken from categories such as technology, food, education and health; Abu Elhija (2017) also observes that the orthography of these HLs usually reflects Arabic rather than MH phonology. She admits that the use of HLs on Facebook is less frequent than in face-to-face conversations, and suggests that this

[2] For instance, one of the newspapers (distributed in the Negev area in Israel) includes a social satire column that portrays the Negev Bedouin community from the perspective of the younger generation. This printed satire includes many MH words motivated by humour (see more about bilingual humour in Henkin-Roitfarb, 2011).

[3] Gaash (2017) examines the use of Hebrew letters to represent Arabic, e.g., as used in online comments on Israeli websites that serve Arabic-speaking communities. This particular phenomenon is excluded from the current study.

is likely due to users' awareness that Arab readers in other countries would not typically have knowledge of MH.

Mahajna (2019) examines loanwords in online written PA used by Arabic speakers in Israel, in the context of the instant messages sent via the apps WhatsApp and (Rakuten) Viber. The HLs in this study come from many semantic categories, including technology, education and employment. In keeping with other studies mentioned thus far (Abu Elhija, 2017; Amara, 2006a; Henkin-Roitfarb, 2011; Henkin, 2013; Shehadeh, 2019), Mahajna (2019) finds that nouns are the most frequent type of loanword from MH, followed by adjectives; users rarely borrow verbs or adverbs. In addition, most HLs written in Arabic script are integrated to Arabic phonology. Mahajna (2019) proposes a variety of possible reasons for the borrowing of MH words: the desire to avoid formal or (Classical) Standard Arabic words; the need to refer to new concepts; the need to identify names of institutions and places; or the word is very frequent in MH speech.

To our knowledge, there is no study of the use of HLs on social media sites among PA speakers in the WG. Jabali and Ayyoub (2021) mention that HLs in written PA are quite uncommon, and are found in some banners and commercial advertisements that use Arabic characters to represent MH words.

As we have seen, much of what we know about HLs in PA focuses either on spoken PA or on platforms used as a proxy for spoken and informal communication, such as Facebook and WhatsApp. In this informal mode of writing, users are not necessarily expected to communicate in MSA; in fact, as we have observed, in social networking apps, users may avail themselves of Arabic, Latin or MH script. The current study will examine MH words written in Arabic script in digital platforms expected to be written in MSA.

1.4.3 The Current Study

Several decades of language contact between PA speakers and MH speakers in Israel and WG is sufficient time for HLs to penetrate not only spoken PA but also written PA. We have observed that many studies of PA examine the use of HLs in spoken PA, and that the few studies of HLs in written PA capture a more informal type of writing. Moreover, even the latter studies, based on informal language, are limited to HLs used among PA speakers in Israel. There is a paucity of research concerning HLs used in written PA by speakers in WG.

Typically, the use of HLs is not encouraged in formal written Arabic intended for PA readers. Even in digital texts, one generally finds adherence to MSA, the standard variety that is supposed to be used for written purposes. However, as mentioned above, some digital texts may not always be subject to strict editorial monitoring; for example, a recipe submitted by a reader, a local story that needs to be made immediately available, or an announcement of the opening of a new restaurant. It is these digital spaces, ostensibly still formal yet perhaps less monitored, that provide a window onto the penetration of HLs in PA. This digital flexibility provides researchers with the opportunity to examine authentic unedited or less-edited texts, and the role that geography (PA in Israel vs. WG) and intensity of contact play on lexical borrowing in PA.

Much research is still needed in order to understand this interesting new chapter in the history of written Arabic in Israel and WG. This study aims to fill gaps in the literature by analyzing HLs used in digital texts in Arabic that are generally intended for PA-speaking readers; in addition, it compares the use of HLs on websites in Israel and in WG. This study offers a unique set of data collected from websites written in Arabic and published in Israel and in WG (see Appendix B) that will add to our understanding of how contact between PA and MH influences the borrowing of MH words in written PA texts.

1.4.3.1 Research questions that underpin the current study

Among the issues this study was interested in exploring were questions such as the following. What types of HLs are included in written PA? What semantic categories are represented? Which words appear to be borrowed with greater frequency? What type of phonological and morphological adaptation do these words undergo, given that Arabic and Hebrew are both Semitic languages? What can be said about the motivations that underpin borrowing? Does geography affect patterns of borrowing? What does the data suggest about the degree of integration of HLs in PA? It was possible to shed light on all of these matters through the data collected for this study.

1.4.3.2 Study breakdown

This dissertation consists of six chapters. In this chapter we have provided an overview of the broader context for the research area, including the historical and linguistic background necessary to understand contact between PA and MH in Israel and WG. Chapter 2 reviews the broader literature on language contact and provides definitions of relevant linguistic terms. Chapter 3 provides a brief background on the phonological, morphological and orthographic aspects of Arabic and MH. This information will provide a foundation for analyzing the collected data. Chapter 4 describes the methodology used in this study, including details regarding data collection and the corpora created for this study. Chapter 5 presents key findings regarding the data obtained from our Israeli and the WG corpora, including distributional properties of the HLs collected and a discussion of their linguistic adaptation. Chapter 6 summarizes the study and discusses its implications and limitations and offers suggestions for future research.

Chapter 2

Review of Language Contact and Borrowing

When two languages come into contact, lexical items may transfer from one language to another in a process known as borrowing. This Chapter outlines the theoretical framework for the data analysis chapter in this thesis by reviewing the literature on language contact and lexical borrowing. The current study analyses Hebrew lexical items that appear in written Palestinian Arabic (PA). Hebrew lexical items typically enter PA speech, rather than writing. Accordingly, the literature review in this Chapter focuses primarily on loanwords resulting from direct contact that are found in speech. The chapter is structured as follows: Section 2.1 reviews definitions of language contact, the borrowing process, loanwords, and describes which words are typically most likely to be borrowed; Section 2.2 outlines what we know about the motivations for borrowing; and Section 2.3 discusses the linguistic adaptation that loanwords may undergo in the recipient language.

2.1 Language Contact, Borrowing and Loanwords

Language contact is a well-known sociolinguistic phenomenon that is defined most broadly as "the use of more than one language in the same place at the same time" (Thomason, 2001, p. 1). Thomason adds that in language contact situations, some communication between speakers of different languages is necessary, but speakers themselves do not necessarily need to be bilingual.

The current study focuses on language contact between PA and Modern Hebrew (MH) in Israel since 1948 and in the West Bank and Gaza (WG) since 1967. In the Israeli language contact situation, the majority of teenage and adult PA speakers (not children) are bilingual and come into contact with MH speakers in everyday life. PA speakers in WG, on the other hand, do

not typically know MH and only use MH to communicate with MH speakers in certain contexts (for more details about the history of language contact between PA and MH, see Chapter 1). It is worth examining how these different contexts, that presuppose varying degrees of contact between speakers of each language and varying degrees of knowledge of the other language (from very limited knowledge to fluently bilingual), shape the borrowing of MH words and their penetration in written PA.

As Thomason (2001) and others have pointed out, no language develops in complete isolation from other languages. In cases of direct contact, i.e., when languages need to coexist, there can be one of three different linguistic outcomes, according to Thomason (2001). One possible outcome is *contact-induced language change*, which includes the borrowing of many words from another language, such as the case of the borrowing of MH loanwords in PA. Another possible outcome is *extreme language mixture*, such as in pidgins, creoles, and mixed languages. A third potential outcome is *language death*, i.e., one language is supplanted by the other; examples include Cornish, Coptic, and Sumerian (for more examples, see Campbell, 2007). The linguistic outcome depends to a great extent on the intensity of contact between the speakers of the languages: less intense contact leads to contact-induced change while more intense contact can lead to language death. In the terminology of Thomason (2001), the contact between PA and MH examined in this dissertation results in contact-induced language change, specifically lexical borrowing. Thomason and Kaufman (1988) define borrowing as "the incorporation of foreign features into a group's native language by speakers of that language: the native language is maintained but is changed by the addition of the incorporated features" (p. 37).

The phenomenon of *language shift* (e.g., Thomason & Kaufman, 1988) is worth mentioning briefly. In contrast to *language maintenance*, language shift can take place when "a group of speakers shifting to a target language fails to learn the target language perfectly" (p. 39). In *language shift* situations, there can be much linguistic interference from the target language. Speakers ultimately switch from their native language to another language, which may lead to the death of their native language. In contrast, in *language maintenance* situations, speakers preserve their native language (Winford, 2003). Thus, the elements that are transferred from one language to another (or that are "borrowed" from the perspective of the language that receives the "transferred" items) differ depending on the type of contact between the languages, and whether there is ultimately a context for language maintenance or language shift.

This study is interested in the borrowing of lexical items from MH (the foreign language in this contact situation) into PA (the native language) within a context of language maintenance. In this scenario, the PA speaking minority maintains their native language and borrows MH words, mainly as a result of contact with the MH speaking majority in Israel.

In addition to Thomason and Kaufman's (1988) definition of borrowing, there are several other – often overlapping – definitions of borrowing in the literature. Among the earliest and most well-known definitions available are those of Haugen (1950) and Weinreich (1968). Haugen (1950) defines borrowing as the attempt of the speakers of one language to reproduce new patterns that exist in another language, but not in their native language. Haugen classifies two types of borrowing: *importation* and *substitution*. Importation keeps the pattern of the original language the same, while substitution refers to alterations or replacements of any aspect of the original patterns. For example, as we will see in Chapter 5, in reproducing Hebrew words, PA speakers may substitute sounds to adapt MH words to Arabic phonological patterns.

Another definition of borrowing comes from Weinreich (1968) who uses the term *interference.* He defines interference as "instances of deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than one language" (p. 1)[4]. In practice, whenever languages are in contact, lexical items (e.g., words, phrases) can be borrowed from one language, the *source language*, into the other, the *recipient language*[5], independently of the degree of bilingualism of individuals within the community. In this dissertation, MH is the *source* language, from which a word may be borrowed, and PA is the *recipient* or borrowing language.

The seminal work by Haugen (1950) distinguishes between three different types of lexical borrowing: loanwords, loan blends, and loan shifts. In loanwords both the form and meaning are borrowed from the source language into the recipient language, whereas in loan blends, one morpheme of the word is borrowed from the source language and the other morpheme is native (Haugen's examples refer to cases of derivational morphology). Finally, in loan shifts, a new meaning is borrowed from the source language and attached to a native form. The distinction between loanwords and loan blends is not always straightforward: is a native suffix added to a borrowed noun an example of a loan blend or simply an instance of the morphological adaptation of a loanword? As Winford (2003) explains, many loan blends do not enter the recipient language as a blend, but rather "arise when native (recipient language - RL) derivational processes are applied to previously imported words" (p. 44); these types of loan blends "are really due to the general process of integrating loan items into the morphology of the recipient language" (p. 44). We agree that forms that are adapted to the recipient language

[4] Thomason and Kaufman (1988) also use the term "interference" as a cover term for different kinds of borrowing.
[5] The source language may also be called the donor language or model language, and the borrowing language is also known as the receiving language, or replica language (Haspelmath, 2009).

morphology (be it inflectional or derivational) ought to be classified as loanwords. As already noted, the focus of this study is loanwords.

According to Haugen (1950), loanwords can "show morphemic importation without substitution. Any morphemic importation can be further classified according to the degree of its phonemic substitution: none, partial, or complete" (p. 215). That is to say, when a language borrows the form and the meaning of a foreign word, the borrowed word may integrate phonetically into the patterns of the recipient language. Loanwords can be categorized as unintegrated, partially integrated, or fully integrated, based on their level of adaptation in the recipient language.

Loanwords can also undergo varying degrees of morphological adaptation. Hasplemath (2009, p. 36) notes that loanwords are usually unanalyzed units in the recipient language. For instance, Haspelmath (2009, p. 36) cites the German compound *butter-brot,* meaning literally 'butter-bread,' which was borrowed in Russian as *buterbrod,* and which has remained a monomorphemic (and thus not analyzed) form in Russian. Indeed, we will observe instances in which Hebrew words or phrases are interpreted as a single unit in PA, deprived of the structure (units) they have in the source language.

Finally, since Arabic and Hebrew both belong to the Semitic language family, it is important to distinguish between the terms *loanword* and *cognate*. In contrast to loanwords, cognates are words that are found in two or more languages that are similar because they are derived from the same word in an ancestral language. For example, the Hebrew and Arabic words for 'hand' are both *yad* because both languages inherited it from a common Proto-Semitic ancestor. Thus, there are cases in which it is important to account for the etymology of the words

in question because similar words derived from a common ancestor may be cognates rather than loanwords (Haspelmath, 2009).

To summarize, this section reviewed a number of definitions of borrowing and loanwords in the literature. In this study, the terms *loanword* and *borrowed word* are used interchangeably. We agree with Haugen (1950) that the term *borrowing* refers to the process of incorporating elements from the source language into the recipient language, whereas the term *loanword* refers to the product that results from borrowing.

2.1.1 Borrowing Hierarchy

It has long been observed that certain lexical items are more easily borrowed than others. As a result, some scholars have suggested hierarchies for borrowing lexical items in language contact situations and describe a variety of conditions that may limit the type of elements to be borrowed. Haugen (1950) proposed a scale of adoptability based on word class, according to the hierarchy in (1).

(1) *nouns > verbs > adjectives > adverbs > prepositions > interjections*

As seen in Haugen's (1950) scale, nouns are borrowed more frequently than verbs and verbs are more borrowed than adjectives, etc. Haugen (1950) argues that nouns are introduced into a speaker's vocabulary over time; pronouns and articles are not typically borrowed because they are part of a speaker's early (childhood) lexicon. In other words, one's noun and verb inventory (open-class categories) continually grows while grammatical items represent closed lexical classes and are thus less susceptible to borrowing. McMahon (1994) notes that "verbs are relatively hard to borrow, and languages often borrow a nominal or adjectival form and verbalise it by adding an all-purpose verb like 'make' or 'do'" (p. 208). Weinreich (1968) also comments on the fact that nouns are borrowed in greater numbers because these represent "items for which

new designations [are] needed"; thus, he attributes the prominence of nouns among loanwords to "lexical-semantic" factors (p. 37). Nouns are borrowed more than any other word class due to their semantic function, such as indicating new concepts; as we will see in Chapter 5, this is indeed the case for MH loanwords in PA.

Van Hout and Muysken (1994) offer the following hierarchy (2) of borrowing by word class which builds on Muysken's (1981) discussion of Spanish borrowings in Quechua:

(2) *nouns > adjectives > verbs > prepositions > coordinating conjunctions > quantifiers > determiners > free pronouns > clitic pronouns > subordinating conjunctions*

In this hierarchy of borrowability, it is proposed that adjectives are, in fact, more borrowable than verbs. According to Winford (2003), this may be because adjectives frequently occur in contexts where they can be separated and extracted as loans. What is common to both Haugen's and Van Hout and Muysken's hierarchies, and to hierarchies proposed by others as well, is that nouns are the most frequently borrowed. Whether verbs or adjectives are more borrowable remains an open question, and may depend on other factors, such as typological distance between donor and recipient languages.

In addition to part-of-speech hierarchies, scholars also propose a hierarchy for the types of language changes that can occur under contact-induced borrowing. For example, Matras (2009) notes that the borrowing of lexical items and function words precedes the borrowing of bound morphemes. He argues that "bound morphology has been observed to be relatively resistant to borrowing compared with both lexical items and grammatical function words" (p. 209).

Thomason and Kaufman (1988) propose a five-level hierarchy of language contact situations that leads to the borrowing of different types of elements. According to this model, the higher the intensity of contact between the source language and the recipient language, the more likely structural elements are to be borrowed. Table 1 describes borrowing according to this scale of increasing intensity of contact:

Table 1

Thomason and Kaufman's (1988) Borrowing Scale

Level of contact	Borrowed elements
1. Casual contact	Lexical borrowing only
2. Slightly more intense contact	Slight structural borrowing
3. More intense contact	Slightly more structural borrowing
4. Strong cultural pressure	Moderate structural borrowing
5. Very strong cultural pressure	Heavy structural borrowing

According to this hierarchy, lexical borrowing presupposes any structural borrowing. It is not necessarily the case, however, that structural borrowings will occur in all language contact situations. For example, Thomason and Kaufman (1988) note that "large numbers of English loanwords in scientific and technological areas occur in many languages and are not accompanied by structural borrowing" (p. 78). Furthermore, according to the proposed hierarchy of Thomason and Kaufman (1988), structural borrowing is more common in situations with many bilingual speakers.

Thomason (2001) proposes a more detailed and revised borrowing scale with only four levels (levels four and five in the table above are merged into one level named "intense contact"), as shown in Table 2 below.

Table 2

Thomason's (2001) Borrowing Scale

Level of contact	Bilingualism of borrowers	Attitudes of borrowers	Borrowed elements
1. Casual contact	Borrowers do not need to be fluent in the source language	-	Only content words (no structural borrowing)
2. Slightly more intense contact	Some borrowers must be fluent bilinguals	-	Function words (e.g., conjunctions and adverbial particles) Minor structural borrowing, such as phonological features in loanwords (e.g., new phonemes realized by new phones)
3. More intense contact	Borrowers are more likely to be bilinguals	Favour borrowing	Closed-class items (e.g., pronouns and some derivational affixes) More structural borrowing in phonology (e.g., deletion or addition of some phonemes); in syntax (e.g., word order); and in morphology (e.g., adding of borrowed inflectional affixes to a native word)
4. Intense contact	Very extensive bilingualism	Strongly favouring borrowing	Heavy lexical borrowing in all parts of the lexicon Heavy structural borrowing in phonology, syntax and morphology

Thomason (2001) affirms that in casual language contact, fluency in the source language need not be necessary. As the intensity of contact increases more borrowers are likely to be bilinguals; in addition, their attitudes toward the source language may also have an impact on the borrowing process. At the most intense contact level, there is a strong preference for borrowing and a high degree of bilingualism among borrowers. Thus, in Thomason's (2001) model of borrowing, degree of bilingualism directly influences the borrowing process.

As seen in Table 2, both phonological borrowing and morphophonemic borrowing require more intense contact, at least levels two (phonology) and three (morphophonemic), according to Thomason's scale. Of course, as Thomason (2001) points out, typological *congruence* between source and recipient languages, ought to facilitate structural borrowing: "it is easier to introduce borrowings into typologically congruent structures than into typologically divergent structures" (p. 71).

Finally, we can also describe borrowability hierarchies in terms of the semantics of loanwords. In Haspelmath and Tadmor's (2009) Loanword Typology Project, they categorize 1460 lexical *meanings* (not loanwords) from 41 recipient languages into 24 semantic fields: *the physical world, kinship, animals, the body, food and drink, clothing and grooming, the house, agriculture and vegetation, basic actions and technology, motion, possession, spatial relations, quantity, time, sense perception, emotions and values, cognition, speech and language, social and political relations, warfare and hunting, law, religion and belief, modern world,* and *function words.* These broad categories will inform the descriptions and categories adopted for the data in the current study (see Chapter 5 for details).

According to Haspelmath and Tadmor (2009), some semantic fields have a higher degree of "borrowability" than others. They observe that across very different languages, many

languages showed borrowing in the category of *religion and belief*. One explanation for this, in their view, is that these words were borrowed as part of the spread of mainstream religions. The semantic fields with the greatest volume of loanwords, though with fewer borrowing languages, are *clothing and grooming* and *the house*. Haspelmath and Tadmor (2009) suggest that the high proportion of loanwords from these categories is the result of colonialism and globalization. On the other hand, the semantic fields of *kinship*, *the body*, *spatial relations*, and *sense perception* have the lowest proportion of borrowings in their loanword typology database. Haspelmath and Tadmor (2009) point out that there is less of a need to borrow items in these categories because native words exist for such concepts. As McMahon (1994) notes, words for body parts and the weather are rarely borrowed. Most languages tend to follow similar borrowing patterns; for example, there are many words borrowed in the semantic fields of *technology* and *food* because speakers are similarly introduced to new concepts in these categories.

2.1.2 Types of Lexical Borrowing

It is common to divide borrowings into two broad types: *cultural borrowing* and *core borrowing*. Cultural borrowings are words used for new items or concepts that do not exist in the recipient language (Haspelmath, 2009; Haspelmath & Tadmor, 2009; Kachru, 1994; Myers-Scotton, 2002; Weinreich, 1968), and can be called *loanwords by necessity* (Haspelmath, 2009, p. 46). Loanwords that are used out of necessity can be accounted for by Kachru's (1994) deficit hypothesis, which assumes that borrowing fills lexical gaps in the recipient language. As Weinreich (1968, p. 57) observes, "using ready-made designations is more economical than describing things afresh." *Core borrowings* are defined by Myers–Scotton (2002, p. 239) as "words that more or less duplicate already existing words" in the recipient language. Our study

of MH loanwords used in websites in Arabic will refer to both cultural borrowings and core borrowings as defined in the literature.

2.2 Motivations for Lexical Borrowing

This section discusses speakers' motivations for borrowing lexical items from another language. There are a range of linguistic (structural) and social factors motivating lexical borrowing that vary in different language contact situations. Two reasons that are often mentioned in the literature are *need* and *prestige*. Borrowing out of need describes principally situations where equivalents of borrowed words do not exist (*lexical gaps*) in the recipient language, especially to convey new concepts (McMahon, 1994), as discussed above. For example, with the rise of new technological innovations, PA may have lexical gaps which motivates borrowing words from Hebrew (Henkin, 2013). Moreover, as Poplack, Sankoff and Miller (1988) mention, borrowing is not limited to the naming of new concepts and can also be used to refer to existing concepts in a new way (semantic expansion). Borrowing may also occur to what Haspelmath (2009) defines *therapeutic reasons,* which are also connected to borrowing out of need. Haspelmath (2009) proposes two types of therapeutic reasons: borrowing to avoid taboo words and borrowing to avoid homonymy. In some cultures, using a loanword makes it possible to avoid using a term that is considered too negative in the recipient language: Winford (2003, p. 41) cites the example of Nguni speakers who adopt new words and sounds (clicks) from Khoisan languages to be able to comply with certain social conventions of respect. Borrowing due to homonymy avoidance refers to cases in which a loanword substitutes a word in the recipient that is phonologically and/or orthographically like another word (cf. Rédei 1970, cited in Haspelmath, 2009, p. 50). For example, in the history of English, vowel changes led to the homonymy of Old English *brǽde* ('roast meat') and *bread* ('morsel', 'bread'); homonymy

may have caused the replacement of *brǽde* with the French loanword *roast* (< Old French *rost*) (cf. Burnley, 1992, cited in Haspelmath, 2009, p. 50). The existence of lexical gaps, the necessity of referring to existing concepts in a new way, the desire to avoid taboo words, and the desire to avoid ambiguity driven by homonymy, are all examples of borrowing because of *need*.

On the other hand, borrowing because of *prestige* describes situations in which speakers borrow words from another language, even though they have equivalents in their native language, to gain social capital because the source language is perceived as more powerful or influential in some way. According to McMahon (1994), in language contact situations, the language spoken by more "powerful" speakers (e.g., economically, politically, etc.) is often considered the more prestigious language; speakers of the "less prestigious" language typically borrow from the more prestigious language. In addition, as McMahon (1994, p. 202) points out, borrowing "will be concentrated in the semantic fields where the more prestigious speakers wield the greatest influence." Haspelmath (2009) adds that "the way we talk (or write) is not only determined by the ideas we want to get across, but also by the impression we want to convey on others, and by the kind of social identity that we want to be associated with" (p. 48). Therefore, speakers may choose to use loanwords that have equivalents in their native language to signal their own social status. As alluded to above, and as Carling, Cronhamn, Farren, Aliyev and Frid (2019) remind us, the *need* for borrowing a word in a language represents an *internal* (or structural) motivation, while borrowing a word from a more prestigious language is an *external* motivation.

The degree of borrowing in any contact situation also depends on demographic factors, specifically on the proportion of bilingual speakers who have knowledge of both languages. According to McMahon (1994), borrowing is more common when there are greater

concentrations of bilingual speakers: "larger numbers of more actively bilingual speakers indicate closer contact between their languages" (1994, pp. 200-201).

In situations of bilingualism, the reasons for borrowing may be related to the intensity of contact, cultural pressure, and language attitudes (Winford, 2003). Winford (2003) explains that the intensity of contact refers to factors such as the length of the contact period, the degree of bilingualism, demography, and the social-political relationships between the speakers of the languages in contact. Cultural pressure includes the social reasons that motivate the borrowing of foreign elements into a group's native language to benefit social development, work, and education. Finally, speakers' attitudes toward the languages in contact can also influence the degree of borrowing. For example, borrowing is less likely to happen when speakers have a negative attitude toward the other (*source*) language.

To summarize, the factors that affect borrowing and that will help in the examination of Hebrew loanwords (HLs) in this study belong to the broad motivations often cited in the literature on language contact: *need* and *prestige*. The category of *need* includes filling lexical gaps, avoiding homonymy, avoiding taboo, and referring to existing concepts in a new way. The category of *prestige* refers to the perception that one language in a contact situation is more powerful or desirable; borrowing from that language can be used to symbolize modernism or to convey social standing. The degree of borrowing is influenced by three main factors: intensity of contact, cultural pressure, and language attitudes. Intensity of contact includes such factors as the length of the contact period and the degree of bilingualism. Cultural pressure refers to the social reasons that motivate the borrowing of elements from another language into a group's native language, e.g., to facilitate education. By *language attitudes* we mean the attitudes of speakers towards the "other" language. Understanding the motivations for borrowing will help explain, at

least in part, why certain HLs appear in digital texts written in Arabic in Israel and in WG, as we will see in Chapter 5.

2.3 Adaptation of Loanwords

Loanwords can undergo either an *adaptation* or an *adoption* process in the recipient language. The *adaptation* process, or integration process, refers to the changes that loanwords undergo to fit into the linguistic patterns of the recipient language (Haspelmath, 2009; McMahon, 1994). On the other hand, *adoption*, also known as importation, occurs when a word is borrowed with all the "features" (meaning, form and pronunciation) that it has in the source language (McMahon, 1994, p. 204). Of course, as Haspelmath (2009) adds, any structural borrowing from a source language will be preceded by the adoption of lexical items. Guilbert (1975, cited in McMahon, 1994) observes that in the first step of adoption, loanwords are treated as foreign words and, when written, are "normally italicised or enclosed in quotes in a text, and generally translated" (p. 209). Guilbert's observation is worth keeping in mind since this dissertation is about MH loanwords in written PA.

In general, loanwords can display degrees of adaptation to conform to the linguistic patterns of the recipient language; loanwords can be partially or fully adapted (cf. Haugen, 1950). After reviewing the factors that can influence adaptation (2.3.1), we discuss briefly phonological adaptation (2.3.2), morphological adaptation (2.3.3), and semantic adaptation (2.3.4).

2.3.1 Degrees of Adaptation

The degree of adaptation can be influenced both by linguistic and non-linguistic factors. Linguistic factors involve whether the loanword fits in the phonological and morphological patterns of the recipient language, as will be discussed below. Non-linguistic factors include the

following: the length of time that loanwords exist in the recipient language (Haspelmath, 2009; Poplack, et al., 1988); the frequency of use of borrowed lexical items (Hafez, 1996; Poplack, et al., 1988); familiarity with the source language (Haspelmath, 2009); and the speakers' attitudes, positive or negative, toward the source language (Hafez, 1996; Haspelmath, 2009). As Matras and Adamou (2023) observe, frequency of usage of a borrowed form in the recipient language is often cited in language contact work as an important factor that leads to the "entrenchment" of loanwords in the recipient language.

2.3.2 Phonological Adaptation in Loanwords

Loanwords may undergo phonological changes to conform to the phonological patterns of the recipient language. Campbell (1998) identifies two phonological processes that loanwords can undergo in the recipient language: (i) phoneme substitution or adaptation and (ii) accommodation. In phoneme substitution, a sound in a loanword that does not exist in the recipient language is replaced by the nearest phonetic equivalent in the recipient language. In accommodation, loanwords are modified to suit the phonological system (i.e., phonotactics) of the recipient language through deletion, addition, or a "recombination" of sounds (p. 61). Al-Qinai (2000) describes the phonological adaptation that loanwords in modern standard Arabic (MSA) undergo and proposes a more detailed classification. Using examples of loanwords from a variety of languages (e.g., Persian, Latin, Greek, Turkish, Hebrew, Italian, Syriac, and English), Al-Qinai identifies five types of phonological changes that words borrowed in Arabic can undergo: (1) substitution of segments that exist in the Arabic phonological system (*banadora* from Italian *pomodoro* 'tomato'); (2) substitution of unfamiliar segments (*ʾarshīf* from French *archives* 'archives'); (3) addition of segments and features (*ʾistād* from French *stade* 'stadium'); (4) deletion of segments (*baṭrīq* from Greek *patrikios* 'penguin'); and (5) stress shift (*nāylṓn*

*fr*om English ‘nýlon’). Al-Qinai (2000) further notes that while many words appear to undergo change to adapt to Arabic phonological rules, others appear to change without a clear structural motivation, perhaps just to “give a flavour of Arabic sounds” (p. 23).

2.3.3 Morphological Adaptation in Loanwords

Loanwords are often adapted to the morphology of the recipient language. As Winford (2003) explains, when compared to syntactic adaptation, morphological adaptation presents challenges; it is far more straightforward for a language to insert a loanword within its syntactic structure. Morphological adaptation proves particularly difficult when the recipient language has a complex inflectional system that marks case, number, gender, etc. (see also Matras 2009). Nonetheless, as Winford (2003) adds, loanwords often undergo nativization and “take the bound morphology and other properties appropriate to the class they are assigned to” (p. 48).

The adaptation of loanwords into the recipient language’s morphological system can also create new lexical entries through derivational processes. The only derivational process that is relevant to the collected data for this study is *root extraction*. The process of root extraction is a gradual process that allows the derivation of nouns, adjectives or verbs from borrowed foreign words (see more details in Chapter 3). For example, to form a verb from a loanword in MH, a three- or four-consonant root must first be derived and before being embedded into one of the MH templates. To illustrate, MH borrowed the noun *faks* from English ‘fax.’ MH then derived a three-consonant root *f-k-s* from it, reduplicated the final consonant, to produce *f-k-s-s,* and inserted the new quadrilateral root into an inflectional past template *CiC(C)eC* [6] to form *fikses* ‘fax-3SG.M.PST’ (for more examples, see Matras, 2009, p. 178).

[6] In MH, the template *CiC(C)eC* is typically used to form loan verbs (Matras, 2009).

2.3.4 Semantic Adaptation in Loanwords

In most cases, loanwords are borrowed with the meaning they have in the source language (Winter-Froemel, 2013). However, at times loanwords may also undergo certain semantic modifications (adaptation). Semantic change typically involves a partial change in meaning and usage, although a full change is possible over a significant period of time (see Akidah, 2013). In terms of partial change, scholars cite instances of semantic extension and semantic narrowing.

Semantic change mechanisms include extension and narrowing. In semantic extension "the range of meanings of a word increases so that the word can be used in more contexts than were appropriate for it before the change" (Campbell, 1998, p. 256). For example, in English, the word "dog" originally meant 'a (specific) powerful breed of dog', then the meaning extended to mean all breeds of dogs (Campbell, 1998). An example from Arabic is the word *tanakah* "tin can," which means a tin can and also means a can of any size which is not made from tin (Bader, 1990).

The opposite mechanism to semantic extension is semantic narrowing. In semantic narrowing "the range of meanings is decreased so that the word can only be used appropriately in fewer contexts than it could before the change" (Campbell, 1998, p. 257). For example, the English word "meat" first meant "food", then the meaning narrowed to mean only "animal flesh" (Campbell, 1998). In Jordanian Arabic, we can cite the word *būtīk* from French 'boutique,' which means 'a small shop selling specialized products or services, e.g., clothing,' but in Jordanian Arabic, it refers only to 'a small clothing retailer' (for more examples, see Bader, 1990, p. 40). In other words, the recipient language may select only one meaning from the source language.

2.4 Conclusion

This chapter presented the key terminology and principal approaches used to study loanwords. We considered the nature of contact between languages and how the degree of contact between languages influences the borrowing of lexical items. Contact between languages results in the transfer of lexical items and patterns from one language system to another. When these lexical items become part of the recipient language, they may undergo phonological, morphological and/or semantic changes. In this chapter we also reviewed the linguistic and non-linguistic motivations behind the use of loanwords; these factors will be considered again when examining the motivation behind the borrowing of HLs in written PA (Chapter 5).

Chapter 3

Linguistic Aspects of Arabic and Hebrew

This chapter presents several linguistic aspects of Arabic and Modern Hebrew (MH), particularly aspects that are important for understanding how Hebrew words are adapted into Arabic. Section 3.1 provides a brief overview of both languages. Section 3.2 introduces key facets of Arabic and MH phonology: the phonemic inventory, syllable structure and stress. Section 3.3 describes morphological aspects of Arabic and MH: gender and number, derivation and clitics. Section 3.4 describes some aspects of orthography and spelling in Arabic and MH. These linguistic elements serve as necessary background information for the data analysis in Chapter 5.

3.1 Arabic and Hebrew in Israel

3.1.1 Arabic Use in Israel

Arabic is a typical case of 'diglossia' (Albirini, 2016; Ferguson, 1959) in which different language varieties are used within the same speech community for different sets of social functions (Saiegh-Haddad & Henkin-Roitfarb, 2014). In Israel, as well as in all other Arabic-speaking countries, there are two varieties of Arabic that serve two different spheres of social functions. The first is the standard codified variety, called Modern Standard Arabic (MSA, sometimes abbreviated StA), a rather uniform variety that is used across Arabic-speaking regions for formal speech and for conventional writing (but not for writing on social media). The second is Spoken Arabic (sometimes abbreviated SpA, also known as Colloquial Arabic, an umbrella term used to refer to all spoken varieties) that is an exclusively spoken variety (except for its recent use in writing on social media), used by all speakers, young and old, and more or less educated, for everyday speech. In Israel, the spoken variety used by the Palestinian Arab citizens

is Palestinian Arabic (PA). In a diglossia, each variety is used for distinct functions. MSA is used for formal functions, such as writing for the purpose of literature, education and print media, while regional spoken Arabic varieties are used for daily spoken communication. MSA is the prestige or *high* variety and it coexists with regional varieties, or *low* varieties (to use Ferguson's terms), such as Egyptian Arabic, Jordanian Arabic and PA. MSA is also referred to by some as Literary Arabic, and is a modern descendent of (yet distinct from) the Classical Arabic that is used in the Quran and old literary texts. MSA largely maintains the syntax of Classical Arabic but is continuously updated with respect to its vocabulary (Holes, 2004). Since Arab countries have many different dialects, MSA is a common medium of written communication in the Arab world and is used in the press, radio and television (Al-Ani, 1970).

According to Henkin-Roitfarb (2011), the diglossic situation of Arabic in Israel in some sense facilitates the penetration of Hebrew words into PA. Loanwords are able to enter PA through the spoken language "without it being perceived as a threat to 'Arabic,' namely Standard Arabic" (Henkin-Roitfarb, 2011, p. 96). Consequently, Hebrew loanwords are prominent in PA. Although, as Henkin (2013) observes, "Hebrew loanwords are far less common in written Arabic" (p. 158), they are nonetheless found in the language of "newspapers, especially in advertisements" (Henkin, 2013, p. 158) and on websites, as this study demonstrates.

3.1.2 Modern Hebrew Use in Israel

The terms Israeli Hebrew and Modern Hebrew (MH) both refer to the Hebrew language spoken in Israel today and is different from Biblical Hebrew or Mishnaic Hebrew that was spoken 1800 years ago (Bolozky, 1997; Wexler, 1990). MH is the dominant language of Israel: it is spoken by Jews (the majority are native speakers) and it is the second language of "Arabs, Druze, and Circassians in Israel" (Wexler, 1990, p. 2). As the dominant language of Israel, it is

used by traditional media, such as newspapers, radio and television (Coffin-Amir & Bolozky, 2005), and on websites.

Although there are some linguistic differences between different populations of MH speakers, such as pronunciation differences between Ashkenazi and Sephardic (Dekel, 2014), these varieties of MH are argued not to be so distinct as to be mutually unintelligible (Coffin-Amir & Bolozky, 2005; Weninger, 2011). Different varieties of MH can be spoken within the same geographical region. According to Henkin-Roitfarb (2011), because there are no regional varieties of MH, borrowing from MH to PA is a rather straightforward process.

As mentioned in Chapter 1, there are two "traditions" of pronunciation for MH: Ashkenazi and Mizrahi[7] (Bolozky, 1997). The Ashkenazi tradition refers to the Hebrew spoken by European Jews, while the Mizrahi pronunciation refers to the Hebrew of Jewish descendants primarily from Arabic-speaking countries, the Balkans, and parts of the Middle East (Coffin-Amir & Bolozky, 2005). Both Ashkenazi and Mizrahi pronunciations will be discussed in 3.2.2.1.

3.2 Phonological Aspects of Arabic and Hebrew

This section briefly describes the consonant and vowel inventories of Arabic and MH. Additionally, the section provides information about consonant clusters, syllable structures, and stress in Arabic and MH. When discussing Arabic, our point of departure is MSA because the focus of this study is on written forms that originate from spoken PA. We will also present relevant aspects of PA phonology that may help us to understand the adaptation of Hebrew loanwords (HLs).

[7] The term *Mizrahi* (which means 'Easterner' in Hebrew) replaced the term *Sephardi* (Coffin-Amir & Bolozky, 2005).

3.2.1 Arabic Phonological Description

3.2.1.1 Consonants and vowels in Arabic

MSA has a rather large consonantal system but a more limited vocalic system (Watson, 2007). MSA contains 28 consonant phonemes, listed in Table 3 below, using IPA. It is important to bear in mind that since MSA is not a spoken language, pronunciation varies according to dialects and regions (see Holes, 2004). The table below presents the consonants of MSA and takes into consideration multiple scholars' presentation of the consonant inventory (e.g., Habash, 2010; Ryding, 2005; Watson, 2007). For the Arabic script corresponding to each consonant in Table 3, see Appendix A.

Table 3

MSA Consonants

		Labial	Labio-dental	Inter-dental	Dental/ Alveolar	Alveo-palatal	Palatal	Velar	Uvular	Pharyn-geal	Glottal
Stop	Voiceless				t (tˤ)[8]			k	q		ʔ
	Voiced	b			d (dˤ)						
Fricative	Voiceless		f	θ	s (sˤ)	ʃ		x		ħ	h
	Voiced			ð (ðˤ)	z	ʒ		ɣ		ʕ	
Nasal		m			n						
Lateral					l						
Trill/Flap					r/ɾ						
Glide		w					j				

MSA contains three bilabial sounds /b, m, w/, one labio-dental sound /f/, two interdental sounds /θ , ð/, seven dental or alveolar sounds /t, d, s, z, n, l, r/, two alveopalatal sounds /ʃ, ʒ /, one palatal sound /j/, three velar sounds /k, x , ɣ /, one uvular sound /q/, two pharyngeal sounds /ħ, ʕ/ (discussed in more detail below) and two glottal sounds /ʔ , h/ (further discussed below).

[8] The consonants in parentheses are pharyngealized.

The table above includes a trilled /r/, but some scholars refer to the r-sound as a flap. Of these consonants, there are two semi-consonants, /w/ and /j/. Arabic pharyngeals are both fricatives; voiceless /ħ/ <ح> whose non-pharyngeal counterpart is the glottal /h/ <ه>; and voiced fricative pharyngeal /ʕ/ <ع> whose non-pharyngeal counterpart is the glottal stop /ʔ/ <ء>. Arabic has four pharyngealized consonants /sˤ, tˤ, dˤ, ðˤ/ (also called velarized or emphatic) which have four plain (non-pharyngealized) counterparts: the coronals /s, t, d, ð/, respectively. The coronals' primary articulation involves the tongue blade and the dental-alveolar location, while the articulation of the pharyngealized counterparts involves a secondary articulation in which another feature is added to the primary articulation. The pharyngealized sounds involve "raising the back part of the tongue toward the soft palate and the constriction of the top of the pharynx caused by the retraction of the tongue root" (Holes, 2004, p. 57).

PA includes several sub-dialects, such as urban, rural and Bedouin dialects, that differ in terms of phonology from MSA (see Jarrar et al., 2014; Mahajna, 2019). For example, the phoneme /q/ (ق q in MSA) is pronounced as /'/ in urban dialects, /k/ in rural dialects, and /g/ in Bedouin dialects, therefore the word for 'heart' is pronounced as /qalb/, /'alb/, /kalb/ and /galb/ respectively (Jarrar et al., 2014). In addition, spoken PA also uses the consonants [tʃ], [v] and [g], which do not exist in MSA (Mahajna, 2019), and consequently do not have a corresponding written representation (grapheme). It bears remembering that, unlike MSA, PA does not have standard orthography for spelling (Jarrar et al., 2014).

The glottal stop phoneme that is found in many words in MSA is not pronounced in PA. For example, the words رأس /raʔs/ 'head' and بئر /biʔr/ 'well' in MSA are pronounced /ra:s/ and /bi:r/ respectively in PA (Jarrar et al., 2014).

Initial consonant clusters are not allowed in MSA but there are consonant clusters that occur in the middle or at the end of the word (Al-Ani, 1970). Consonant clusters in initial position may be allowed in regional varieties. Indeed, as Saiegh-Haddad and Henkin-Roitfarb (2014) explain, PA permits two-consonant clusters in word-initial position, as in the examples /tra:b/ ‘soil’ and /kla:b/ ‘dogs.’

The MSA vowel system consists of three short vowels /a/, /i/ and /u/, their corresponding long vowels, /a:/, /i:/ and /u:/, and two diphthongs [aw] and [aj]. The short vowels are indicated with diacritics and are not usually represented in written language. The table below presents the MSA vowels.

Table 4

MSA Vowels

	Front	Central	Back
High	i i:		u u:
Mid			
Low		a a:	

PA has the same short and long vowels as MSA but the MSA diphthongs [aj] and [aw] are monophthongized in spoken PA, and realized as [e:] and [o:], e.g., the word for ‘house’, [bajt], is realized as [be:t] in PA (Jarrar, et al., 2014; Mahajna, 2019; Saiegh-Haddad & Henkin-Roitfarb, 2014).

3.2.1.2 Syllable structure and stress in Arabic

Syllables in MSA start with a single consonant (Holes, 2004). That is, no word or syllable in MSA starts with a vowel (Ryding, 2005). Also, as mentioned above, no word or syllable begins with consonant clusters in MSA (Ryding, 2005). There are five basic types of syllable

structures[9] in MSA: *CV*, *CVC*, *CV:*, *CV:C* and *CVCC* (Al-Ani,1970; Ryding, 2005). A syllable is considered light (or weak) if the rime (or rhyme) is a short vowel, i.e., *CV* (e.g.-*ma*, -*bi*); a syllable is considered heavy (strong) if the rime contains a long vowel or a short vowel followed by a consonant, i.e., *CV:* or *CVC* (e,g., -*fā*, -*ras*); if a syllable contains a long vowel followed by a consonant, or a short vowel followed by two consonants, it is considered super-heavy (super-strong), i.e., *CV:C* or *CVCC* (e.g., -*rīm*, -*sart)* (Al-Ani, 1970; Ryding, 2005). Light and heavy syllables can occur anywhere in the word, while super-heavy syllables are only found word-finally or in isolation (Al-Ani, 1970).

Main stress in MSA is predictable (although it may vary depending on the dialect) and depends on the number and types of syllables in a word (Holes, 2004; Saiegh-Haddad, 2017; Saiegh-Haddad & Henkin-Roitfarb, 2014), and on whether the speaker adopts full or pause pronunciation. Full pronunciation entails pronouncing word-final short vowels; pause pronunciation does not include uttering final short vowels. In reading MSA out loud and in full pronunciation, there are three stress rules as follows: if the word consists of two syllables, the stress[10] is on the first syllable whether it is heavy or light (e.g., ***zā**rū* 'they visited'); stress is on the penult (second syllable from the end of the word) if that syllable is heavy, i.e., *CVC* or *CV:* (e.g., *yak**tub**na* 'they (F.) write', *ju**hū**dun* 'efforts' (nominative)); and if the penult is a weak syllable (*CV*), then the stress falls back to the antepenult or third-last syllable (e.g, ***kul**lunā* 'all of us'). Ryding (2005) adds that in pause form, stress may fall on the final syllable if it is super-strong (*CVCC* or *CV:C*) (e.g., *ḥā**walt*** 'I tried,' *wa**zīr*** 'minister').

[9] C stands for a consonant, V for a short vowel, and V: for a long vowel.
[10] Stress is indicated in boldface.

3.2.2 Modern Hebrew Phonological Description

3.2.2.1 Consonants and vowels in MH

The phonological inventory of MH phonemes is presented in Tables 5 and 6 (again, in IPA) showing consonants and vowels respectively.

Table 5

MH Consonants[11]

		Labial	Alveolar	Alveopalatal	Palatal	Velar/ Uvular	Pharyngeal	Glottal
Stop	Voiceless	p	t			k		ʔ
	Voiced	b	d			g		
Fricative	Voiceless	f	s			x	ħ	h
	Voiced	v	z	(ʒ)[12]		ʁ	ʕ	
Affricate	Voiceless		ts	(tʃ)				
	Voiced			(dʒ)				
Nasal		m	n					
Lateral			l					
Glide					j	w		

Table 6

MH Vowels[13]

	Front	Central	Back
High	i		u
Mid	e		o
Low		a	

[11] The table is adapted from Dekel (2014 p. 8).
[12] The consonants in brackets occur only in loanwords.
[13] The table is adapted from Dekel (2014 p. 10).

MH contains 22 consonants. Unlike MSA which has several pharyngeal and glottal consonants, native speakers of Hebrew in Israel do not typically use such consonants (Dekel, 2014). In general, the pharyngeal fricatives /ħ/ and /ʕ/ characterize the Mizrahi pronunciation; the glottal stop /ʔ/ and the glottal fricative /h/ are not realized in everyday speech (Klein, 2020).

As mentioned earlier, there are two varieties of MH pronunciation, namely the Ashkenazi pronunciation, which refers to the common Israeli pronunciation, and Mizrahi pronunciation (Asherov & Cohen, 2019; Coffin-Amir & Bolozky, 2005). The Mizrahi pronunciation most closely matches written MH, and preserves the pharyngeal phonemes /ħ/ and /ʕ/; some (mostly) older speakers distinguish between /k/ and /q/, which are no longer distinct in MH. In addition, the Mizrahi pronunciation rarely preserves the historical difference between /t/ and /tˤ/, which have merged (into /t/) in MH (Coffin-Amir & Bolozky, 2005). On the other hand, the sounds /ħ/, /ʕ/ and /tˤ/ are pronounced /x/, /ʔ/ and /t/, respectively, in the Ashkenazi (dominant) pronunciation of MH (Henkin-Roitfarb, 2011; Henkin, 2013).

In MH there are three alveopalatal phonemes that are restricted to loanwords. They are the voiced fricative <'ז> /ʒ/, as in /beʒ/ 'beige,' and two affricates: <'צ> /tʃ/ (voiceless), as in /ritʃratʃ/ 'zipper,' and <'ג> /dʒ/ (voiced), as in /dʒins/ 'jeans' (Klein, 2020).

MH allows word-initial consonant clusters, e.g., *pri* 'fruit' and *stav* 'fall' (Klien, 2020), unlike MSA. In addition, MH permits up to three consecutive consonants within one syllable, provided that they appear on word edges. Three-consonant clusters can only appear word-initially (e.g., *shprits* 'splash') or word-finally (e.g., *shrimps* 'shrimps'), whereas, from a syllabification perspective, only two-consonant clusters are allowed word-medially (Dekel, 2014). In other words, although three- and four-consonant clusters can appear word-internally

(e.g., *ishprits* ‘splash’), their component consonants belong to onsets and codas of different syllables (Dekel, 2014).

MH has a five-vowel system /a, e, i, o, u/; in writing, vowels are indicated by marking dots or short lines above, below, or within the consonant (Coffin-Amir & Bolozky, 2005). MH does not have phonemic vowel length (Coffin-Amir & Bolozky, 2005), although a few scholars have noted that long vowels may be heard in MH rapid speech as a result of the deletion of an intervocalic glottal or pharyngeal consonant (see Dekel, 2014, p. 10, citing Rosén, 1962 and Weninger, 2011). In addition, although some scholars claim that there are three diphthongs in MH (e.g., Klien, 2020), most include only two diphthongs, the diphthongs [aj] and [ej] (see Dekel, 2014) for MH.

3.2.2.2 Syllable structure and stress in MH

Most Hebrew syllables start with a consonant, and scholars identify the following syllable structures: *CV*, *CVC*, *CV*, *CVCC*, *CCV* and *CV* (e.g., Coffin-Amir & Bolozky, 2005). Although most MH syllables contain an onset consonant, there are syllables with an initial vowel, having the structure *V* or *VC*, such as in *u* ‘he’ and *im* ‘if, with’ respectively (Dekel, 2014). The nucleus of a MH syllable typically consists of a vowel or diphthong (see also Dekel, 2014). There are two types of syllables in MH: open and closed syllables. An open syllable ends with a vowel; a closed syllable ends with one or more consonants (Coffin-Amir & Bolozky, 2005).

Generally, MH stress falls on the final syllable of the word; this stress in MH is called <מלרע> *milraʿ* (Coffin-Amir & Bolozky, 2005). Consequently, final stress is the dominant stress pattern in MH and is mostly found in native Hebrew nouns, e.g., *melafef**on*** ‘cucumber,’ and in some loanwords, e.g., *sal**at*** ‘salad’ (Bat-El, Cohen & Silber-Varod, 2019). When a suffix (e.g.,

plural) is added to a word, stress typically shifts to the suffix, e.g., ***shir*** 'poem' and plural *shir**im*** 'poems' (Coffin-Amir & Bolozky, 2005). However, when a suffix is added to borrowed words and acronyms, the (base word) stress remains unchanged, e.g., the 'o' of the plural ***job**im* 'jobs' (from English 'job') remains stressed, in keeping with singular ***job;*** the plural *ma**kam**im* of the singular acronym *ma**kam*** 'radar' (Coffin-Amir & Bolozky, 2005) display the same stressed syllable.

In some cases, stress falls on the penultimate syllable, referred to in Hebrew as <מלעל> *milʿel.* The largest group of words that have penultimate stress are called *segolate* nouns due to the prominence of the *segol* (/e/) vowel as part of their pattern ***Ce**CeC,* e,g., ***ge**ver* 'man' and ***de**rekh* 'way' (Coffin-Amir & Bolozky, 2005). Penultimate stress is also found in some loanwords, e.g., *avo**ka**do* 'avocado' (Bat-El et al., 2019).

Although final stress is the dominant pattern in MH, there are also cases of antepenultimate stress, mostly found in loanwords, e.g., ***te**lefon* 'phone' and ***sho**kolad* 'chocolate,' but also found in a few words of Hebrew origins, such as in ***ḥa**nukah* 'Hanukkah.' Optional stress shift is also observed in some suffixed words, e.g., ***am**bulans–**am**bulansim* ~ *ambu**lan**sim* 'ambulance(s)'). In some suffixed words, such as ***te**lefon–**te**lefonim* ~ *tele**fo**nim* 'phone(s)', there is a semantic distinction between the stress-preserving form ***te**lefonim* 'phone (the apparatus)' and the stress shifting form *tele**fo**nim* 'phone calls' (Bat-El et al., 2019).

We note two final aspects related to stress in MH. First, a stressed vowel is usually pronounced as a longer vowel (Coffin-Amir & Bolozky, 2005). Second, a few words in Hebrew are differentiated only by stress, e.g., ***ra**tsu* 'they ran' vs. *rat**su*** 'they wanted' (Bolozky, 2000).

3.3 Morphological Aspects of Arabic and Hebrew

In discussing the morphological aspects of Arabic and Hebrew, we focus on those items that are most relevant for the analysis of our data, rather than presenting an exhaustive treatment of morphology. First, grammatical gender and number in Arabic and MH are briefly outlined. Then we provide information about clitics and the derivational process of root extraction in Arabic and MH. Again, attention is paid primarily to MSA because the study data is in written form, but some morphological differences between MSA and PA will be considered.

3.3.1 Aspects of Arabic Morphology

3.3.1.1 Grammatical gender and number in Arabic

Arabic words are divided into three categories: nouns (including adjectives), verbs, and particles (including prepositions and conjunctions) (Saiegh-Haddad & Henkin-Roitfarb, 2014). Nouns and verbs inflect for masculine or feminine gender, and for singular, dual, or plural number. In MSA, the masculine gender is unmarked, while the feminine gender is typically marked by /-t/ (called *tā' marbūṭah*)[14]. Usually, *tā' marbūṭah* is pronounced as [-a] or [-ah] in pause form (e.g., *jāmiʿa* 'university') but it is pronounced as [-t] if the first word of the construct state ends with *tā' marbūṭah* (e.g., *jāmiʿat bayrūt* 'the university of Beirut') (Ryding, 2005).

In MSA, nouns can be singular, dual or plural, and adjectives must agree with nouns in their gender and number morphology (Watson, 2007). The use of the dual is obligatory to describe units of two, for example *kitābān* 'two books.' The dual suffix for masculine nouns and adjectives in Arabic is /-a:n/ for the nominative case (for example, *waladān* 'two boys'), and /-ajn/ for the genitive and accusative cases (for example, *waladayn* 'two boys'). Furthermore,

[14] *tā' marbūṭah* 'bound t' is a variant of the letter -t <ت> which is called *tā' maftūḥa* 'opened t' (see Saiegh-Haddad & Henkin-Roitfarb, 2014, p. 24).

feminine nouns and adjectives that end with the gender marker /-t/ take the same dual suffixes, /-a:n/ or /-ajn/, for example, *mu'allimatān* 'two teachers' or *mu'allimatayn* 'two teachers.'

There are two types of plural formation for nominal units in MSA: the sound plural and the broken plural. The sound plural is formed by the addition of a masculine or feminine plural suffix. For masculine nouns, the suffixes are /-u:n/ for the nominative case (e.g., *mu'allimūn* 'teachers') and /-i:n/ for the accusative and genitive cases (e.g., *mu'allimīn*); for feminine nouns, the suffix is /-a:t/[15] (e.g., *mu'allimāt*). Note that the sound plural used with an animate referent follows biological gender; if the referent is inanimate, then it inflects for the feminine plural suffix (Dekel & Brosh, 2012).

The second type of plural is the broken plural. The broken plural is formed by "the derivation of a plural form out of a singular form through a pattern change[16]. This change can be either a vowel change or an addition of a glide to the whole pattern" (Dekel & Brosh, 2012 p. 7). For example, the broken plural *mulūk* 'kings' is derived from the singular stem *malik* 'king.'

Generally, in loanwords in Arabic the feminine sound plural is considered the default; the feminine sound plural is also the first to appear in acquisition (Saiegh-Haddad, Hadieh & Ravid, 2012). Laks (2014) observes, however, that although the feminine plural suffix /-a:t/ is the default for borrowed words (e.g., *faksāt* from *faks* 'fax'), there are some cases in which a broken plural template is selected. In particular, Laks (2014) discusses the use of the broken plural for masculine animate nouns (human referents), such as the plural *dakātra* from *daktūr* 'doctor,' but also observes that some loanwords (inanimate) may display either the sound plural or broken plural. For example, the loanword from MH *ramzūr* 'traffic light' can take the sound plural *-āt*,

[15] Feminine plural suffixes are /-a:tu/ (for nominative case) and /-a:ti/ (for accusative and genitive cases). Recall that Arabic texts are not vowelized. The feminine plural suffix appears as /-a:t/ without the short vowels /u/ and /i/.
[16] And root extraction from the singular noun (see Glanville, 2018).

ramzūrāt 'traffic lights,' or the broken plural *ramāzīr*, following the template *CaCa:Ci:C*. We agree with Hafez (1996) who considers the use of the broken plural in loanwords in Arabic potentially a major morphological change, as discussed ahead in Chapter 5.

It is worth mentioning that most gender and number markers (and tense markers on verbs) used in MSA are not found in spoken Arabic dialects (Saiegh-Haddad, 2003), including PA. For example, nominal case and verbal mood are used in MSA but not in PA; and PA "collapses" the feminine and masculine plurals and duals in verbs and most nouns (Jarrar et al., 2014, p. 19). Some morphemes are different in PA with respect to MSA, e.g., the feminine singular suffix morpheme (*tā' marbūṭah*), is pronounced [-at] or [-a] (the latter in utterance-final position), whereas PA uses the allomorphs [-a] and [-e] for the feminine singular marker (Jarrar et al. 2014).

3.3.1.2 Clitics in Arabic

The morphological structure of Arabic includes clitics. As Alotaiby, Foda and Alkharashi (2010) explain, a clitic is "a linguistic unit that is pronounced and written like an affix" but is "grammatically independent" (p. 596). Clitics are also phonologically dependent on other words (Saiegh-Haddad and Henkin-Roitfarb, 2014) that serve as the clitic's "host". In MSA, clitics may be proclitics or enclitics. Proclitics precede the host word like a prefix, for example, the conjunction *wa-* 'and,' the preposition *li-* 'for' and the definite article *ʾal-* 'the.' Enclitics follow the host word like a suffix, such as *-hum* 'their' (POSSESSIVE PRONOUN 3PL.M) and *-nā* 'our' (POSSESSIVE PRONOUN 1PL) (e.g., Alotaiby et al., 2010). Multiple clitics can appear in the same word, e.g., *bi-bayt-i-hi* 'in his house' (Saiegh-Haddad & Henkin-Roitfarb, 2014), which can be broken down as follows: *in*-PROCLITIC + *house* + *i*-CASE MARKER + *hi*-POSSESSIVE ENCLITIC 3SG.M.

The clitics discussed above are found both in MSA and in PA, although in some cases realized differently in PA (see chapter 5). There are also clitics that exist in PA but not in MSA. One such example is the negation "circumclitic" (i.e., in the fashion of a circumfix: a form that 'surrounds' the morpheme to which it is attached), which has the form /ma+ +ʃ/; thus, 'he did not write' is realized *lam ʾaktub* (NEGATIVE PARTICLE write.3SG) in MSA, but makatabʃ (/ma+katab+ʃ/) in PA (for more examples, see Jarrar, et al., 2014).

3.3.1.3 Derivation in Arabic: Root extraction

We only consider the derivational process of root extraction in Arabic because this is the only derivational process relevant for the study of loanwords in our corpora. In Arabic, the root is a semantic abstraction usually consisting of a sequence of three or four consonants from which words are derived through the superimposition of templatic patterns (Holes, 2004). For example, the root *k-t-b* has the broad lexical meaning of 'writing' from which the words for 'book,' 'written,' 'office,' and 'writer' are (respectively) derived: *kitāb*, *maktūb*, *maktab*, and *kātib*.

A prototypical example of root extraction in loanwords in Arabic is provided by Saiegh-Haddad and Henkin-Roitfarb (2014). The English loanword *talifon* 'telephone' in Arabic gave rise to a new quadrilateral root *t-l-f-n* which was combined with the quadrilateral templatic pattern *CaCCaC* to form the verb *talfan* 'to phone.'

3.3.2 MH Morphological Description

3.3.2.1 Grammatical gender and number in MH

Hebrew nouns, adjectives and verbs are marked for gender (masculine or feminine) and number (for details, see Coffin-Amir & Bolozky, 2005). Gender suffixation is consistent in adjectives, but less so in nouns. Adjectives take the gender and number of the noun they modify (Coffin-Amir & Bolozky, 2005). Usually, masculine singular forms are unmarked, such as *yeled*

'boy.' Many feminine singular forms can take the feminine singular suffix <-ָה> *-ah* (pronounced /a/, as the final *h* is preceded by *a*), e.g., *yaldah* 'girl', or <ת-> *-t* provided that the *–t* is part of a suffix (*-it, -ut, -et, -at)* rather than a root consonant, e.g., *tukhnit* 'plan,' *tarbut* 'culture,' *kalevet* 'rabies,' and *shapaʿat* 'flu' (Coffin-Amir & Bolozky, 2005; Dekel, 2014). There is a small number of nouns in MH that are feminine but do not take the suffixes *-t* or *–ah,* such as *shemesh* 'sun' and *derekh* 'road.'

In MH, number is marked on nominals (including adjectives) with the plural suffixes *-im* or *-ot* and, in a limited number of cases, with the dual suffix *-ayim* (Melnik, 2020). In general, masculine nouns are pluralized with the masculine plural suffix *–im* and feminine nouns are pluralized with the feminine plural suffix *–ot*, but there are some masculine nouns that take the feminine plural suffix and vice versa (Coffin-Amir & Bolozky, 2005; Dekel, 2014), which means that a plural suffix cannot be fully relied upon to signal gender (Coffin-Amir & Bolozky, 2005). Examples of nouns with gender-mismatched plural suffixes include the masculine noun *makom* 'place' which takes the feminine plural suffix *–ot, mekomot* 'places,' and the feminine noun *shana* 'year' whose plural *shanim* 'years' displays the masculine plural suffix *-im* (for further details, see Coffin-Amir & Bolozky, 2005; Dekel, 2014; Melnik, 2020).

The dual suffix is *–ayim,* regardless of gender, and is not obligatory in MH and is found mainly in time expressions, such as *yom-ayim* 'two days' and *shnat-ayim* 'two years,' and words referring to pairs of body parts, such as the word *yad-ayim* 'two hands' (Dekel, 2014). Since most nouns do have a form in *–ayim*, the concept of dual is typically expressed by the number

"two"[17] – masculine *shney* and feminine *shtey* in the construct state – which precedes the noun, e.g., *shney yeladim* 'two boys' and *shtey yiladot* 'two girls.'

Many MH acronyms are pronounced as a whole word and behave similarly to other nouns with respect to gender and number: they can take number suffixes and sometimes feminine gender suffixes, e.g., the singular masculine *mankal* 'CEO' is pluralized as *mankal-im* and the singular feminine *mankal-it* 'CEO' pluralized as *mankal-iy-ot* (Dekel, 2014). The collected data for the current study includes borrowed Hebrew acronyms that function as regular loanwords in PA, as will be discussed in Chapter 5.

3.3.2.2 Clitics in MH

Like MSA, MH includes clitics, but to a lesser degree. The definite article <-ה> *ha-* 'the' is attached to nouns (including acronyms) as a proclitic, as is the case in MSA. Also, prepositions in MH act as proclitics, such as *le-* 'to' in *le-bayet* 'to the house,' *le-* 'for' in *le-Sami* 'for Sami,' and *ba-* 'in' in *ba-bayet* 'in the house' (Kheir, 2019). Possessive markers in MH can also be enclitics, e.g., *sefr-i (*book+POSSESSIVE.1SG) 'my book.' However, unlike in MSA, in MH possession can also be expressed periphrastically (and frequently in spoken MH) via the free possessive morpheme (particle) *shel* 'of' attached to a pronoun (Coffin-Amir & Bolozky, 2005; Dekel, 2014), e.g., *ha-sefer sheli* (literally: the-book of me) 'my book.' Note that loanwords in MH cannot take a possessive pronoun suffix (Coffin-Amir & Bolozky, 2005).

3.3.2.3 Derivation in MH: Root extraction

As in MSA, many MH words are also formed by combining roots and patterns. As Dekel (2014) succinctly explains, the root in MH usually consists of three or four consonants (or

[17] In MH, the number for 'two' is *shnayim* (for masculine) or *shtayim* (for feminine), which become *shtey* or *shney* (respectively) before the noun they modify.

radicals), "that carries a general meaning" (p. 39). Root extraction is a common derivational process in MH, and is particularly found in loanwords in MH. Henkin-Roitfarb (2011) provides an instructive example: the PA noun *kīf*[18] 'fun' was borrowed into MH as *kef*; a new root *k-y-f* was extracted from the loanword and repurposed to form new words, e.g., the new verbs *le-kayef* 'to have fun' and *mitkayef li* 'I feel like,' and the new nouns *kiyuf-im* 'fun sessions' and *kayfan* 'one who has fun' (p. 73).

3.4 Some Notes on Orthography

The following brief comments on MSA and MH orthography are essential for describing the spelling of HLs, which we will be discussing in detail in Chapter 5.

3.4.1 MSA Orthography

MSA is written from right to left in a cursive style. As stated above, MSA has 28 consonants and six vowels (three short and three long). All the consonants are orthographically independent except for the glottal stop, *hamza*, which "is not orthographically an independent letter" (Holes, 2004, p. 90). The *hamza* is written on a so-called chair or seat (*kursiyy*), which means that the *hamza* is appended to another character. The relevant contexts for the use of *hamza* in our case are as follows: *hamza* is obligatorily appended to *alif* <أ> in word initial position, and must be added to the Arabic equivalents of *w* and *y* word internally. *Hamza* appears as a diacritic over *w* and *y*. In some cases, word medial or word final *hamza* can be written on the line < ء> (without a seat) (see Holes, 2004; Ryding, 2005). The spelling of *hamza* depends on the place of the *hamza* in the word and the contiguous vowel (Holes, 2004; Ryding, 2005). Note that in many contemporary Arabic dialects, the *hamza* has been lost in pronunciation; for example,

[18] "From Arab *kayf* (= state, condition, state of mind, pleasure, well-being), which derives from the interrogative pron. *kaifa*(=how?)" (Klien & Rabin, 1987, p. 276).

the word *suʔa:l* ‘question’ is pronounced as *suwa:l* in the Cairene dialect (Watson, 2007). The collected data for this study contains many examples of HLs that include *hamza.*

In MSA, the definite article *ʾal-* is a proclitic that marks the definiteness of the noun or the adjective. If the definite article is prefixed to a word beginning with one of the sun letters (t, θ, d, ð, r, z, s, ʃ, sˤ, dˤ, tˤ, ðˤ, l, n), the *l* of the definite article assimilates completely to the word initial sun letter in pronunciation, creating a lengthened consonant which is typically not represented in writing, e.g., the Arabic word for ‘the people’ is pronounced *ʾan-nās* but written *ʾal-nās.* In a vowelized written text the consonantal lengthening is represented by the diacritic *shadda.* However, if the definite article is prefixed to a word starting with one of the moon letters (ʔ, b, ʒ, ħ, x, ʕ, ɣ, f, q, k, m, h, w, j), no assimilation occurs, e.g., the Arabic word for ‘the boy’ is *ʾal-walad* both in pronunciation and in writing (for additional details, see Ryding, 2005). As we will see in Chapter 5, the Arabic definite article may be prefixed to HLs.

In written texts, there are a few additional letters that are not part of MSA script, such as <ڤ> for *v* and <پ> for *p*. These letters are borrowed from other languages to represent sounds that are not found in MSA (Habash, 2010, p. 11).

Diacritics in MSA include signs for the short vowels, *sukūn*, *shadda* and *tanwīn*. Diacritics for the short vowels are typically used in religious texts and in Arabic language textbooks (Habash, 2010), but do not normally appear in written texts. The following sequence of the consonant b followed by a short vowel serves as an illustrative example of the short vowel diacritics: بَ *ba,* بُ *bu,* بِ *bi*. The *sukūn* diacritic (بْ *b*) marks the absence of a short vowel, and the *shadda* diacritic (بّ), which usually combines with a short vowel, marks consonantal lengthening (doubling), as mentioned above (for examples, see Habash, 2010). Like the short vowels, both the *sukun* and *shadda* diacritics do not usually appear in written texts. The term

tanwīn signals indefiniteness on some nouns, and is also known as 'nunation.' In written MSA, *tanwīn* indicates the doubling of a final short vowel, which represents the addition of the indefinite marker /n/ (suffix) sound to the noun, a sound which itself is not written. There are three case-dependent *tanwīn* diacritics, -*an* (accusative), -*un* (nominative), and -*in* (genitive), as exemplified in the following examples: ولداً *walad-an* 'a boy', ولدٌ *walad-un* 'a boy,' and ولدٍ *walad-in* 'of a boy.' Note that the *tanwīn –an* often appears on *alif* at the end of the word, since *alif* acts as a seat for the diacritic; this *alif* tends to appear in written texts, even if unvowelized. A few instances of the *tanwīn -an* are found in HLs, as we will see in Chapter 5.

3.4.2 MH Orthography

MH is written from right to left in both cursive and print forms. It is worth noting that five consonants have display positional variation, depending on whether or not they appear word-finally. The written form for *kh*, *m*, *n*, *f*, and *ts* are written one way if in word-final position (the first symbol in the illustrative sequences), and another way if they appear elsewhere in the word (second symbol in each sequence): ך- כ *kh*, ם- מ *m*, ן- נ *n*, ף- פ *f*, ץ- צ *ts.* In MH, the sounds *sh* and *s* share the same symbol, <ש>, but can be distinguished by adding a diacritic: to indicate *sh,* a dot can be added to the upper right side of the symbol, <שׁ>, and to indicate *s*, a dot can be placed on the upper left side, <שׂ>. The distinction is not typically made in written MH, however.

MH has two main consonantal scripts: pointed and unpointed. Pointed orthography includes vowel diacritics (Klien, 2020), corresponding vowelized texts in Arabic. Unpointed orthography does not include vowel diacritics, but often uses the *matres lectionis* <י-> *y* and <ו-> *w* to represent respectively the vowels *i* and *o*/*u* (Coffin-Amir & Bolozky, 2005). Today, pointed orthography is found in Biblical texts, children's books and poetry (Klien, 2020), while unpointed orthography is found in most other written texts, including newspapers and websites.

MH includes a *shva* diacritic <ְ> which is placed under a letter to indicate either the absence of a vowel (called *shva naḥ*), similar to the use of *sukūn* in MSA, or to indicate the phoneme /e/ (called *shva naʿ*). In addition, MH includes a *dagesh* diacritic <ּ> which is represented by a dot placed within the symbol. There are two types of *dagesh* (*kal* and *ḥazak*) in MH that share the same diacritic sign but have different functions. The *dagesh kal* diacritic helps to distinguish between a stop and a fricative consonant, which otherwise share the same symbol: stop consonants are indicated by the presence of the *dagesh kal* (e.g., בּ /b/, כּ /k/, פּ /p/), while fricative counterparts are *dagesh*-free (e.g., ב /v/, כ /kh/, פ /f/) (Zhakevich & Kantor, 2019). In pre-MH, the *dagesh ḥazak* used to indicate the lengthening or doubling of a consonant (comparable to *shadda* in MSA), but the distinction in consonantal length has disappeared in MH (Coffin-Amir & Bolozky, 2005). Therefore, the *dagesh ḥazak* is often used in MH merely as a spelling convention (Zhakevich & Kantor, 2019). Although the above diacritics may be used in written MH, much like in written MSA, the *shva* and *dagesh* are often absent in written texts.

3.5 Concluding Remarks

This chapter has introduced the phonological, morphological and orthographic aspects of Arabic and MH that are relevant to analyzing the adaptation of HLs in written PA in Chapter 5. In addition, it has highlighted key differences between MSA and PA in terms of phonology and morphology.

From an ortho-phonological perspective, MSA and MH are quite similar. Both Arabic and Hebrew use a consonantal writing system, called abjad. As Saiegh-Haddad and Henkin-Roitfarb (2014) explain, “an abjad is a type of writing system where each symbol always or usually stands for a consonant, leaving the reader to supply the appropriate vowels” (p. 16). Both MSA and MH texts tend to be written non-vowelized, but may be optionally vowelized. Both MSA and MH are

also written from right to left. However, Arabic is written in a connected style (symbols are connected), whereas Hebrew is not. MSA has 28 consonants and three pairs of short and long vowels, while MH has 22 consonants and five vowels.

Hebrew and Arabic share several sounds, but there are some Hebrew consonants that do not exist in the Arabic alphabet, such as /p/, /v/, /g/ and /ts/; in addition, the Hebrew vowels /e/ and /o/ are not part of the vowel inventory of MSA. The vowels /e/ and /o/ are typically replaced in MSA with /i/ or /ī/ and /u/ or /ū/, respectively (see, e.g., Henkin, 2013). Dekel and Brosh (2012) add that MH /e/ can also be substituted by /a/ in Arabic, e.g., *banshar* (MH *pantsher*) 'flat tire.'

Since both languages are Semitic, MSA and MH share many morphological properties. Both MSA and MH use a system of consonant root and vowel patterns (root-and-pattern morphology) to derive verbs and nouns. While nouns in both languages are marked for gender (masculine or feminine) and number, nouns in MSA are marked for singular, dual, and plural, while nouns in MH are usually marked for singular and plural, with only a small number of nouns taking the dual suffix. The broken plural is a feature of MSA, but not of MH. As we have seen, there are also similar clitics in both languages, although they may function differently in each language.

Arabic and Hebrew have different writing systems. However, in both languages, the use of diacritics is optional. Moreover, in both languages, it is usually religious, literary and other formal texts that are vowelized, whereas other written texts are not.

Of course, both shared properties and differences between MSA and MH will play a role in the adaptation of HLs in PA, as will be detailed in the core analysis of this dissertation (Chapter 5).

Finally, we summarize some key differences between MSA and PA. In terms of phonology, we note the presence of some consonants in PA that are absent MSA; that MSA diphthongs are typically realized as long vowels in spoken PA; that, contrary to MSA, initial (two-) consonant clusters are permitted in PA; and that the glottal stop phoneme is weakened in PA. A final note on phonology concerns stress, which in Arabic is very much dialect-dependent. In terms of morphology, we acknowledge that most MSA gender and number markers are not found in spoken PA; that some MSA morphemes (e.g., the feminine singular suffix) are realized differently in PA; and that PA makes use of some clitics not found in MSA.

Chapter 4

Data and Methodology

This chapter presents the methodology used in this study. Section 4.1 describes the data collection process, section 4.2 describes the data analysis, section 4.3 provides information about the transliteration and transcription of the collected data, and section 4.4 lays out the research questions and hypotheses tested in this dissertation.

4.1 Data Collection

This thesis examines Hebrew loanwords (HLs) written in Arabic script on websites in Arabic published in Israel, the West Bank, and the Gaza Strip. Two corpora were created for this study; the first corpus includes HLs that appear in Arabic digital texts on websites published in Israel (hereafter the Israeli corpus), and the second corpus includes HLs that appear in Arabic digital texts on websites published in the West Bank and Gaza (hereafter the WG corpus). The search was conducted between October 2019 and December 2019. The HLs were collected from texts on websites in Arabic and, thus, are expected to represent the written variety of Arabic, which is modern standard Arabic (MSA). The data was collected from sources that typically appear in written form, such as news articles, news reports, articles of general interest, e.g., education, science, culture and recreation, and marketing materials.

Section 4.1.1 below describes the search parameters used to collect the data for the two corpora; 4.1.2 provides relevant information about websites in Arabic, and the final section, 4.1.3, describes briefly the content of the corpora.

4.1.1 Search Parameters

The following procedure was used to create both the Israeli corpus and the WG corpus. HLs were systematically collected from websites in Arabic published in Israel and WG. A search

of HL resources and databases in the *Google search engine*[19] was conducted to find HLs. The results were filtered in the Google search engine by language (Arabic) and country, with Israel selected for the Israeli corpus and Palestine selected for the WG corpus.

The following inclusion criteria were applied to HLs in each corpus:

1. HL gender could be masculine or feminine;
2. HL number could be singular, dual or plural;
3. HL could be a word or phrase;
4. HL appears in the title or content of the text, or an embedded, downloadable file;
5. HL could appear within parentheses or without parentheses.

The following exclusion criteria were implemented to eliminate HLs from our corpora:

1. HL is a proper noun, denoting the name of a place, company, street, etc.;
2. HL appears in the *comments* section of a website;
3. HL appears on Facebook, Instagram, or other social media platforms[20] (which represent informal written Arabic, as explained in chapter 1);
4. HL appears on forums and discussion boards (which are not expected to use MSA);
5. HL appears in texts that aim to teach Hebrew words or to suggest Arabic equivalents;
6. HL is a cognate shared between Arabic and Hebrew (derived from a common Semitic ancestor);
7. HL is written in Hebrew script.

[19] Note that the data available on the internet is influenced by online algorithms and by search engines, not by linguistic factors.

[20] On Facebook and other social media sites, users tend to adopt colloquial dialects, English loanwords written in Roman script, HL written in Hebrew script, or they use special scripts for Arabic letters that were created for use in online chats only.

When an HL was found in a text, the HL was recorded in a spreadsheet along with the sentence in which it was found and a link to the website, which provided context for the borrowed words. For example, the Google search results showed that the HL *tsiydanīt* (MH *tseydanit*) 'picnic cooler' appears on two websites. The first site was Facebook so this result was excluded; the second instance was a health-related website[21] that included the word *tsaydanīt*, so the word was recorded. The spreadsheet also includes the total number of occurrences of each loanword across websites after examining all the search engine results and filtering at a later step.

Finally, all HLs in each corpus were categorized and counted according to their semantic categories, frequency, Arabic equivalents, word class, and linguistic adaptation (phonological, morphological and semantic changes).

4.1.2 Websites in Arabic Published in Israel and WG

Online content is accessible for searching for HLs in written texts and can provide new insights regarding the borrowing of HLs among speakers of Palestinian Arabic (PA). Websites also allow for straightforward data recording. During the data collection phase, 890 websites in Arabic were considered: 630 websites in Arabic published in Israel and 260 websites in Arabic published in WG. In 2007, Kabaha classified websites in Arabic published in Israel into five categories: print media websites, online news sites, forums and discussion boards, websites for associations and civil society organizations, and personal websites. Today, there are also many social media sites, such as Facebook and Twitter (X). As previously mentioned, social media platforms were not included in the search for HLs because users tend to communicate in

[21] כללית 'Clalit,' (2020). *כללית_מדריך_הנקה [General guide to nursing].* www.clalit.co.il/arb/pregnancy_and_birth/pregnancy/Documents/Clalit_Madrich_Hanaka_7.2020%20arab.pdf

informal registers. The data collected for this study was gathered mainly from news websites, but also from websites connected to print media, and those of civil society organizations; a sample of the websites used to collect HLs is included in Appendix C. These websites contain a diverse range of topics. Many of these websites have similar section titles (headings) but include different content, e.g., local news, international news, economy, art and culture, business, consumer information, sports, entertainment, comedy, technology, lifestyle, health, astrology, weather forecasts, and advertisements.

The data collected for this study was taken from official and unofficial websites. The official websites include governmental organizations, news agencies, municipalities, regional councils, universities, and financial institutions. Unofficial websites include recreation and leisure websites dedicated to spheres such as cuisine, art, sports, etc.

This study does not examine the background of the writers on these websites. However, authors may be professional journalists, or they may be readers sending in materials such as recipes to be published. Authors could also be from different geographic areas and therefore, have varying degrees of contact with Hebrew speakers.

4.1.3 Corpora Content

The Israeli corpus includes a total of 6,623 tokens representing 550 unique HLs (types) (see Appendix B) from 630 websites and the WG corpus includes a total of 3292 tokens representing 202 unique HLs (types) from 260 websites. The HLs in both corpora were classified according to the semantic categories presented in Haspelmath and Tadmor (2009) for their typological work on loanwords.

The HLs in the Israeli corpus were divided into 16 different semantic categories: *food*, *education and institutions*, *body and healthcare*, *housing and construction*, *fashion and*

grooming, *economics, technology, transportation and cars, Judaism, jobs, recreation, qualities* (attributes), *arts, agriculture, law,* and *sports*. There were 43 HLs that could be categorized under more than one semantic category. In order to simplify counting, these HLs were classified according to the category they appeared in most frequently. For instance, the HL *ʿītsūf* (MH *ʿitsov*) 'design' appeared five times in the *education and institutions* category and only once under the *fashion and grooming* category; therefore, it was counted under the *education and institutions* category. Another example is the HL *handasaʾī* (MH *handesaʾi*) 'practical engineer' which is found more frequently under *education and institutions* than in *jobs*. Therefore, the HL for 'practical engineer' was also categorized and counted only under the *education and institutions* category. Since these 43 HLs can be assigned to multiple semantic categories, perhaps alternative groupings are possible in future analyses.

For some HLs there are multiple possible written forms. When an HL had two different spellings, they were counted as two tokens of one type; for instance, MH *pargiyot* 'chicken thighs' could be written by different writers as HL *barjiyūt* or *barghiyūt*. This study provides a faithful account of what is written on websites: HLs are transliterated as they appear, and spelling differences are noted in both corpora.

As noted above, the WG corpus includes a total of 3292 tokens representing 202 unique HLs drawn from 260 websites. All 202 HLs in the WG corpus were also found in the Israeli corpus (see Appendix B). It was possible to identify 14 semantic categories in this corpus, all of which are also applicable to the Israeli corpus: *food, education and institutions, housing and construction, Judaism, technology, transportation and cars, economics, body and healthcare, jobs, fashion and grooming, recreation, arts, agriculture,* and *law*. The only two categories for which HLs were found only in the Israeli corpus are *qualities* (attributes) and *sports.*

A corpus of only a few thousand words (and either 202 or 550 types) may seem like a small sample, however, these corpora fill a gap in the lexical borrowing literature and contribute to our understanding of the contemporary contact situation between Hebrew and PA. Contact between Arabic and Hebrew is worthy of examination and documentation. This study is also novel in that it considers specifically the use HLs in PA digital spaces both within and outside of the geographical boundaries of Israel. Since this study is the first of its kind and we are dealing with a contemporary and dynamic contact situation, each corpus can be considered an 'open' corpus which can be modified or augmented over time depending on circumstances (e.g., the recent global pandemic).

4.2 Data Analysis

The study uses several lexical, distributional and structural criteria to examine the data collected for both corpora, as is typical of loanword studies[22]. From a lexical perspective, HLs are analyzed by semantic category, by the existence of Arabic equivalents, and by word class. The distribution of HLs by relative frequency and by semantic category is also taken into account. Finally, HLs are also examined from the perspective of phonological, morphological, and semantic adaptation.

The distribution of HLs by semantic category was based on the broad categories suggested by Haspelmath and Tadmor (2009) (mentioned above in 4.1.3). HLs were also categorized as *nouns, verbs, adjectives,* and *adverbs*. The list of HLs also includes phrases and compound words; as explained ahead (Chapter 5), if such phrases and compounds are borrowed as unanalyzed units, they are treated as monomorphemic PA items in this study.

[22] The criteria used in this study roughly follow Salem (2015), who examines English loanwords in spoken and written Jordanian Arabic.

To determine whether HLs have Arabic equivalents, various references were consulted including the Sagiv dictionary (Sagiv, 2008), wordlists from previous studies examining spoken PA, and flyers produced by the Arabic Language Academy in Israel that proposes Arabic alternatives for HLs.

The analysis of the frequency was based on the number of occurrences (tokens) of HLs per corpus. The study includes both absolute frequency (total number of occurrences of an HL in a corpus) and relative frequency for the HL in each corpus (the percentage of tokens occupied by a specific HL in each corpus). For example, the HL *ramzūr* 'traffic light' has 101 tokens in the Israeli corpus. Thus, the relative frequency of *ramzūr* in the Israeli corpus is 1.5%: 101 tokens out of a total 6623 tokens in the corpus.

The study also examined the phonological, morphological, and semantic changes that HLs undergo to conform to the structures of PA. The phonological changes were examined following Campbell (1998), Dekel and Brosh (2012), Henkin (2013) and Henkin-Roitfarb (2011). According to Campbell (1998), loanwords may undergo adaptation or accommodation in the recipient language. Although the classification of phonological changes made by Dekel and Brosh (2012), Henkin (2013), and Henkin-Roitfarb (2011) refer to HLs in spoken PA, they are a critical reference for an examination of the HLs found in written PA.

The analysis of morphological adaptation considers first items that fall within inflectional morphology, e.g., gender and number. The use of clitics in PA with respect to HLs will also be discussed. Finally, derivational morphology is considered, such as the process of root extraction to create new words from borrowed Hebrew roots (see Dekel & Brosh, 2012; Henkin, 2013; Henkin-Roitforb, 2011).

The analysis of semantic change considered whether HLs undergo semantic narrowing or widening following the criteria outlined by Campbell (1998). These semantic changes are addressed in Chapter 5.

Finally, the study compares the use of HLs between the Israeli corpus and WG corpus (in terms of distribution, frequency and linguistic adaptation) to determine whether the degree of contact between PA and MH within and outside of Israel influences the use of HLs. Degree of contact between PA and MH in each corpus is based on the borrowing scale suggested by Thomason (2001), since the degree of contact between languages is understood to be critical to the elements that are borrowed in the recipient language and their degree of integration (see Chapter 2).

4.3 Transliteration and Transcription

To represent the orthography of written Arabic and Hebrew in Latin script, I used the transliteration tables of the *American Library Association - Library of Congress (ALA-LC)*[23] (see Appendix A). The only convention adopted here, that is not part of the Library of Congress table, is the practice of indicating an initial glottal stop in Arabic: an initial glottal stop is represented orthographically as (ʾ) for the benefit of non-Arabic readers.

HLs were transliterated according to their spelling in the digital texts accessed for this study. As mentioned earlier, in Chapter 3, in written Arabic, short vowels (*a, u, i*), *sukūn*, *shadda* and *tanwīn* are represented by diacritics and usually do not appear in digital texts. The *tanwīn* was only transliterated if it was given in the digital texts.

[23] Library of Congress (5 April 2024), "ALA-LC Romanization Tables: Transliteration Schemes for Non-Roman Scripts." *The Library of Congress*, https://www.loc.gov/catdir/cpso/roman.html

The Arabic definite article attached to the HL is transliterated as *ʾal-* even if the HL starts with a sun letter. As mentioned in Chapter 3, if the word starts with a sun letter, the *l* of the definite article is assimilated in pronunciation, but this is not conveyed in the written language. Hence, the HL for 'the traffic light' is transliterated *as ʾal-ramzūr*, although it would be read and spoken as *ʾar-ramzūr.*

In Arabic, the feminine suffix ـة*-t* (called *tāʾ marbūṭah*) is transliterated as ـه*-h*, because it is usually pronounced as /h/, except when it is in the construct state (genitive). For example, the HL *mikhīnāh* 'preparatory program' is transliterated with *h* at the end although it was found written with *t* at the end in *mikhīnāt*. This represents Arabic writing convention. If in the construct state, the *t* is pronounced and transliterated as *t*, for example *ḥimʾat būtnīm* 'peanut butter.'

Throughout this study, transliterated Arabic and Hebrew words are written in italics and are followed by their English gloss. The English glosses are primarily taken from the Morfix Online Dictionary (morfix.co.il), which offers English meanings for Hebrew words. If a meaning is not found in Morfix, then the gloss represents the meaning conveyed in the digital text.

At times it was also necessary to make use of the International Phonetic Alphabet (IPA) to represent the pronunciation of some examples. The IPA symbols for Arabic sounds, and their corresponding symbol in transliteration, are presented in Tables A1 and A2 of Appendix A.

Chapter 5

Hebrew Loanwords in Written Palestinian Arabic: Findings and Discussion

This chapter explores the relative distribution and frequency of Hebrew loanwords (HLs) in Palestinian Arabic (PA) websites from Israel and from the West Bank and Gaza Strip (WG), as well as the linguistic adaptations they undergo. Section 5.1 presents the findings of the distribution of HLs by semantic category, semantic equivalent word, and word class. It additionally presents the frequency of HLs in each corpus (Israeli corpus and WG corpus). Section 5.2 presents the findings of the phonological, morphological and semantic adaptations that HLs undergo in written PA.

5.1 Distribution and Frequency of HLs

This section presents the relative distribution and frequency of HLs by semantic category, by Arabic equivalent, and by word class in both the Israeli and WG corpora. The Israeli corpus will be discussed first.

5.1.1 Distribution and Frequency of HLs by Semantic Category: Israeli Corpus

The Israeli corpus includes 550 HL types (unique words) and 6623 HL tokens (occurrences) drawn from 630 websites. As outlined in Chapter 4, HLs were classified according to the contexts in which they appeared on websites; the 16 semantic categories identified for this study are adapted from Haspelmath and Tadmor's (2009) semantic fields for their loanword typology project and loanword database. It is worth mentioning again (see Chapter 4) that 43 HLs could be assigned to more than one semantic category based on their appearance in different types of digital texts; these items were ultimately assigned to one semantic category – the one in which they appeared most frequently.

The items from the Israeli corpus presented below are representative of the semantic categories relevant for HLs found in written Arabic in Israel. Table 7 shows the total number of unique lexical entries (types) and percentage of HLs by semantic category in the corpus, together with a few illustrative (transliterated) examples from the Israeli corpus and English gloss. As explained in Chapter 4, this study largely follows ALA-LC transliteration standards, but an initial glottal stop is represented orthographically (ʾ) for the benefit of non-Arabic readers. The complete list of HLs from both corpora is found in Appendix B, where the examples are presented in Arabic script and Romanized form, together with the Hebrew donor item (in Hebrew script and Romanized form) and English gloss.

Table 7

Distribution of HLs[24] from the Israeli Corpus by Semantic Category

Semantic category	Count	Percentage	Examples of HLs
Food	139	25.3%	*limūnaʿnaʿ* ‘mint lemonade,’ *ʾukhmanyūt* ‘blueberries,’ *ʾishkalyūt* ‘grapefruits’
Education and institutions	131	23.8%	*ḥīnūkh miyūḥād* ‘special education,’ *līkūyī limīdā* ‘learning disabilities,’ *madaʿī maḥāshīf* ‘computer science’
Body and healthcare	35	6.4%	*mījrīnā* ‘migraine,’ *dimintsyā* ‘dementia,’ *dīkaʾūn* ‘depression’
Housing and construction	34	6.2%	*shāyish* ‘marble, countertop,’ *shilīkhṭ* ‘skim coat, an upper thin layer of plaster on a wall,’ *kalkār* ‘styrofoam’
Fashion and grooming	33	6%	*taltalīm* ‘curls,’ *maḥlīk* ‘hair straightener,’ *masīkhā* ‘mask’

[24] As will be demonstrated below, many of the examples found in the Israeli corpus are also found in the WG corpus.

Semantic category	Count	Percentage	Examples of HLs
Economics	33	6%	*ʾashrāy* 'credit,' *māʿam* 'value added tax,' *halfaʾah* 'loan'
Technology	32	5.8%	*taklītūr* 'compact disc,' *matʿīn* 'charger,' *makhshīr kīshir* 'communication device'
Transportation and cars	27	4.9%	*ʾafnūʿīm* 'motorcycles,' *taḥanā mirkazīt* 'central (bus) station,' *madrikhā* 'sidewalk'
Judaism	27	4.9%	*rabānūt rāshīt* 'main rabbinate,' *rūsh hashānā* 'Rosh Hashanah' (the Jewish New Year), *shafūʿūt* 'Shavuot'
Jobs	19	3.5%	*takhnāʾī* 'technician,' *sūkhīn* 'agent,' *shamāy rīkhīf* 'car appraiser'
Recreation	14	2.5%	*rakhbāl* 'funicular railway,' *nūfish* 'holiday,' *hakūl kalūl* 'all inclusive'
Qualities	8	1.5%	*frāyarīm* 'suckers,' *rūshim* 'impression,' *nūdnīk* 'nuisance, bothersome person'
Arts	7	1.3%	*ʾūrfizyūn* 'Eurovision', *bsīkhūtiyaʾtirālī* 'psycho Theatrical,' *hadmayā* 'simulation'
Agriculture	4	0.7%	*tiftūf* 'dripping,' *ḥamamūt* 'greenhouses,' *rīshīt* 'net'
Law	4	0.7%	*takshīr* 'civil service regulations,' *bajāts* 'high court of justice,' *mūʿātsā mikūmīt* 'local council'
Sport	3	0.5%	*ʾatlatīkā* 'athletics,' *ʾirūbīkā* 'aerobics,' *ʾistadyūn* 'stadium'
Total	**550**	**100.0%**	

As is evident from Table 7, the categories of *food* and *education and institutions* jointly account for approximately half (49%) of the total number HLs (270 out of 550) in the Israeli corpus. The greatest percentage (25.3%) of HLs in the corpus created for this study is found in the *food* category, which covers lexical items related to meat, dairy, pastry, spices, drinks, vegetables, fruits, restaurant menus and recipes. Further inspection showed that texts announcing openings for new restaurants and grocery stores are rich with HLs. As Amara (2018) explains, the presence of many Hebrew terms for food items in the PA lexicon reflects the significant impact of Jewish Israeli cultural influence throughout Israel. Although the focus of this study is on the use of HLs in written Arabic, it is worth mentioning that Hebrew has also borrowed many words related to food from Arabic, for example Hebrew *falafel* (PA *falāfil*) 'falafel,' *ḥumus* (PA *ḥummuṣ*) 'hummus, chick peas,' and *tabule* (PA *tabbūli*) 'salad with parsley and bulgur' (Shehadeh, 2011).

Many HLs have entered PA through Israeli products and their Hebrew names, as has also been observed by many scholars (Amara, 2018; Jabali & Ayyoub, 2021; Shehadeh, 2019). Another potential source of HL contribution is identified by Mahajna (2019): the opening of franchise restaurants offering alternatives to Palestinian cuisine in Arab towns; many of these restaurants offer menu selections in Hebrew. To illustrate how prominently HLs can figure in restaurant menus, I offer the following example verbatim from a website from the Israeli corpus, with HLs underlined (underscore mine):[25]

(1) صدر دجاج مع شمينت. صدر دجاج مع شوم. برجيت. شنيتسل. شنيتسلونيم

ṣadr dajāj maʿ shamīntin. ṣadr dajāj maʿ shūm. barjīt. shnītsil. shnītsilūnīm

[25] بلدتنا [BLDTNA, Our Town Website]. (2019, May 9) موقع *وادي عارة: مطعم كوفي شوب ذوق اخر.. جلسة هادئة وطعم لا يقاوم*. *[Wadi Ara: A coffee shop restaurant with another taste… a quiet sit-down restaurant and an irresistible taste.]* http://bldtna.co.il/news/news/117662/وادي-عارة:-مطعم-كوفي-شوب-ذوق-اخر..-جلسة-هادئة-وطعم-لا-يقاوم.html

'chicken breast with cream, chicken breast with garlic, chicken thighs, schnitzel, small schnitzels'

Note that five of the eleven words mentioned in this line of text are HLs; indeed, five of nine content words are HLs.

The second highest percentage of HLs was found in the category of *education and institutions*. Hebrew is the language of instruction at universities in Israel; not knowing Hebrew disadvantages PA speakers in higher education (Amara, 2007). The *education and institutions* category includes HLs that indicate names of exams and courses, as well as other terminology of an academic nature. For example, the following HLs (not listed in Table 7) are simply names of exams: *ʾamīrām* 'English exam for university,' *bsīkhūmitrī* 'psychometric entrance test,' *mūr* 'medical faculty exam,' and *yāʿīl* 'Hebrew exam for university.' Other HLs are names of educational plans, programs and services: *bīsjā* 'a regional institution for the development of teaching staff,' *bīraḥ* 'tutoring project,' *mātyā* 'local or regional support center,' *hīlā* 'completion of basic and educational studies.' In addition, there are some HLs that denote educational centers, such as *bīt hāstūdīnt* 'student center,' *mirkāz tsiʿīrīm* 'youth center' and *hīkhal hatarbūt* 'performing arts center.'

The next most prominent semantic categories, each containing relatively equal numbers of lexical items (types), are *body and healthcare* (6.4%), *housing and construction* (6.2%), *fashion and grooming* (6%), *economics* (6%) and *technology* (5.8%). These are semantic categories that include words used in social contexts with high contact between speakers of PA and Hebrew. The *body and healthcare* category represents a 'mixed domain' for loanwords in Amara's (2018, 2006a) classification system, i.e., a semantic field with significant borrowing pre- and post-1948 with 'intermediate levels of integration of Hebrew items' (Amara, 2006a, p.

3). As Amara (2018) explains, the *health* domain borrowed many English words (e.g., doctor, nurse) during the time of the Palestinian health services system established under the British Mandate (1922-1947). The borrowing of health terms is paralleled in the post-1948 era with HLs. Arabs in Israel are members of one of several Israeli health insurance plans, where the Hebrew language is the dominant language (Amara, 2018). It is therefore not surprising to find HLs in the Israeli corpus. As we will see ahead, the percentage of HLs in this semantic category is higher in the Israeli corpus than it is in the WG corpus.

Another fertile area for language contact is the construction industry. As a result, many HLs are found in the *housing and construction* category. Many construction workers in Israel are Palestinian Arabs; thus, there is significant contact between Arab workers and Hebrew-speaking employers in construction. Moreover, contemporary housing in Arab cities in Israel follows Western trends (in style and materials), which are adopted first by the Hebrew-speaking population (see Amara, 2018, for details on these architectural developments). HLs related to the design of houses include: *ʾūtūmātsyā* 'automation (of housing components),' *miṭbakhūn* 'kitchenette,' and *shīkūn* 'housing project (i.e, condominium).' Other HLs in this semantic category that are worth mentioning are *dīrāh li-haskarāh* 'apartment for rent,' and *miḥīr la-mishtakin,* which means literally 'price for occupant,' but refers to a new subsidized housing project.

Haspelmath and Tadmor (2009) observe that colonialism and globalization often lead to borrowing in the semantic field of clothing and grooming. The *fashion and grooming* semantic category in the Israeli corpus includes HLs associated with clothing, beauty and jewelry. Two interesting examples from the Israeli corpus stand out: *tūnīkā* 'tunic' and *ʿilyūnīt* 'tunic.' These two HLs have the same meaning, and are used interchangeably, but reveal two pathways through

Hebrew for borrowing in PA. The word *tūnīkā* is an English borrowing in Hebrew, which in turn is borrowed – via Hebrew – in PA. The other example, *ʿilyūnīt*, is a HL of Hebrew origin. The limited nature of the corpus does not permit us to establish whether one term is preferred over the other in particular contexts. Suffice it to say that both words would be frequently encountered in clothing markets and shops.

HLs in the *economics* category are related to Israel's economic system, and include words for 'credit,' 'payment,' 'invoice' and 'interest' (see examples in Table 7 and Appendix B). Economically, the Arabic-speaking minority in Israel is dependent on the Hebrew-speaking majority and Arabic has a small value in the language market in Israel (Amara, 2006b). Thus, the use of HLs in this category was not unexpected. An interesting HL used in banking is *rībīt* (MH *ribit*) 'interest,' the Arabic equivalent for which is *ribā* 'interest.' It is possible that the HL for 'interest' is preferred by some PA speakers in order to avoid using the Arabic term, which can have negative connotations (around the concept of charging interest) in Islamic societies (cf. Mawasi, 2013).

Amara (2018) considers the semantic category of *technology* a 'modern domain', i.e., one rich with the integration of Hebrew words. Indeed, it was anticipated that a very large number of borrowings would be found, given the number of new words and concepts to be integrated. However, less than 6% (5.8%) of the total HLs in the Israeli corpus belong to the *technology* category. Despite the high degree of language contact needed for transactions related to this category – e.g., contact between Arabic-speaking consumers and Hebrew-speaking customer service agents in the purchasing of devices and services, and the repair of devices – there is a relatively low percentage of HLs in the Israeli corpus. Perhaps PA speakers borrow words directly from English, e.g., *kumbyūtar* 'computer' since they are significantly exposed to English

via the internet and social media. This would not be surprising given both the dominance of English terminology globally in technology and the rise in the learning of English as an additional language among PA Israelis. Henkin (2013) argues that the HL *maḥashīf* has been replacing the English loanword *kumbyūtar.* Whether the English loanword is simply in healthy competition with the Hebrew term, is receding or progressing in terms of its penetration of PA, remains to be determined.

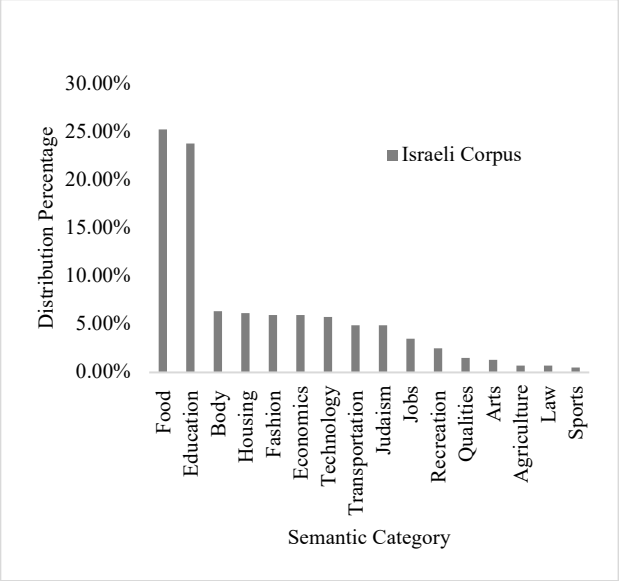
HLs in the semantic categories *transportation and cars* and *Judaism* are less prominent in the Israeli corpus than previously mentioned HLs, and each category accounts for less than 5% (4.9%) of the overall corpus. The *transportation and cars* category comprises HLs that refer to specific models of cars, such as the 'beetle,' and terms for 'gas station,' 'bus station,' and 'junction.' The *Judaism* category includes HLs mostly related to the Jewish religion, Jewish festivals and greetings. Examples of greetings (that are not listed in Table 7) are: *būrīm sāmiyaḥ* 'happy Purim' and *shanā tūfā* 'Happy New Year.' Prior to 1948, these Hebrew words were not commonly found in PA language.

The remaining categories each contains, in descending order of prominence (see Figure 2), the fewest HLs: *jobs* (3.5%), *recreation* (2.4%), *qualities* (1.5%) and *arts* (1.3%). HLs in the categories of *agriculture, law,* and *sports* each make up less than 1% of the total HLs in the Israeli corpus. The relatively low frequency of HLs in these categories undoubtedly stems from a couple of factors. First, there is likely less direct contact between Arabic and Hebrew speakers in connection with these categories; these topics likely figure less prominently in conversations. Second, this may be a reflection of the limited nature of the corpus: the data were collected within specific timepoints (October to December 2019), from a variety but limited number (890) of websites and only from core website content (excluding reader comments, for example).

Perhaps more loanwords in these categories exist but were not encountered in this study. Figure 2 captures the relative distribution (in descending order) by semantic category of all HLs in the Israeli corpus.

Figure 2

Relative Distribution of HLs by Semantic Category in the Israeli Corpus



Note. The full category labels are as follows: Education: Education and institutions; Body: Body and healthcare; Housing: Housing and construction; Fashion: Fashion and grooming; Transportation: Transportation and cars.

5.1.2 Distribution and Frequency of HLs by Semantic Category: WG Corpus

The WG corpus includes 202 types and 3292 tokens of HLs from 260 WG websites. There are three HLs found in WG websites that did not appear in the Israeli websites and were excluded from the corpus. With the exception of three HLs, to be discussed below, all HLs from the WG corpus were also found in the Israeli corpus, but the Israeli corpus contained an additional 348 HLs are not found in WG websites. To clarify, the 202 types indicated above refer to the unique HLs found in the WG corpus and shared with the Israeli corpus; shared lexical items are underlined in Appendix B. The 202 HLs are distributed across 14 of the 16 semantic

categories identified above; no HLs from the *qualities* or *sports* categories were found in WG corpus. Table 8 below shows the number and percentage of HLs in the WG corpus by semantic category together with representative examples and gloss.

Table 8

Distribution of HLs from the WG Corpus by Semantic Category

Semantic category	Count	Percentage	Examples of HLs
Food	56	27.7%	*shnitsil* 'schnitzel,' *shamīnit* 'cream,' *lakhmanyūt* 'buns'
Education and institutions	27	13.3%	*bajrūt* 'matriculation exams,' *rifliksulūjyā* 'reflexology,' *rūbūtīkā* 'robotics'
Housing and construction	23	11.3%	*kablān* 'contractor,' *shībūts* 'renovation,' *manūf* 'crane'
Judaism	22	11%	*tanākh* 'Hebrew Bible,' *ḥākhāmīm* 'sages' (of Talmud), *kashīr* 'kosher'
Technology	15	7.4%	*ʾazʿakā* 'alarm,' *majīn* 'protector,' *makhshīr* 'device'
Transportation and cars	14	7%	*ramzūr* 'traffic light,' *mūnīt* 'taxi,' *ḥanyūn* 'parking lot'
Economics	13	6.4%	*binsiyā* 'pension,' *tlūsh* 'pay slip,' *tūfis* 'form'
Body and healthcare	9	4.4%	*ʾantībiyūtīkā* 'antibiotic,' *diyālīzā* 'dialysis,' *sintūr* 'catheterization'
Fashion and grooming	5	2.5%	*kūsmātīkā* 'cosmetics,' *tībūl* 'care, treatment,' *bidīkūr* 'pedicure'
Jobs	5	2.5%	*minahīl ʿafūdā* 'foreman,' *ʾarizā* 'packing,' *mikhrāz* 'job posting'

Semantic category	Count	Percentage	Examples of HLs
Recreation	5	2.5%	*tsīmir* 'B&B,' *kanyūn* 'mall,' *kayākīm* 'kayaks'
Agriculture	4	2%	*ḥamāmūt* 'greenhouses,' *tiftūf* 'dripping,' *dīshī* 'lawn'
Arts	3	1.5%	*ʾūrfizyūn* 'Eurovision,' *taklītān* 'deejay,' *bāntūmīmā* 'pantomime'
Law	1	0.5%	*bajāts* 'high court of justice'
Total	**202**	**100.0%**	

As mentioned above, the WG corpus shares 14 semantic categories with the Israeli corpus; there were no HLs for the categories *qualities* and *sports* in the websites consulted for this study. HLs in these categories were already quite limited in the Israeli corpus (~1%), so it is reasonable to suggest that there just may not be enough data in the smaller WG corpus to capture the rarer use of these types of HLs.

Before taking a closer look at some of the examples in Table 8, it is worth remarking on the number of HLs that appear in the WG corpus. As Jabali and Ayyoub (2021) have recently pointed out, there are efforts underway in the West Bank to avoid the use of Hebrew in media (print, broadcast) and the internet, and to adopt Arabic-only policies. Our study demonstrates, though, that real world usage typically ignores such efforts. The impact of Hebrew on PA is unavoidable, even in the case of the West Bank, and direct contact can transcend political and academic efforts to thwart the spread of Hebrew. It is worth noting, too, that our corpus is based on *written* language, a mode in which one can expect less spontaneity and more careful planning – nevertheless, a considerable number of Hebrew words succeed in penetrating PA.

As is the case in the Israeli corpus, the greatest percentage of HLs (27.7%) is found in the *food* category in the WG corpus. This is not surprising given the regular movement and consumption of goods that bear Hebrew labels. As Jabali and Ayyoub (2021) observe, Hebrew terms for the names of foods and beverages have penetrated PA (since 1967) because these products are found in WG markets and are promoted in Israeli Arabic media.

The semantic category of *education and institutions* contains the second-highest number of HLs, in keeping with the pattern in the Israeli corpus; however, the relative distribution is much lower (13.3%) in the WG corpus (vs. 23.8% in the Israeli corpus). Since the use of Hebrew in the education sector is quite limited in the WG (see Chapter 1), this was a surprising discovery in the WG corpus. Two possible reasons emerge for the use of HLs in this category. First, since Arab Israeli students have been enrolling in universities in the West Bank, it is possible that those institutions have adopted the relevant Hebrew terminology in order to be consistent with the terminology familiar to Arab students in Israeli towns. For example, post-secondary students are required to obtain a certificate of *bajrūt* 'matriculation exams' or be *zakʾī* 'eligible' for a matriculation exam certificate. Second, it is common to find news items and announcements related to Arab students in Israel in the media in the WG; in websites, these types of stories are typically found in a section called 'news of Arab 48.' Such stories would necessarily include the relevant Hebrew terminology, and thus lead to the adoption of HLs.

As Jabali and Ayyoub (2021) explain, many Palestinians from the West Bank work in Israeli towns, in various sectors, including agriculture, industry and construction; in particular, numerous Palestinians from the West Bank work in the latter sector. As mentioned above, PA speakers, whether from within or outside the West Bank, working within Israel, need to use Hebrew to communicate with employers and with Israeli citizens. Given the extent of contact

between Hebrew and PA speakers in this context, it is not unexpected, then, that we find a healthy number (11.3%) of lexical items, such as *manūf* 'crane,' related to the *housing and construction* category in the WG corpus. There have been studies (Hawker, 2011; Inkheili, 2020) in the past decade or so, in fact, dedicated to the use of HLs in the West Bank in the construction sector.

Discovering that the *housing and construction* category of WG corpus accounts for approximately 11% of HLs in the WG corpus is not surprising; discovering roughly the same number of HLs in the *Judaism* category (11%) is perhaps somewhat of a surprise. The WG corpus includes HLs related to Jewish religion and holidays. A possible explanation for the prevalence of HLs associated with Jewish holidays is that workers from the WG who work in Israel need to use these terms because their work calendar is affected by such holidays.

The *technology* category includes 7.4% of the HLs found in the WG corpus, which is comparable in terms of relative distribution to what we find in the Israeli corpus (5.8%). The relatively low number of HLs in this category is to be expected. Lexical items referring to new technology and related concepts are usually borrowed from English, which has second language status in the WG (see Chapter 1), rather than from Hebrew. Indeed, websites in WG tend to use Arabic or English equivalents when referring to technology.

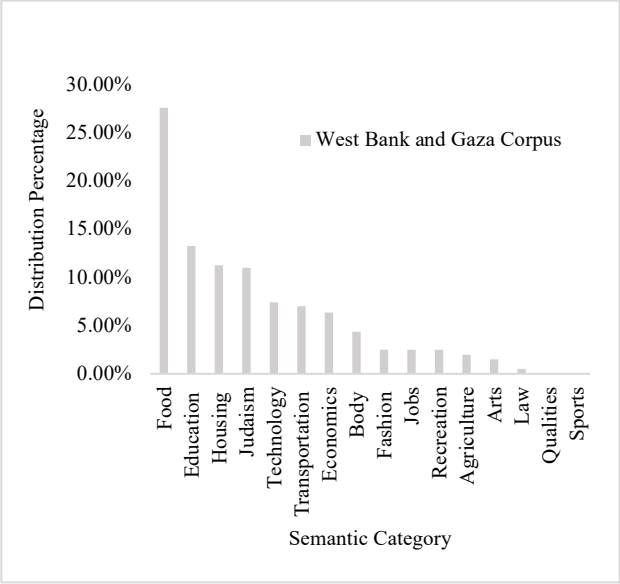
The *transportation and cars* category also constitutes 7% of HLs in the WG corpus, and includes the word *maḥsūm* 'checkpoint' (discussed in more detail ahead). An obvious reason for HLs in this category is the degree of contact between PA and Hebrew speakers at checkpoints between the WG and Israel. As Jabali and Ayyoub (2021) observe, such contact results in the repetition of certain Hebrew words and leads to their use in everyday conversations. Hawker (2011) recounts an interesting anecdote related to the word 'checkpoint.' She observed an 8-year-

old PA-speaking child from the West Bank who heard the Arabic term for 'checkpoint,' *ḥājiz,* and did not understand it until an adult explained that it meant *maḥsūm*.

HLs related to the *economics* category comprise 6.4% of the WG corpus and are found – unsurprisingly – in texts about the economy, banking and finance. Their presence is undoubtedly linked to terminology that PA speakers working mainly in Israel need to use in the context of transactions related to employment. Figure 3 illustrates the relative distribution (in descending order) by semantic category of all HLs in the WG corpus.

Figure 3

Relative Distribution of HLs by Semantic Category in WG Corpus



Note. The full category labels are as follows: Education: Education and institutions; Housing: Housing and construction; Transportation: Transportation and cars; Body: Body and Healthcare; Fashion: Fashion and grooming.

The remaining HLs in the WG corpus are found in the following categories, each of which makes up less than 5% of total HLs: *body and healthcare* (4.4%), *fashion and grooming* (2.5%), *jobs* (2.5%), *recreation* (2.1%), *agriculture* (2%), *art* (1.5%), and *law* (0.5%) (see Figure 3). Given that the corpora are limited to several hundred unique words, it seems reasonable to

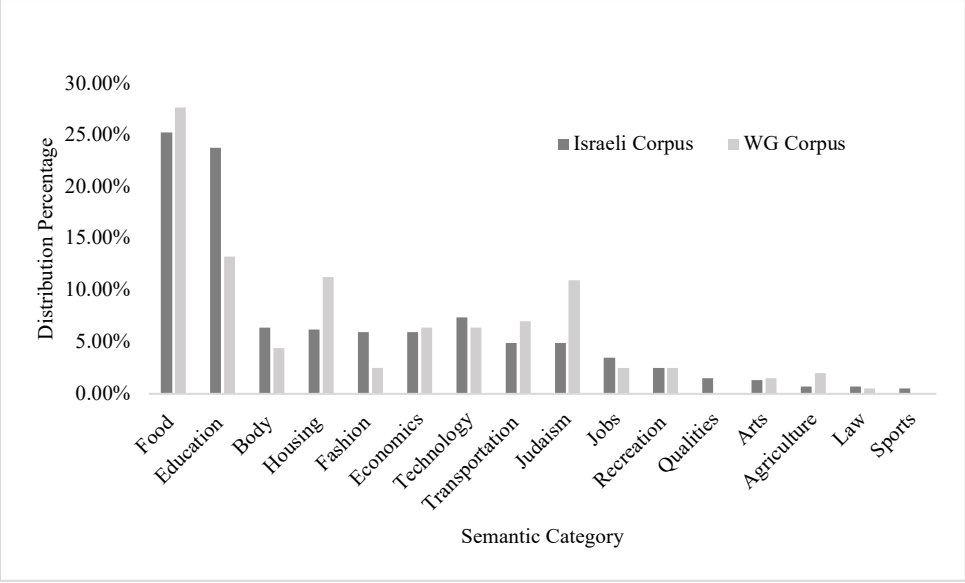
state that each of these categories accounts for a small number of HLs in PA. Perhaps there is more limited contact between PA and Hebrew speakers in contexts that would necessitate the use of Hebrew terms; perhaps these terms simply don't arise often in conversation. What is worth noting, though, is that we find similar trends in each corpus, and that the relatively few HLs that are used in these categories are the same irrespective of geographical region.

5.1.3 Overall Pattern Across Both Corpora

Although the WG corpus contains less than half of the HLs of the Israeli corpus (202 vs. 550 respectively), the overall pattern of borrowing is similar, and the highest percentage of HLs in both corpora appear in the *food* and *education and institutions* categories. Figure 4 below succinctly captures the distribution of HLs by semantic categories in the Israeli corpus and WG corpus together.

Figure 4

Relative Distribution of HLs by Semantic Category in Each Corpus



Note. The full category labels are as follows: Education: Education and institutions; Body: Body and healthcare; Housing: Housing and construction; Fashion: Fashion and grooming; Transportation: Transportation and cars.

As is evident from the summary figure above (and Tables 7 and 8 presented previously), the relative distribution of HLs depends on the semantic category: lexical items that are more influenced by the dominant-language culture (e.g., items in the *food* and *education and institution*s categories) figure more prominently in the corpora than those less affected by dominant-language systems and culture (e.g., *arts* and *sports* categories). Although the borrowing of administrative terms from the dominant language in areas such as *education and institutions* or *economics* is somewhat expected in the Israeli corpus, it is perhaps more surprising in the WG corpus.

HLs cover many categories, such as *technology, transportation and cars,* and *jobs*, as discussed. When comparing the two corpora, two observations are worth noting. First, the *housing and construction* category includes a higher proportion of lexical items in the WG corpus than in Israeli corpus. As discussed above, the relatively higher proportion of these lexical items in the WG corpus is attributable to the number of workers employed in Israel from the WG. Although there are fewer unique terms within *housing and construction* in the WG corpus (23) compared to the Israeli corpus (34), those items represent a larger percentage of the WG corpus overall: 11.3% vs. 6.2% in the Israeli corpus. Moreover, a type – token analysis of the corpora confirms the greater use of such terms in PA in the WG. In the Israeli corpus, 34 items occur 481 times, whereas in the WG corpus, 23 items occur 500 times.

Second, although limited in number and relative distribution, the lexical items in the category *agriculture* in each corpus merit some attention. The same four words emerged in each corpus, and are captured in part in each of the tables above (7 and 8); the four HLs refer to ‘dripping,’ ‘greenhouse,’ ‘lawn,’ and ‘net.’ PA speakers are likely unaware of the equivalent terms in Arabic, as these are terms that have come into use with Israeli agricultural development

and employers. As Jabali and Ayyoub (2021) note, three of these lexical items ('dripping', 'greenhouse' and 'net') are commonly used in the West Bank as a result of PA speakers working in agriculture in Israel.

As mentioned previously, three HLs appeared only in websites consulted for the WG corpus (are not included in Appendix B); none was encountered in the Israeli websites. The HLs in question are: *sījir* 'lockdown, closure,' *raʿāfīm* 'roofing tiles,' and *tsalaḥūt būlmīm* 'brake plates.' The word *sījir* 'lockdown, closure' was found three times in websites used for the WG corpus. Jabali and Ayyoub (2021) consider the word 'closure' a common word that PA speakers learn at checkpoints. The Hebrew word *raʿāfīm* 'roofing tiles' belongs to the *housing and construction* category. It was found twice in the WG websites. As discussed above, this semantic category absorbs many Hebrew words as a result of contact between PA speakers from the WG and Hebrew speakers from Israel. The word for 'brake plates,' which belongs to the *transportation and cars* category, occurs only once in the WG corpus; its use is likely linked to the buying and selling of automobiles and parts between speakers of PA and Hebrew.

Although these three examples are not frequently used, and are admittedly very few, it is worth mentioning that finding HLs in the WG corpus that do not appear in the Israeli corpus, is somewhat surprising. Given the limited use of the Hebrew language and the status of English as a second language in the WG, it was anticipated that the use of HLs would also be very limited, and perhaps almost non-existent in written Arabic.

5.1.4 Analysis of HLs by Usage: Tokens

In the discussion above attention was focused largely on the relative distribution of unique words (types) by semantic category. We now focus our attention on usage patterns related to these words. Interesting observations emerge when we consider which lexical items enjoy the

greatest usage in each corpus. While many words in each corpus appear only once or a handful of times, there are a few words that appear dozens of times on the websites consulted. The Israeli corpus is discussed first, followed by an examination of the WG corpus.

Table 9 below shows the five most frequent HLs in the Israeli corpus and their corresponding semantic categories.

Table 9

Most Frequent HLs (Tokens) in the Israeli Corpus

Semantic category	HLs	Absolute frequency	Relative frequency
Judaism	*ḥarīdīm* 'orthodox Jews'	186	2.8%
Transportation and cars	*trakturūn* 'all-terrain vehicle'	128	1.9%
Recreation	*kanyūn* 'mall'	107	1.6%
Transportation and cars	*ramzūr* 'traffic light'	101	1.5%
Education and institutions	*jirāfīkā* 'graphic arts'	95	1.4%

The five most frequent HLs in the corpus are drawn from four different semantic categories. Lexical items from the categories of *Judaism* and *transportation and cars* have the highest frequency counts in the Israeli corpus, although they come from semantic categories that are overall less frequent. The fact that these words appear so often in written form, even in a limited corpus, is an indication of how entrenched they are in PA in Israel. In fact, the words for 'traffic light' and 'mall' are cited often in studies of spoken PA (Amara, 2018; Dekel & Brosh 2012; Shehadeh, 2019); their frequent use in written form confirms their entrenchment in spoken language usage. In addition, all of these highly frequent words demonstrate a high degree of phonological and morphological adaptation, as will be discussed ahead, which is another indication of the degree of entrenchment in PA in Israel.

Table 10 below shows the five most frequent HLs in the WG corpus; they are drawn from three different semantic categories: *Judaism, construction and housing,* and *transportation and cars*.

Table 10

Most Frequent HLs in WG corpus

Semantic category	HLs	Absolute frequency	Relative frequency
Judaism	*ḥarīdīm* 'orthodox Jews'	318	9.6%
Housing and Construction	*mishtāḥ* 'pallet'	185	5.6%
Transportation and cars	*ramzūr* 'traffic light'	120	3.6%
Transportation and cars	*traktūrūn* 'all-terrain vehicle'	100	3%
Judaism	*sūkūt* 'Sukkot, Tabernacles (Jewish religious festival)'	75	2.3%

Three of the most frequently used words are the same across the corpora: *ḥarīdīm, ramzūr,* and *trakūtrūn.* Although the WG corpus is smaller, there are more occurrences of the top five words in the WG corpus than there are of the top five words in the Israeli corpus. The most frequent HL in both corpora is *ḥarīdīm* 'orthodox Jews,' with 9.6% occurrence in the WG corpus and 2.8% occurrence in the Israeli corpus. There are, of course, ways of expressing 'orthodox Jews' in Arabic: *yahūd mutazammitūn* and *yahūd mutashaddidūn*. Indeed, the Arabic terms are also found in the corpora. The widespread use of the word *ḥarīdīm* in the Israeli media and in Israeli society overall undoubtedly motivates the frequent usage of the HL in PA, as well as the fact that the use of *ḥarīdīm* enables PA speakers to be culturally and religiously precise.

The second most frequent word in the WG corpus (and overall in the corpora in absolute numbers) is the HL *mishtāḥ* 'pallet.' As we will see, this word is phonologically and morphologically adapted in PA. It is frequently used in spoken PA (Hawker, 2011), and its frequent use in the WG corpus – a written corpus – is a testament to the degree of entrenchment of this HL. Pallets figure prominently in the trade of goods – and news articles related to these exchanges – across borders and checkpoints between the West Bank or Gaza and Israel.

To conclude our overview of HL frequency in the two corpora, Table 11 identifies the most frequently used HLs in each corpus, beyond the top five. As a general guideline, the criterion of approximately 1% frequency or more was used for inclusion; for the Israeli corpus, HLs with 60 occurrences or more were included; for the WG corpus, HLs occurring 30 times or more were included.

The most frequent HLs from each corpus came from multiple semantic categories, although HLs related to the *food* category are dominant. As we mentioned above, there are some frequent HLs shared by both the Israeli and WG corpora: *ʾarnūnā* 'property tax,' *shamīnit* 'cream,' *bajrūt* 'matriculation exams,' *kūbāt ḥūlīm* 'health maintenance organization,' *shnitsil* 'schnitzel,' and *bilifūn* 'cellular telephone.'

Table 11

The Most Frequently Used HLs in the Israeli and WG Corpora, in Descending Order of Frequency

Israeli corpus		WG corpus	
HL	**Absolute frequency**	**HL**	**Absolute frequency**
ʾarnūnā 'property tax'	81	*shnītsil* 'schnitzel'	66
shamīnit 'cream'	72	*kībūr* 'Yom Kippur'	64
kashīr 'kosher'	70	*būylar* 'boiler'	64
lakhmanyūt 'buns'	69	*bilifūn* 'cellular telephone'	62
bajrūt 'matriculation exams'	68	*bajrūt* 'matriculation exams'	60
rūbūtīkā 'robotics'	68	*kūbāt ḥūlīm* 'health maintenance organization'	60
kūbāt ḥūlīm 'health maintenance organization'	68	*ʾarnūnā* 'property tax'	58
shnītsil 'schnitzel'	67	*kanyūn* 'mall'	58
shīkūn 'housing project'	65	*shamīnit* 'cream'	54
bilifūn 'cellular telephone'	64	*kirāmīkā* 'ceramic'	51
sūkūt 'Sukkot, Tabernacles'	63	*makhshīr* 'device'	44
diyālīzā 'dialysis'	60	*mazlīj* 'forklift'	43
barjiyūt 'chicken thighs'	60	*maḥsūm* 'checkpoint'	42
		ʾūrfizyūn 'Eurovision'	42
		bījalā 'pretzels'	37
		blūk 'building block'	35
		shūkū 'chocolate milk'	31

Note. Shaded cells indicate words that appear in both lists.

Most of the high frequency HLs in both corpora have Arabic equivalents. The next section considers the possible motivations for loanwords and the distribution of HLs from the perspective of Arabic equivalents.

5.1.5 Distribution of HLs by Availability of Arabic Equivalent

We begin our discussion with the broad classification adopted by Haspelmath (2009) and mentioned in Chapter 2. We consider loanwords broadly by whether they fill a need and no equivalent word exist in PA (*cultural borrowing* in the terminology of Haspelmath and others) or whether they 'coexist' with Arabic words expressing the same meaning (*core borrowing* in Haspelmath's (and others') terminology). We consider the HLs in our data from the perspective of these broad classifications, and provide examples from the Israeli and WG corpora.

5.1.5.1 HLs that do not have an Arabic equivalent

A small number of HLs in both corpora do not have Arabic equivalents. 24 of the 550 HLs in the Israeli corpus and 18 of 202 HLs in the WG corpus are *cultural borrowings* that refer to objects and concepts that were not previously available in PA and thus do not have Arabic equivalents. These HLs are found in various semantic categories including the *food*, *education and institutions*, *technology*, *economics*, *agriculture*, and *clothing and fashion* categories. Examples of these types of HLs, found in both corpora, are *baflah* 'wafer, waffle,' *jambā* 'sweet pepper,' *shnītsil*[26] 'schnitzel,' *shūkū* 'chocolate milk,' *shamīnit* 'cream,' *hāfūkh* 'coffee with milk,' *taklītān* 'deejay,' *mishtāḥ* 'pallet,' *dīshī* 'lawn,' and *mitḥām* 'site, defined shopping area.' Examples of HLs that are used to fill lexical gaps and which appear in the Israeli corpus only are *tsiydanīt* 'picnic cooler,' *tsaharūn* 'afternoon child care facility,' and *shīnanīt* 'dental hygienist.'

[26] It is recognized that some HLs, such as *shnītsil*, are not of Hebrew origin. Nonetheless, they enter PA from Hebrew, not from the source language that provided the word to Hebrew.

Although HLs that amount to cultural borrowings span a variety of semantic categories, the vast majority in both corpora belong to the *food* category, likely because new terms and products are regularly introduced.

Technically, some of the above borrowings do have Arabic equivalents, but these appear to be terms coined after the adoption of the HL. The HLs are nonetheless more frequently used than the coined Arabic terms intended to take their place, likely because they are more familiar to speakers and because they more accurately capture meaning. Take for example the word *dīshī* 'lawn,' whose meaning in Arabic, according to Sagiv's (2008) dictionary, is *ʿushb ʾakhḍar* or *najīl*. These Arabic equivalents are not really used by PA speakers. The term *ʿushb ʾakhḍar* 'green grass' does not specifically convey 'lawn,' but rather any grass that is green; the Arabic term *najīl* is quite formal, and for this reason is likely not used in spoken PA. Indeed, a less educated reader may be altogether unfamiliar with *najīl;* thus, the HL continues to be preferred by speakers.

Table 12

Examples of HLs with Non-Hebrew Loanword[27] Equivalents from WG Corpus

HLs	Loanword equivalent	Gloss	Source
shnītsil	*ʾaskālūb*	'schnitzel'	French
ʾukhmanyūt	*blūbīrī*	'blueberries'	English
ʾafkāt ʾafiyā	*bīkīnbāwdir*	'baking powder'	English
rakhbāl	*telefrīk*	'funicular railway'	Turkish
būrīkas	*būrīk*	'filled pastry'	Turkish

[27] Hebrew borrowed many words from English, which Arabic in Israel in turn borrowed from Hebrew. In the WG, the words in Table 12 are borrowed directly from English or other languages.

It is worth mentioning that PA in Israel borrows mainly from Hebrew to fill linguistic gaps, whereas in the WG, PA fills linguistic gaps by borrowing from English and other languages, alongside borrowing from Hebrew. Table 12, above, provides examples of loanwords that are used in the WG corpus. It is clear that HLs coexist with loanwords from other donor languages.

5.1.5.2 HLs with an Arabic equivalent

The vast majority (around 95%) of HLs in the Israeli corpus and 91% of HLs in the WG corpus have an Arabic equivalent, indicating that the use of HLs is not merely to fill semantic gaps. According to Amara (2002), HLs can be used to "show off", and he adds that "Hebrew fulfills a major symbolic function among Palestinians in Israel and symbolizes the desire and aspiration to associate oneself with the outside modern world" (Amara, 2002, p. 62). There appear to be several reasons why the HL might be preferred over the Arabic equivalent, beyond prestige reasons. Three principal trends emerged from our study, which we label as follows:

i) Cultural precision;

ii) Formality avoidance;

iii) Interchangeable use.

Cultural precision refers to cases in which the HL enables speakers to make a cultural distinction or to avoid ambiguity. For example, we find the HL *kashīr* 'kosher' used rather than PA *ḥalāl* 'halal.' This enables speakers to distinguish the kosher food of Jews from the halal food of Muslims; the usage of the two terms better reflects distinct dietary laws. Similarly, in Arabic, the word *fiṣiḥ* means 'Passover,' which is a Jewish festival and also means 'Easter,' a Christian festival. The use of the HL *bīsāḥ* 'Passover' may be used to avoid ambiguity between Passover and Easter. The Arabic word for 'dill,' *shabat,* has the same pronunciation as the Hebrew word

shabat 'Sabbath'; the HL for 'dill,' *shamīr,* makes it possible to avoid ambiguity (an example of 'homonymy avoidance' in Haspelmath's (2009) terminology).

In addition, under the label *cultural precision* we include HLs that convey a more precise meaning than the Arabic equivalent; these words contain a nuance appropriate for the context that is missing in the Arabic equivalent. Moreover, in some cases, the Arabic equivalent may also involve using circumlocution or a multiple-word expression, whereas the HL is both more precise and concise. For example, the HL *kūbāt ḥūlīm* 'health maintenance organization' in Arabic is *ṣandūq ʾal-marḍā.* The Arabic equivalent is not widely used, probably because literally it means 'the box of the sick,' which does not quite convey the meaning inherent in the HL. The HL *kīrin binsiyā* 'pension fund' is more common than the Arabic *ṣandūq ʾal-taqāʿud,* which literally means 'the retirement box'; *kīrin hishtalmūt* 'advanced study fund' is more common than the Arabic *ṣandūq ʾal-ʾistikmāl*, literally means 'the box of completion.' These three Arabic examples above all involve using a paraphrase that includes *ṣandūq* 'box'; speakers may view the term as too generic for these concepts. Cases in which the Arabic equivalent includes multiple words instead of one word for the HL include: *kāsbūmāt* 'ATM,' which in Arabic is *ʾal-ṣarrāf ʾal-ālī*; *ḥālā* 'bread used on Sabbath, chala' which in Arabic is *khubz ʾal-sabt,* and *diyālīzā* 'dialysis' which in Arabic is *ghasīl ʾal-kilā.*

The second label, *formality avoidance*, refers to cases in which the Arabic equivalent may be perceived as too formal for the context. Standard Arabic words such as *tasaffuʿ* 'suntanning' and *qasṭarah* 'catheterization' are considered quite formal and may not even be familiar to speakers and readers with limited education; therefore, writers of digital texts may instead opt respectively for the HLs *shīzūf* and *sintūr*.

The third and final label, *interchangeable use,* comprises the vast majority of HLs with Arabic equivalents, both across the written texts in our corpora and within the same text. It is often difficult to gauge why language users prefer the HL or the Arabic equivalent in a particular context. In some cases, it is possible that the use of the HL is motivated by the prestige (see above) of using the Hebrew language, which can symbolize modernization. Interestingly, many of the examples in this group display the HL followed by the Arabic term, in parentheses, as seen in example (2) below from the Israeli corpus. As mentioned in Chapter 2, we are reminded that in an early stage of adoption, loanwords are often treated as foreign words and may include translation (Guilbert (1975) cited in McMahon, 1994). In examples (2) to (6) below, HLs are underlined and Arabic equivalents are bolded, as are the corresponding glosses.

(2) موتاجيم (**علامات تجارية**)

mūtājīm (ʿ***alāmāt tijāriyah***)

‘brand names (**brand names)**’ (plural)

In this example, the HL[28] *mūtājīm* (MH *mutagim*) ‘brand names’ is immediately followed by the Arabic equivalent <علامات تجارية> *ʿalāmāt tijāriyah*. This HL was found in the title of a text. In the rest of the text, the HL and its Arabic equivalent are used interchangeably; the HL is used in both singular and plural, as illustrated in (3) and (4) respectively.

(3) ولا يستبدلها بموتاج

wa-lā yastabdiluha bi-mūtāj

‘He does not replace it with brand name’

[28] Al-Jamal, Y. (2012, January 7). *(علامات تجارية) موتاجيم" [Brand names (Brand names)].* موتاجيم - موقع بكرا [Bokra Website]. https://bokra.net/Article-1156767

(4) يعيش في دائرة **العلامات التجارية**

yaʿīsh fī dāʾirat ʾal-ʿalāmāt ʾal-tijāriyah

'He lives in the brand names circle'

Additional examples of HLs that are used interchangeably in both corpora are *ramzūr* (PA *ʾishārat murūr)* 'traffic light,' *kanyūn* (PA *mujammaʿ tijarī*) 'mall,' *maḥashīf* (PA *ḥāsūb*) 'computer,' and *bajrūt* (PA *tawjīhī*) 'matriculation exams.'

In the Israeli corpus, HLs that are interchangeably used with their Arabic equivalents are at times accompanied by the Arabic counterpart in parentheses, as seen in example (2). It is also possible to encounter the Arabic form first, followed by the HL in parentheses (or quotation marks). And, on occasion, the HL that follows the word in Arabic may even include a gloss in parentheses in Hebrew script. The three possible scenarios are summarized below:

i. HL (Arabic)

ii. Arabic (HL)

iii. Arabic "HL" - Hebrew script

Example (2) corresponds to scenario i); examples (5) and (6) below correspond to scenarios ii) and iii).

(5) زوجتي أضاعت **سلسله** (شرشيرت)

*zawjatī ʾaḍāʿat **silsilah*** (*sharshīrit*)

'my wife lost a **chain** (chain)'

(6) **علاج طبيعي** "פיזיותרפיה" – "فيزوترابيا"

*ʿʿ**ilāj ṭabīʿī*** "*fīzūtrābyā*" - *fizyoterapyah*

'**physiotherapy** "physiotherapy" - physiotherapy'

In sum, there appears to be a relatively small percentage of HLs in both corpora that can be accounted for by positing a need for lexical items, i.e., to fill gaps for terms and concepts for which there appear not to be readily available counterparts in PA. This situation is in line with observations made by Amara (2006a) and Henkin-Roitfarb (2011) on the use of HLs in spoken PA. Most of the data in our corpora shows that HLs are widely used notwithstanding the availability of Arabic equivalents. We proposed above possible reasons for the use of some of these HLs; namely, cultural precision and formality avoidance. The largest group of HLs, though, belong to the category of *interchangeable use,* where a semantic or cultural motivation for the use of the HL is not immediately apparent. Perhaps HLs are used here simply for reasons of prestige. As Henkin-Roitfarb (2011) explains, borrowing Hebrew words can symbolize modernism, education, and social mobility among PA speakers. Henkin-Roitfarb (2011) speculated that the absence of an Academy of the Arabic Language prior to 2007 facilitated the borrowing of HLs. In fact, two academies were established in Israel, one in 2007 and another in 2008. An Arabic language academy was established in Gaza in 2013, and one had been established in the West Bank in 1994 (Lian, 2020). It is doubtful that these academies can curb the use of HLs already entrenched in the spoken language and utilized in written Arabic, but what role they may play going forward in terms of limiting the use of new HLs remains to be seen (for further discussions on Arabic language academies, see Amara, 2018 and Shehadeh, 2019). We know historically from other contexts, e.g., the use of Anglicisms in French, that such efforts can meet with resistance among language users (Hlaing, 2020). In addition, as Henkin-Roitfarb (2011) points out, the borrowing of Hebrew words can also symbolize modernism and education among PA speakers, and one cannot discount the motivational role that prestige can play.

5.1.6 Distribution of HLs by Word Class

In studies of HLs in spoken PA, nouns were reported as the most borrowed category (Amara, 2006a; Henkin- Roitfarb, 2011; Shehadeh, 2019). This is true of loanwords universally (e.g., Haspelmath, 2009; Tadmor et al., 2010), and this is, of course, also true for HLs in both corpora in our study.

Table 13

Relative Distribution of HLs by Word Class in Both Corpora

Word class	Percentage in the Israeli corpus	Percentage in the WG corpus
Nouns	93.8%	96.0%
Adjectives	5.8%	4%
Adverbs	0.4%	0
Total	**100.0%**	**100.0%**

Table 14

Examples of HLs by Word Class from Both Corpora

Parts of speech	Examples
Nouns	*kanyūn* 'mall,' *ʾafarsimūn* 'persimmon,' *naktarīnā* 'nectarine,' *ḥīshbūnīt* 'invoice,' *bilifūn* 'cellular telephone,' *ʾazʿakā* 'alarm,' *maʿarīkhit* 'system,' *mūnīt* 'taxi'
Adjectives	*marīr* 'bitter,' *zakāy* 'eligible,' *ʾūtūmātī* 'automatic,' *kashīr* 'kosher,' *miʿūshān* 'smoked'
Adverbs (Israeli corpus)	*ḥāfāl* 'not worth it,' *mamāsh* 'truly'

HLs found in both corpora are primarily nouns and much less frequently, adjectives. Only two adverbs were found in the Israeli corpus. No verbs or function words were found in the Israeli corpus nor the WG corpus. Table 13 shows the relative distribution of HLs by word class in both corpora. Table 14 includes examples of HLs by word class from both corpora.

Although Hebrew adverbs (used as discourse markers) are widely used in spoken PA, only two adverbs were found in the collected data in the Israeli corpus, provided in the table above. Although we did not encounter verbs in the corpora, the Israeli corpus includes the deverbal adjective HL *hīshlīm* 'completed' (complete-3SG.M.PST) as in example (7) below:[29]

(7) متطلبات الدورة: الحصول على علامة ["هيشليم"] – أي، **استكمل واجبات الدورة.**

mutaṭalibāt ʾal-dawrah: ʾal- ḥuṣūl ʿalā ʿalāmat [*" hīshlīm"*] - *ʾay, ʾistakmal wājibāt ʾal-dawrah*.

'course requirements: obtain a ["completed"] mark – that is, **completed the course's assignments**.'

Some of the HLs collected are acronyms; these are treated as a single word in Arabic, e.g., HL *matnās* 'youth center' (literally: culture, youth and sports center), from Hebrew <מתנ"ס>, pronounced *matnas* and comprised of the initial sound of the following words: *merkaz* 'center,' *tarbot* 'culture,' *noʿar* 'youth,' *sporṭ* 'sport' (literally: culture, youth and sports center). Indeed, PA speakers may be unaware of the phrase that results in the acronym. The acronyms in both corpora function as nouns.

A significant number of HLs in both corpora (110 HLs in the Israeli corpus; 25 HLs in the WG corpus) constitute either noun phrases or compound words; in this study, these examples have been counted as monomorphemic items for the reasons identified below. Some examples of noun phrases made up of noun-adjective sequences are: *shamīnit mitūkā* 'sweet cream,' *ʾūfīk ḥadāsh* 'new horizon' the title of a school reform, *shīkil ḥadāsh* 'new Shekel,' and *yad rīshūnāh*

[29] University of Haifa. (2013, September 11). *مسارات برنامج السنة التحضيرية والدورات التعليمية – מסלולי מכינה וקורסים – המכינה האוניברסיטאית של אוניברסיטת חיפה.[Preparatory year program paths and educational courses.]* https://mechina.haifa.ac.il/2013/08/28/مسارات-برنامج-السنة-التحضيرية-والدور/

'first owner' literally means 'first hand.' Examples of compound words include *bīrūrī līḥim* 'bread crumbs,' *khūmir binyān* 'building material,' *minahīl ʿafūdā* 'foreman, headman,' and *tūkhnīt ḥīsākhūn* 'savings plan.' Each of these examples is treated as a single noun in the texts in which they are found and we do not find evidence of analysis of their component parts. For example, the Hebrew word for 'first' did not occur on its own nor the Hebrew word for 'hand.' The compound words are analyzable in Hebrew, but they do not display evidence of analysis in PA and are not used elsewhere in Arabic.

Interestingly, in a few examples (examples (8) to (10) below) from the Israeli corpus one of the words in the compound is borrowed from Hebrew (underlined) and the other one is borrowed from English:

(8) مجاش تشيبس

majāsh tshībs

'tray of chips'

(9) كورسات رعنون

kūrsāt riʾnūn

'refresher courses'

(10) كومبيوتر نياد

kumbyūtir nayād

'moveable computer' (i.e., 'laptop')

Finally, an interesting expression is found in example (11) below, also from the Israeli corpus. In (11), not only is one word borrowed from English and the other from Hebrew, but structurally it follows the English pattern of adjectives preceding nouns, rather than the opposite, as is the case in Hebrew and Arabic.

(11) فول توسفوت

fūl tūsafūt

'full extensions'

Having considered the distribution of HLs by semantic category, by Arabic equivalent and by word class, we now consider the linguistic adaptation of HLs in PA.

5.2 The Adaptation of HLs in PA

Words borrowed from Hebrew in written PA may be subjected to linguistic adaptation in Arabic in order to make them more "Arabic-oriented" (Dekel & Brosh, 2012). The term adaptation refers to the linguistic changes that loanwords undergo to fit the linguistic system of the recipient language (Haspelmath, 2009; McMahon, 1994). This section examines the different phonological, morphological and semantic patterns of adaptation of HLs in PA. Phonological adaptations are discussed in section 5.2.1 below, morphological adaptations are discussed in section 5.2.2 and the few examples of semantic adaptation found in the data are discussed in section 5.2.3. In each section examples from the Israeli corpus are introduced first, followed by examples from the WG corpus.

5.2.1 Phonological Adaptation of HLs

As discussed in Chapter 3, the fact that MSA and MH have differences in their phonological systems results in HLs undergoing phonological processes such as consonant substitution, vowel alteration and sound deletion to adapt to the phonological patterns of MSA. Some consonant choices are motivated by variations in Hebrew pronunciation; selection based on variations in Hebrew pronunciation is labeled 'alternate consonant realization' in this study. After discussing very briefly cases in which there is no phonological change or adaptation, the study considers the varying types of adaptation found in the data. Consonant change will be

discussed in section 5.2.1.1, alternate consonant realization in section 5.2.1.2, vowel change in 5.2.1.3 and deletion in section 5.2.1.4.

In general, if the Hebrew word consists of phonemes that also exist in the Arabic phonological system, HLs are borrowed with no phonological change. Examples include the HLs *sūbīn* (MH *subin*) 'bran' and *shūm* (MH *shum*) 'garlic.' However, if the Hebrew word includes phonemes that do not exist in the Arabic phonological system, the HL undergoes consonant change.

5.2.1.1 Consonant change

5.2.1.1.1 Sounds not found in the Arabic phonological system: Substitution or simplification

Sounds that are not found in the Arabic phonological system may be replaced by available Arabic equivalents (substitution) or undergo a process of simplification, as explained below. Sounds that are not part of the Arabic phonological system, such as /p, v, g/, are replaced by the closest homorganic or similar equivalent in loanwords (Al-Qinai, 2000). The affricates /ts, tʃ, dʒ/ are also absent from the Arabic phonological system and undergo simplification. Table 15 below displays the representation in written PA of sounds contained in HLs and not found in PA. The table also includes corresponding phonemes. The first three examples are cases of substitution; the latter three are cases of simplification.

As seen in Table 15 below, the lack of the Hebrew consonants /p/, /v/ and /g/ in the MSA inventory results in replacing them with other consonants that share a property with an available sound in Arabic. There appears to be always an attempt to spell the Hebrew words in Arabic script and at the same time to keep them close to the sounds in the Hebrew source. For example, <פ> /p/ is a phoneme in Hebrew, but not in MSA. The closest available options in the phonemic

inventory of MSA are <ب> /b/ or <ف> /f/ in MSA. In most HLs in our corpora, the Hebrew voiceless bilabial stop <פ> /p/ is replaced with its Arabic voiced counterpart <ب> /b/, whether in word-initial, word-medial or word-final position.

Table 15

Hebrew Consonants That Do Not Exist in MSA and Their Orthographic Representation in HLs

MH consonants	Orthographic representation in HLs
<פ> p	<ب> b
	<ف> f
<ב>, <ו> v	<ف> f
	<ب> b
<ג> g	<ج> ʒ
	<غ> ɣ (or ʁ)
	<ك>k
	<ق> q
<צ> ts	<تس> t and s
	<تص> t and ṣ
	< تز> t and z
	<س> s
<צ׳> tʃ	<ش> ʃ
<ג׳> dʒ	<ج> ʒ

Examples from the Israeli corpus include *bīrūrīm* (MH *perurim*) ‘crumbs,’ *brīkhiyūt* (MH *prikhiyot*) ‘rice crackers,’ *kūbūt* (MH *qupot*) ‘cash boxes,’ and *stīryūtīb* (MH *ṣteriʾoṭip*) ‘stereotype.’ Examples from the WG corpus include *barjiyūt* (MH *pargiyot*) ‘chicken thighs’ and *bītā* (MH *pitah)* ‘pita.’ There are some HLs, however, in which /p/ is replaced by /f/ in Arabic, such as in *mūkfāts* (MH *muqpats*) ‘sauté or pan frying.’ It must be mentioned, though, that this particular HL is also spelled *mūkbāts*. It is possible that the visual similarity between Hebrew

written *p* <פּ> (pointed) and *f* <פ> (non-pointed) may be a factor in /p/ being replaced sometimes by /f/ in some HLs.

Another phoneme that does not exist in MSA is the Hebrew phoneme /v/, which is normally replaced by its voiceless counterpart /f/ or by its stop counterpart /b/. Examples of these substitutions are *ḥāfāl* (MH *ḥaval*) 'not worth it,' *rifyūn* (MH *rivyon*) 'buttermilk,' *ʾafkāt ʾafiyā* (MH *avqat afeyah*) 'baking powder,' *tikshūf* (MH *teqshuv*) 'teleprocessing,' *baflah* (MH *vaflah*) 'waffer,' and *rībāt ḥalāb* (MH *ribat ḥalav*) 'dulce de leche.' In some HLs, the substitution of the phoneme /v/ with either /f/ or /b/ is inconsistent. Take for example *shafūʿūt* and *shabūʿūt* (MH *shavuʿot*) 'Shavuot,' in which both /f/ and /b/ are attested in both corpora.

The voiced velar stop /g/ is replaced by the voiced alveopalatal fricative /ʒ/, the voiced velar fricative /ɣ/, or the voiceless counterpart of /g/, /k/, in both corpora. Note that in most regions, voiced uvular fricatives (e.g., ʁ) of the classical Arabic period have become voiced velar fricatives (e.g., ɣ) (Watson, 2007). This is true also of PA, as will be seen ahead. The following examples show the substitution of /g/ with /ʒ/, represented by 'j' in Romanized writing, or with /ɣ/, represented by 'gh' in Romanized form: *jirāfīkā* or *ghirāfīkā* (MH *gerafiqah*) 'graphic arts,' *jūfāynā* or *ghūfāynā* (MH *guvayna*) 'collect call, reverse-charge call,' *barjiyūt* or *barghiyūt* (MH *pargiyot*) 'chicken thighs,' *mazjān* or *mazghān* (MH *mazgan*) 'air conditioning,' and *diyājrāmā* or *diyāghrāmā* (MH *diyagrama*) 'diagram.' The substitution of /g/ by /ʒ/ is more common than the substitution of /g/ by /ɣ/. There are also a few cases in which /g/ is replaced by the voiceless velar stop /k/, such as in the words *mazlīk* (MH *mazleg*) 'forklift' and *sīkāryūt* (MH *sigaryot*) 'cigarettes.'

In two HLs in the Israeli corpus, Hebrew /g/ replaced by /q/ in Arabic: *barqīt* (MH *pargit*) 'chicken thigh' and *bīqalah* (MH *bigaleh*) 'pretzels.' Henkin (2013) suggests that the use of /q/ in

such cases can be attributed to the influence of dialect variation; specifically, the use of /q/ may be the result of the Bedouin variety of PA, which includes /q/. She also suggests that there could be a division between casual speech, with /q/, and more formal registers, which substitute /ʒ/ for /g/. Thus, variation in writing may simply reflect spoken variation.

As seen in Table 15 above, the lack of the affricates /ts/, /tʃ/ and /dʒ/ in the MSA inventory results in their simplification in Arabic. In our corpora, the affricates contained in HLs are often simplified to their fricative component according to their orthographic representation: /ts/ to PA /s/, /tʃ/ to PA /ʃ/ and /dʒ/ to PA /ʒ/.

In MH, the letter <צ> represents the voiceless alveolar affricate /ts/, which is not a consonant in Arabic. According to Henkin (2013), some HLs in spoken Arabic, such in *ṣirīf* (MH *tsrif*) 'wooden shack,' are borrowed with an emphatic non-affricated sibilant. Our corpora include a similar example, the HL *sintūr* (MH *tsintur*) 'catheterization' (found in both corpora). The HL *sīlyāk* (MH *tselyak*) 'celiac' can also be found with the simplified initial consonant /s/, alongside a version that orthographically preserves the Hebrew affricate: *sīlyāk* and *tsīlyāk* (Israeli corpus). Another example from the Israeli corpus is the HL *slaʿūt* (MH *tslaʿot*) 'beef ribs' found with the simplified initial consonant alongside the written version which preserves the Hebrew affricate: *slaʿūt* or *tslaʿūt.*

In many HLs that contain the affricate /ts/, particularly in word-medial position, we observe an effort to represent or preserve in writing the Hebrew pronunciation, i.e., the affricate is represented in written Arabic. In writing, we find /ts/ represented as *ts, tṣ* or *tz*. Examples include *tsīmir* (MH *tsimer*) 'B&B,' *mūtsarīlā* (MH *motsarela*) 'mozzarella,' *shībūts* (MH *shiputs*) 'renovation,' *ʿatṣmaʾī* (MH *ʿatsmaʾi*) 'independent,' and *bār mītzfāh* (MH *bar metsvah*) 'Bar Mitzvah.' The majority of HLs represent the affricate as *ts*. It is possible that these HLs

represented with *ts* are simplified in pronunciation, but ultimately, it is impossible to know from the written form whether some PA speakers indeed pronounce the affricate.

Another example of an effort to maintain the Hebrew affricate in written Arabic can be found in the representation of HLs that contain the sound /tʃ/, which is not native to Hebrew. In the example *tshīlī matūk* (MH *chili matoq*) 'sweet chili,' the Hebrew affricate is preserved in written form. This example is found alongside *shīlī matūk* that indicates simplification. Interestingly, though, the voiced counterpart /dʒ/, found in English loanwords in Hebrew that are subsequently adopted in Arabic, is simplified to /ʒ/, as in *jībūn* 'SUV' in all cases.

Finally, a few HLs include scripts that are not part of written MSA and are borrowed from other languages to represent sounds that are not found in MSA. Some of these scripts are <چ>, which represents the sound /g/, as in the examples دچنيم *di**g**anīm* (MH *deganim*) 'grains' and ريفلكسولوچيا *rīfliksūlū**g**yā* (MH *refleqsologya*) 'reflexology,' <ڤ> which represents the sound /v/ in the example روتيڤ *rūtī**v*** (MH *roṭev*) 'sauce', and <پ > which represents the sound /p/ in the example پروبيوتيكا ***p**rūbiyūtikā* (MH *probiyoṭiqah*) 'probiotic' and أپليكاتسيا *ʾa**p**līkātsyā* (MH *apliqatsyah*) 'application.' These attempts to represent sounds not found in Arabic reflect a level of awareness of the source language from the perspective of text authors; we acknowledge, though, that it is not possible to state with certainty that these spellings are indicative of speakers' pronunciation.

5.2.1.1.2 Additional sporadic consonant changes

There are three sounds that are found in both Hebrew and Arabic but inconsistently change in HLs. The three sounds <ס> s, <שׁ> ʃ and <ר> r are usually substituted by their Arabic equivalent, i.e., <س> s, <ش> ʃ and <ر> r respectively; occasionally, however, these sounds change in HLs and are represented respectively by <ص> $s^{ʕ}$, <س> s and <ن> n. The substitution

of s with $s^{ʕ}$, ʃ with s and r with n can also be found in loanwords that are borrowed into Arabic from other languages. Al-Qinai (2000) gives the following examples: *māstīkhyā* from Greek becomes *maṣtikā* 'mastic,' *qāshīshu* from Syriac becomes *qissīs* 'priest,' and *rahawār* from Persian becomes *rahawān* 'amber' (horse).

As mentioned above, typically Hebrew *s* stays *s* in HLs; examples include *niyār kīsif* (MH *neyar kesef*) 'tin foil,' *basūl* (MH *pasul*) 'unacceptable,' and *būstirīm* (MH *posṭerim*) 'posters.' There are two interesting examples in which the Hebrew alveolar fricative <ס> /s/ is represented by its pharyngealized or emphatic counterpart /$s^{ʕ}$/ in written Arabic, <ص> :*makhṣūm* (MH *maḥsom*) 'checkpoint' and *ṣabārīnā* (MH *sabarinah*) 'savarin' (savarin or type of cake of French origin). Both of these examples are also written with <س>, indicating /s/: *makhsūm* 'checkpoint' and *sabārīnā* 'savarin.' The HL for 'checkpoint' is represented with the pharyngealized *s* twice out of 41 overall occurrences, but the *s* in the HL for 'savarin' is represented with the pharyngealized *s* nine times out of eleven in the corpora. There could be a couple of possible reasons for the emphatic *s* in the HL *makhṣūm* 'checkpoint': perhaps it represents the Ashkenazi pronunciation of the loanword; perhaps it is simply a case of velarization, i.e., continuing from the preceding [x] < MH *ḥ* (progressive assimilation). Our written corpora suggest that /s/ typically does not undergo changes in HLs in Arabic, except in the HL for 'savarin.' It's likely the case that the HL for 'savarin' is being treated as English loanwords with initial /s/ in Arabic, i.e., the initial plain voiceless alveolar fricative is replaced with the emphatic counterpart in Arabic; examples of English loanwords, cited from Salem (2015) include *ṣandal* 'sandal,' *ṣūlū* 'solo,' and *ṣālūn* 'saloon.'

There is one HL in the corpus in which Hebrew /ʃ/ is consistently represented (7 times) by the written form corresponding to /s/ (<س>) in Arabic, although spoken Arabic contains /ʃ/:

ʿadasīm (MH *ʿadashim*) 'small pieces of chocolate candies' (literally 'lentils'). Either it is the case that Arabic speakers indeed use /s/ in the pronunciation of this loanword (examples exist in both corpora), or speakers are saying /ʃ/, but it is not being represented in written form. A possible explanation for the latter scenario is the visual similarity between the orthographic representation of the voiceless alveolar fricative <שׂ> /s/ (the dot on the top left side) and the voiceless postalveolar fricative <שׁ> /ʃ/ (the dot on the top right side) in Hebrew. Writers not too familiar with Hebrew orthography may be capturing the 'wrong' alveolar fricative. Another possible explanation is analogy: influence from the similar-sounding Arabic cognate *ʿadas* 'lentils.'

We find the occasional example of the sonorant /r/ replaced by /n/; we find both the singular HL *ramzūr* and the plural *ramzūrāt* (MH *ramzor, ramzorim* 'traffic light,' singular and plural), with *–r-* in accordance to Hebrew pronunciation, alongside forms with the nasal: *ramzūn* and *ramzūnāt*. In the Israeli corpus, *ramzūn* is far less dominant, appearing nine out of 107 times, whereas in the WG corpus, the form with *-n* is used almost as frequently as the form with final *-r*, occurring in 55 out of 120 instances. In fact, the nasal is relatively more dominant in the plural equivalent. As indicated above, the possible nativized Arabic plural forms are *ramzūnāt* and *ramzūrāt.* In the Israeli corpus, the form with final *–r* is dominant: we find *ramzūrāt* (on nine occasions), or the more Hebrew-like *ramzorim* (once), and *ramzūnāt* on four occasions. In the WG corpus, we only find the form *ramzūnāt* (eight times). Another example of alternating liquids and nasals is also found in the more infrequent HL *marjarīnā* (MH *margarinah* 'margarine'), which alternates with *manjarīnā.*

Henkin-Roitfarb (2011) suggests that the form *ramzūn* and its plural are likely used by monolingual speakers who may not be aware of the MH word, particularly among PA speakers in

the West Bank. Indeed, our data show that forms with the nasal are more dominant in the WG, where speakers interact less with speakers of Hebrew. From a phonological perspective, the appearance of *-n* in *ram-zūn* 'traffic light' may simply be a case of progressive assimilation. The nasal *m* at the end of the first syllable influences the manner of articulation of the upcoming final *-r*. A similar assimilatory explanation may underpin the changing of *–r-* to *–n-* in *man-ja-rīn* 'margarine'; perhaps the initial *m-* exerts pressure on the first *–r-*, or the upcoming *–n* (regressive assimilation), or both. Cases of alternating sonorants are not unheard of in Arabic dialect phonology, as Henkin-Roitfarb documents in connection with Negev Arabic (Henkin-Roitfarb, 2011).

5.2.1.2 Alternate consonant realization

Alternate consonant realization is motivated principally by different Hebrew pronunciations (Mizrahi or Ashkenazi). Variation in pronunciation may also depend on the writer's experience with Hebrew, but this is not known or examined in our study. Using one of the Hebrew pronunciations results in the same HL sometimes spelled according to the Mizrahi pronunciation and other times according to the Ashkenazi pronunciation. For example, in MH pronunciation (which usually follows the Ashkenazi pronunciation), the sounds /ħ/, /tˁ/, /ʕ/ and /q/ are pronounced [x], [t], [ʔ] and [k] respectively (Henkin, 2013). Table 16 below shows Hebrew sounds and their different realization as they appear in HLs. These Hebrew sounds are found in MSA.

In general, Hebrew /ħ/ is represented by the symbol for /ħ/ in Arabic, following the Mizrahi pronunciation. Examples from both corpora include *ḥīshbūnīt* (MH *ḥeshbonit*) 'invoice,' *ḥamamūt* (MH *ḥamamot*) 'greenhouses,' *maḥlīf* (MH *meḥlaf*) 'junction,' and *miklaḥūn* (MH *miqlaḥon*) 'shower stall.' Both corpora include a few examples that reflect the Ashkenazi

pronunciation where the sound /ħ/ is represented by the character for /x/. Examples from the Israeli corpus are *ʾakhūz* (MH *ʾaḥuz*) 'percentage,' *bīrūrī līkhim* (MH *perure leḥem*) 'bread crumbs,' *khūmarīm* (MH *ḥomarim*) 'materials,' *khatsīl* (MH *ḥatsil*) 'eggplant,' *bakhīt* (MH *paḥit*) 'small can,' and *takharūt* (MH *taḥarot*) 'laces.' Examples from the WG corpus include *makhsūm* (MH *maḥsom*) 'checkpoint,' *khākhām* (MH *ḥakham*) 'sage' (of Talmud), and *khūmir binyān* (MH *ḥomer binyan*) 'building materials.' In each corpus, some HLs are at times written according to the Mizrahi pronunciation and at times in alignment with the Ashkenazi pronunciation, for example *laḥmanyū*t or *lakhmanyūt* in written Arabic (MH *laḥmanyo*t) 'bread rolls' and *bīsāḥ* or *bīsākh* (MH *pesaḥ*) 'Passover.' As Henkin (2013) mentions, the use of the Ashkenazi pronunciation is likely the result of exposure to the Ashkenazi pronunciation among PA speakers who live in mixed cities.

Table 16

Hebrew Consonants (That Also Exist in MSA) and Their Realization

Hebrew sounds	Realized as
<ח> ħ	<ح> ħ
	<خ> x
<ע> ʕ	<ع> ʕ
	<ء> ʔ
<ט> tˤ	<ط> tˤ
	<ت> t
<ק> q	<ق> q
	<ك> k

In general, Hebrew <ע> /ʕ/ is represented by the symbol for <ع> /ʕ/ in Arabic. Examples from both corpora are: *ʿūjūt* (MH *ʿugot*) 'cakes,' *ʿūkīf* (MH *ʿoqef*) 'bypass,' and *ʾazʿakā* (MH *ʾazʿaqah*) 'alarm.' In the Israeli corpus, the HL *batsīk ʾalīm* (MH *batseq ʿalim*) 'puff pastry' is

written in a manner that reflects the Ashkenazi pronunciation, i.e., the sound /ʕ/ is represented by the character for the sound /ʔ/, which is typical of Ashkenazi Hebrew. In fact, it is clear that the Ashkenazi pronunciation is perceived as prestigious, since we find (in the Israeli corpus) evidence of hypercorrection in its direction: instead of reflecting the glottal stop /ʔ/ in the HL for 'truck,' we find it written *masaʿīt* (MH *masaʾit*), with the glottal represented by the character for /ʕ/ - i.e., where the Hebrew consonant <א> is changed to <ع> in written Arabic (for additional examples of this type of hypercorrection in spoken PA, see Henkin-Roitfarb, 2011).

The sounds /tˤ/ (often transliterated *ṭ,* the 'emphatic' *t*) and /t/ were distinct phonemes in Biblical Hebrew, but in MH, they have merged into the sound /t/ (depharyngealization), although written Hebrew continues the biblical distinction. As expected, in written Arabic, HLs containing the sound /t/ are typically represented with the Arabic symbol for /t/, e.g., *bītā* (MH *pitah*) 'pita,' *mitḥām* (MH *mitḥam*) 'site, defined shopping area,' *ʾūtūmātī* (MH *oṭomaṭi*) 'automatic,' *tiftūf* (MH *ṭifṭuf*) 'dripping,' and *bāntūmīmā* (MH *panṭomimah*) 'pantomime.' However, the picture that emerges from our corpora is somewhat more complex. Since some Arabic writers may be aware of the distinction in written Hebrew, and since Arabic has both pharyngealized /tˤ/ and plain /t/ in spoken and written modes, at times we find the pharyngealized /tˤ/ also represented in written Arabic. We cite the following examples from the corpora: *rūtif* or *rūṭif* (MH *roṭev*) 'sauce,' and *tūfis* or *ṭūfis* (MH *ṭofes*) 'form.'

Although there is a distinction between <ק> /q/ and <כ> /k/ in written Hebrew, MH speech does not make this distinction. As expected, most HLs display <ك> /k/ to represent written Hebrew <ק> and <כ>. Examples from the corpora include *kāsbūmāt* (MH *kaspomaṭ*) 'ATM,' *kashīr* (MH *kasher*) 'kosher,' *mitkān* (MH *mitqan*) 'device,' *blūk* (MH *bloq*) 'building block,' and *kablān* (MH *qablan*) 'contractor.' Nevertheless, there are some HLs that can appear

either with the Arabic equivalent of /k/ (<ك>) or /q/ (<ق>), the latter ensuring alignment with Hebrew orthographic practice, e.g., *marāk ʿūf* or *marāq ʿūf* (MH *maraq ʿof*) 'chicken flavoured bouillon,' and *naknīkiyūt* or *naqniqiyūt* (MH *naqniqiyot*) 'sausages.' Instances in which the HL is correctly represented according to Hebrew writing are suggestive of particular writers' familiarity with written Hebrew; if this were not the case, we would expect to find the occasional instance of Hebrew <כ> *k* also be represented by <ق> *q*; indeed, no such examples appear in the corpora.

5.2.1.3 Vowel change

Written Arabic in websites is not vowelized, i.e., short vowels are not represented; therefore, HLs in digital texts only make use of consonants and long vowels. The use of vowels in HLs in our corpora is described in more detail below; of course, it is necessarily limited to a discussion of long vowels given the constraints of the written corpora.

In the same way that consonants change in HLs to fit the consonants available in MSA, HL vowels are limited to the vowels of MSA: three short vowels, /a/, /i/ and /u/, their corresponding three long vowels, /a:/, /i:/ and /u:/; and two diphthongs, /aw/ and /aj/. Arabic lacks the Hebrew mid vowels /e/ and /o/. To follow the sound patterns of PA, vowels in HLs generally either undergo raising and/or lengthening. Vowel change occurs in HLs containing vowels that do not exist in the phonology of MSA (i.e., /e/ and /o/), and although there are general trends, as Henkin (2013) points out, in spoken PA, there is much variation in the pronunciation of loanwords containing these sounds. We find evidence of this variation also in the written forms of HLs: an example from the Israeli corpus is *shīfīm* or *shifīm* (MH *shefim*) 'chefs.'

The data demonstrate a tendency to replace the Hebrew vowel /e/ with the (high front) Arabic long vowel /i:/ when adapting HLs, e.g., *shnītsīlūnīm* (MH *shnitselonim*) 'small pieces of schnitzel' and *jānīnīt* (MH *gannenet*) 'kindergarten teacher.' In parallel fashion, the Hebrew mid back vowel /o/ is typically substituted by the corresponding (high back) Arabic long vowel /u:/, e.g., *ṭūfis* (MH *ṭofes*) 'form.'

Although the tendency is for MH /e/ and /o/ to be replaced by /i:/ and /u:/ respectively, in some instances, particularly in unstressed syllable, these vowels are substituted by /a:/. Examples from the corpora include: *kālūrābī* (MH *qolerabi*) 'kohlrabi, turnip cabbage,' *kūsmāt* (MH *kusemet*) 'buckwheat, kasha,' *būmālīt* (MH *pomelit*) 'oroblanco,' and *bījalā* (MH *bigaleh*) 'pretzels.' It is possible that these HLs are written phonetically and represent what writers perceive speakers to be saying. Given the written nature of our corpora, this is not something that can be definitively explained. We do know that there is a tendency to replace many English vowels in loanwords with /a/ or /a:/ in spoken Jordanian Arabic; examples (taken from Al-Saidat, 2011) include: printer > *brintar*, camera > *kāmara*, doctor > *daktūr* and centimetre > *sāntimitir*. Perhaps the examples in our corpora reflect a similar, if less widespread, phenomenon.

Vowels are lengthened in HLs when they are in a stressed syllable in Hebrew; stress in HLs tends to follow Hebrew stress patterns. This tendency has also been observed by Mahajna (2019) and Henkin (2013). According to Mahajna (2019), HLs in Arabic preserve the Hebrew stress, and by doing so, stressed vowels in Hebrew undergo lengthening in Arabic. This confirms previous research by Henkin (2013) which had found that stressed Hebrew vowels undergo vowel lengthening in MSA. We see many examples of this phenomenon in the corpora, including the following: (*a*>*ā*) ***mā***ʿ*am* (MH ***ma***ʿ*am*) 'value added tax' and *sha**lāṭ*** (MH *sha**laṭ***) 'remote

control'; (*e, i>ī*) *sha**mī**nit* (MH *sha**me**net*) 'cream' and *mina**hīl*** (MH *mena**hil***) 'manager'; and (*o, u>ū)* ***tsū**mīt* (MH ***tso**met*) 'intersection' and *ba**sūl*** (MH *pa**sul***) 'unacceptable.'

As noted above, most HLs preserve Hebrew stress placement. As discussed in Chapter 3, in MH stress typically falls on the final syllable of the word, which is not typical of MSA; when a suffix is added to a Hebrew word, the stress accordingly shifts to the suffix, e.g., *da**var*** 'thing' *deva**rim*** 'things' (Coffin-Amir & Bolozky, 2005). Examples from the data that show the preservation of MH word-final stress include *mikhla**lāh*** (MH *mikhla**lah***) 'college' and *sa**lāṭ*** (MH *sa**laṭ***) 'salad.' In keeping with MH, when a suffix is added to a word, stress shifts to the suffix, maintaining final-syllable stress: *maʿū**nūt*** (MH *maʿo**not***) 'dorms,' *ʿūji**yūt*** (MH *ʿugi**yot***) 'cookies' and *maḥsū**mīm*** (MH *maḥso**mim***) 'checkpoints.' Penultimate stress is also found in MH, but is largely circumscribed to nouns called segolate; their pattern is ***Ce**CeC,* e.g., ***ye**led* 'boy' (Coffin-Amir & Bolozky, 2005). PA maintains the MH stress pattern here as well by lengthening the stressed vowel; examples include *maʿa**rī**khit* (MH *maʿa**re**khet*) 'system,' *mak**lī**dit* (MH *miq**le**det*) 'keyboard,' ***rī**shit* (MH ***re**shet*) 'net,' *shar**shī**rit* (MH *shar**she**ret*) 'chain,' *ʿū**zī**rit* (MH *ʿo**ze**ret*) 'assistant,' and ***lī**ḥim*[30] (MH ***le**ḥem*) 'bread.' Loanwords in Hebrew too tend to preserve the stress of the source language. This can be seen in the penultimate stress pattern of the borrowed word *avo**ka**do* 'avocado' and in the antepenultimate stress of the loanword ***te**lefon* 'telephone' (Bat-El et al., 2019). HLs that preserve the penultimate or antepenultimate stress of the source language also preserve their stress when borrowed in PA: *shi**bā**khṭil* (MH *she**pa**khṭel*) 'spatula,' ***bī**jalā (**bi**galeh)* 'pretzels,' and ***shū**kūlād* (MH ***sho**kolad*) 'chocolate.' It is also worth noting that, in Hebrew, the stress in borrowed words and acronyms remains unchanged (with respect to the

[30] This HL was found also written as *laḥm,* with syllable reduction, which in Arabic means 'meat'; it is a curious example of vowel deletion given that the resulting monosyllable could cause ambiguity for readers.

source language) even when a suffix is added, e.g., ***job*** 'job' and its plural ***jo****bim* 'jobs', and *ma****kam*** 'radar' and its plural *ma****ka****mim* 'radars' (Coffin-Amir & Bolozky, 2005). Loanwords and acronyms in Hebrew, which are in turn borrowed in PA, also preserve MH stress placement, as demonstrated in HLs such in *sī****jār*** (MH *si****gar***) and the plural *sī****jā****rīm* (MH *si****ga****rim*) 'cigars' (pastry rolls) and in *mat****nās*** (MH *mat****nas***) and the plural *mat****nā****sim* (MH *mat****na****sim*) 'youth center (literally: culture, youth and sports center)'.

Before concluding our observations on vowel lengthening and stress placement in HLs, it is worth noting that, in a handful of cases, vowels appear to be lengthened in written representations of HLs not to indicate stress, but for ease of reading. Examples include the MH segolate nouns *teqshoret* 'communication' and *reshet* 'net,' which are respectively written in our corpora as *tīk****shū****rīt* instead of *tik****shū****rit,* and ***rī****shīt* rather than ***rī****shit*. Since short vowels are not indicated in written MSA on websites, representing these words with an ***-ī-*** might be a way of ensuring that the correct unstressed vowel is selected. Ultimately, though, since we are relying on written texts, we can only indicate what written practices seem to suggest without being able to confirm the pronunciation in all cases.

5.2.1.4 Deletion

The data collected for this study include a few HLs that illustrate the deletion of sounds. An instance of word-final deletion occurs in the example *taḥanā dīlik* (MH *taḥanat deleq*) 'gas station' (Israeli corpus), where the –t represents the Hebrew construct state; final –t deletion in this example is likely the result of analogy: there are other borrowings with *tahanah* 'station' where the word is followed by an adjective (and thus not in the construct state), e.g., *taḥanā mirkazīt* (MH *taḥanah merkazit*). Another possible explanation (assuming that PA speakers are

unaware of the Hebrew construct state) is that only one of the alveolar/dental stops (MH -t#d-) across the word boundary is perceived.

Another case of deletion occurs in *ʿatnāy* (MH *ʿal-tnay*) 'conditional' instead of *ʿal tnāy ʿifrīt* (MH *ʿal tnay ʿevrit*) 'on condition Hebrew (literally)' (a university entrance exam). In the first HL *ʿatnāy,* in addition to the deletion of the consonant *l*, the two words in Hebrew (MH *ʿal* (preposition 'on') *tnay* (noun 'condition')) are represented as one word, perhaps by analogy with the spoken PA, where the Arabic preposition *ʿala* is simplified to *ʿa*. Another possible explanation is that the /l/ of the MH preposition is simply treated as the Arabic definite article /ʔal/ in which the lateral assimilates completely to the subsequent alveolar (or alveopalatal) consonant, e.g., *ʻal tuffāḥah* 'the apple' > *attuffāḥah*.

The deletion of the glottal stop /ʔ/, as in some cases of PA (particularly in the WG corpus) for MH *afarsimon* 'persimmon', i.e., *farsimūn* (alongside *ʾafarsimūn*), is interesting. We note that this only appears to happen when writing a MH loanword with a coda-less initial syllable beginning with a-; in borrowings with initial a- where the syllable contains a coda consonant, the initial vowel is preserved in writing and is preceded by the glottal stop, e.g., *ʾadrīkhalūt* (MH *adrikhalut*) 'architecture' and *ʾantībiyūtīkā* (MH *anṭibeyoṭiqah*) 'antibiotic.' It is worth mentioning that PA dialects include cases of initial glottal stop and short vowel loss, such as in *snān* < *ʾasnān* 'teeth,' *wlād* < *ʾawlād* 'boys,' and *ṣhāb* < *ʾaṣhāb* 'friends,' even when the resulting form consists of a complex onset, which Arabic disprefers (see Abu-Salim, 1982, cited in Abu-Guba, 2016).

In sum, since there are differences between the phonological systems between the two languages, HLs from the two corpora may undergo consonant and/or vowel changes to fit the MSA phonological system, which is reflected in the written form of HLs. Overall, HLs adapt to

the Arabic phonological system when it comes to segments, e.g., the substitution of Hebrew sounds with comparable Arabic sounds or the simplification of Hebrew affricates. However, when it comes to stress placement, the written record of HLs suggests preservation of Hebrew stress; stressed vowels in HLs are often represented as long vowels in Arabic script, likely as an attempt to preserve the stress placement in the source language.

As expected, there is an overall lack of consistency in the spelling of HLs; this is not unusual when dealing with non-standardized forms. We note however the following tendency in our two corpora. In the Israeli corpus, the spelling of HLs appears to rely mostly on written Hebrew, probably because PA speakers are generally more aware of written MH. In the WG corpus, on the other hand, there appears to be more of a reliance on spoken Hebrew (particularly Ashkenazi pronunciation) rather than on written Hebrew.

5.2.2 Morphological Adaptation of HLs

Just as HLs may adapt to the phonological patterns of MSA, HLs may also adapt morphologically along a continuum from fully adapted to non-adapted to MSA. HLs may undergo morphological adaptation to achieve harmony with the morphological patterns of MSA. In this section, four morphological adaptations will be presented: inflection for gender and number, derivation (root extraction processes), and clitics.

5.2.2.1 Grammatical gender in HLs

In MSA, nouns and adjectives are inflected for gender: masculine or feminine. All HLs are assigned a gender as well. In our corpora, there appear to be three factors that can determine the gender of the HL: the natural gender, phonetic shape and analogy based on the influence of cognates.

For HLs that designate animate referents, the gender of the loanword corresponds to natural gender (biological sex). The pattern is more readily observed in pairs of animate referents from the corpora that display both a masculine and feminine version of the HL: *handasaʾī* (MH *handesaʾi*) 'practical engineer (masculine),' *handasaʾīt* (MH *handesaʾit*) 'practical engineer (feminine),' and *bsīkhūlūj* (MH *psikholog*) 'psychologist (masculine),' *bsīkhūlūjīt* (MH *psikhologit*) 'psychologist (feminine).'

Gender assignment in HLs that designate inanimate referents is based largely on phonetic shape. Most HLs seem to assign gender based phonetic ending of the HL. Typically, Arabic treats loanwords that end with *-a* as feminine (written or perceived), while loanwords that end with *-u* or *-i* are generally assigned the masculine gender (see Badarneh, 2007, for a general discussion of gender assignment to loanwords in Arabic). Examples of HLs that end with *–a* and are assigned the feminine gender (represented as *-ā*) in PA are: *ʾatlatīkā* (MH *atleṭiqah*) 'athletics,' *ʾarizā* (MH *arizah*) 'packing,' *mīdūzā* (MH *meduzah*) 'jellyfish,' *mījrīnā* (MH *migrenah*) 'migraine,' *rūbūtīkā* (MH *roboṭiqah*) 'robotics,' *dīsliktsyā* (MH *disleqtsyah*) 'dyslexia,' and *jlīdā* (MH *glidah*) 'ice cream.' Examples of masculine HLs that end with *-u* and *-i* include the following: *kāshyū* (MH *qashyo*) 'cashew,' *shūkū* (MH *shoqo*) 'chocolate milk,' *kirimbū* (MH *qerembo*) 'chocolate-coated marshmallow treats,' *ʾūtūmātī* (MH *oṭomaṭi*) 'automatic,' *stāndartī* (MH *sṭandarṭi*) 'normal,' and *bsīkhūmitrī* (MH *psikhumeṭri*) 'psychometric entrance test.'

Another factor in gender assignment in inanimate HLs appears to be the role played by the gender of the cognate in Arabic (analogy). A few HLs are assigned the feminine gender in accordance with their PA equivalents. For example, the HL *salāṭ* 'salad' is feminine in accordance with the PA equivalent, *salaṭah*, even though the Hebrew source word is masculine

(MH *salaṭ*). The same is true for the HL *shūkūlād* (MH *shūkūlād*) 'chocolate' which has the feminine equivalent in the PA cognate *shūkūlāṭah.*

There are two exceptions to the above that are worth noting. The HL *dīshī* (alongside *dīshih*) 'lawn' is interpreted as feminine in PA, though it is masculine in Hebrew. In similar fashion, the HL *bījalā* (alongside *bījalah*) 'pretzels' is also assigned the feminine gender in PA, although it is masculine in Hebrew. Both examples are in fact pronounced with a final [–e] in MH: *deshe* and *bigale.* These HLs are likely assigned feminine gender on account of their pronunciation: the final [e] heard in the MH pronunciation is interpreted as feminine. As Badarneh (2007) explains, there is a tendency in colloquial Arabic to realize the feminine ending *-ah* at times as *–eh.* It would be understandable, then, if PA speakers perceive the [–e] in these HLs as indicative of the feminine gender.

5.2.2.1.1 The written representation of the feminine marker

In MH, the masculine is unmarked, as is the case in MSA, and the feminine is usually marked with the suffixes /-h/ and /-t/. In MSA, masculine singular forms are unmarked, and feminine singular forms can take the feminine singular suffix *–at* (called *tā' marbūṭah* 'tied T') or its variants *-ah* or *-a*; while the second variant is not represented in our corpora, since short vowels are not indicated, the *-ah* is represented through the presence of written *–h* (for additional details on gender markings in MSA, see Chapter 3). HLs that are assigned feminine gender in PA may preserve the Hebrew gender suffix or display an Arabic suffix, as detailed below. The examples below include both animate and inanimate nouns, and corresponding adjectives, and are drawn from both corpora.

There are cases in which the Hebrew feminine marker *–h* or *–t* is preserved in the HL, such in *tūkhnāh* (MH *tokhnah*) 'software,' *mikhlalāh* (MH *mikhlalah*) 'college,' *shīnanīt* (MH

shinanit) ‘dental hygienist,’ *ḥīshbūnīt* (MH *ḥishbonit*) ‘invoice,’ *zakʾīt* (MH *zakaʾit*) ‘eligible,’ *jānīnīt* (MH *ganenet*) ‘kindergarten teacher’ and *sayāʿat* (MH *sayyaʿat*) ‘assistant.’

When feminine HLs do not display the Hebrew feminine suffix *–h*, they tend to display the long vowel *-ā,* reflecting what they perceive to be the Hebrew pronunciation, as in *tīʾūryā* (MH *teʾoryah*) ‘theory driving test,’ *ʾambāṭyā* (MH *ambaṭyah*) ‘bathtub; bathroom,’ and *minhālā* (MH *minhalah*) ‘administration.’

A limited number of HLs in the corpora are found in some instances with the Hebrew feminine suffix (*-h*) and in other instances with the long vowel *-ā* (according to the perceived Hebrew pronunciation of the Hebrew suffix *-ah*). The word for ‘sweet pepper’ (MH *gambah*), for example, appears as either or *jambah* or *jambā*. It is not surprising that there is some written variation in such examples, given that both forms indicate the same pronunciation.

There are a few cases in which the Hebrew feminine suffix *-t* is replaced by the Arabic feminine suffix *-ah* in animate nouns; it is possible that these examples are influenced by the alternate Hebrew pronunciation in *–ah,* for example *ḥarīdiyah* (MH *ḥaredit or ḥarediyah*) ‘orthodox Jew,’ *ʾashkināziyah* (MH *ashkenazit* or *ashkenaziyah*) ‘Ashkenazic Jew of Western origin.’

5.2.2.2 Number in HLs

Number assignment in loanwords is another inflectional aspect of morphological adaptation. In keeping with Arabic morphology, we find singular forms unmarked for number, as in *shalāṭ* (MH *shalaṭ*) ‘remote control’, and dual and plural forms marked by a few types of suffixes. This sub-section presents HLs that are dual or plural. The dual and plural are marked

with suffixes for nominative, accusative and genitive cases. In addition, plural forms are divided into two categories in MSA: sound plural and broken plural (see Chapter 3).

5.2.2.2.1 Dual suffixes in HLs

In Arabic, the use of a dual marker is obligatory to describe items that come in twos. With the exception of items that come in pairs (e.g., eyes, pants), MH does not have an obligatory dual suffix (see Chapter 3). Instead, nouns in MH that refer to two items include the word for the number two: *shney* for masculine nouns or *shtey* for feminine nouns. Table 17 shows all the examples of dual suffixes attached to HLs, together with their corresponding singular forms, that are found in the corpora. The dual forms have two suffixes one for nominative, *-ān* and another suffix, *-ayn*, for accusative and genitive cases (which share a single suffix).

The examples in Table 17 show full adaptation into Arabic structure in terms of dual number; HLs are treated as native PA words in terms of this aspect of number morphology. Of course, this is not surprising given the absence of an equivalent suffix in words of Hebrew origin.

Table 17

Dual Suffixes in HLs by Gender and Case

HL (singular)	Gender	Case	HL (dual)
ḥarīdī (MH *ḥaredi*) 'orthodox Jew'	M	Nominative	*ḥarīdiyān* (MH *shney ḥaredim)* 'two orthodox Jews'
ḥarīdīt (MH *ḥaredit*) 'orthodox Jew'	F	Nominative	*ḥarīdiyatān* (MH *shtey ḥarediyot*) 'two orthodox Jews'
mishṭāḥ [31] (MH *mishṭaḥ*) 'pallet'	M	Nominative	*mishṭāḥān* (MH *shney mishṭaḥim*) 'two pallets'

[31] The HL for 'pallet' is used consistently with the Arabic accusative case *-an* when following the number, for example 11 *mishṭāḥan*, 27 *mishṭāḥan* and 210 *mishṭāḥan.* It appears to be well integrated into Arabic morphology.

HL (singular)	Gender	Case	HL (dual)
mishṭāḥ (MH *mishṭaḥ*) ‘pallet’	M	Accusative/ Genitive	*mishṭāḥayn (*MH *shney mishṭaḥim*) ‘two pallets’
bilifūn (MH *pelefon*) ‘cellular telephone’	M	Accusative/ Genitive	*bīlīfūnayn* (MH *shney pelefonim*) ‘two cellular telephones’
makhshīr (MH *makhshir*) ‘device’	M	Accusative/ Genitive	*makhshīrayn* (MH *shney makhshirim*) ‘two devices’

5.2.2.2.2 The plural marker in HLs

HLs from the corpora show three types of plural markers: the Hebrew plural morpheme, the Arabic sound plural (both feminine and masculine) and the Arabic broken plural. Many HLs preserve the regular Hebrew plural, i.e., the Hebrew word is borrowed along with the Hebrew plural morpheme: /-im/ for masculine and /-ot/ for feminine. Examples of HLs with the masculine plural Hebrew suffix *-im* are *mūtajīm* (MH *mutagim*) ‘brand name products,’ *takhshītīm* (MH *takhshiṭim*) ‘pieces of jewelry,’ *matnāsīm* (MH *matnasim*) ‘community centers,’ and *maḥzīkīm* (MH *maḥziqim*) ‘key chains.’ Examples of HLs with the feminine plural Hebrew suffix, realized as *-ūt* in PA, are *hazmanūt* (MH *hazmanot*) ‘orders,’ *miltsariyūt* (MH *meltsariyot*) ‘waiters,’ and *masīkhūt* (MH *masikhot*) ’masks.’

Table 18

Hebrew Suffixes with HLs of Non-Hebrew Origin

HL suffix	Gender	HLs (plural)
-im	M	*flāyarīm* (MH *flayerim*) ‘flyers,’ *stājīrīm* (MH *stajerim*) ‘interns,’ *sbūtīm* (MH *spoṭim*) ‘spotlights,’ *tsīmirīm* (MH *tsimerim*) ‘B&Bs,’ *kayākīm* (MH *qayaqim*) ‘kayaks’
-ot	F	*sījāryūt* (MH *sigaryot*) ‘cigarettes,’ *tūnīkūt* (MH *tuniqot*) ‘tunics’

Table 18 contains HLs whose origins are languages other than Hebrew. Given that they are borrowed in PA together with a Hebrew plural suffix, it is undoubtedly the case that they are borrowed from Hebrew, rather than another language.

In the corpora we also find HLs displaying an Arabic plural, the "sound plural" with masculine morphemes *-ūn* (nominative) and *-īn* (accusative/genitive) and the feminine morpheme *-āt* (for nominative, accusative and genitive). Only one morpheme covering all three cases is indicated for the feminine plural, since we only find the end *-āt,* represented in the corpora. The final syllable in each of the nominative case *-ātu* and the accusative and genitive *-āti* contain short vowels; it is thus not represented in written form. The written feminine suffix *-āt*, then, stands for any of the three cases. Table 19 below provides some examples of loanwords that take the sound plural in written PA.

Table 19

Arabic Sound Plural Suffixes with HLs

HL suffix	Case	Gender	HLs (plural)
-ūn	Nominative	M	*handasaʾiyūn* (MH *handesaʾim*) 'practical engineers,' *ḥarīdiyūn* (MH *ḥaredim*) 'orthodox Jews'
-īn	Accusative, Genitive	M	*handasaʾiyīn* (MH *handesaʾim*) 'practical engineers,' *ḥarīdiyīn* (MH *ḥaredim*) 'orthodox Jews'
-āt	Nominative, Accusative, Genitive	F	*ʾashkināziyāt* (MH *ashkenaziyot*) 'Ashkenazic (person) (Jews of East European or Western origin),' *ḥarīdiyāt* (MH *ḥarediyot*) 'orthodox Jews'

Table 19 above shows that there is an attempt to write HLs with cases whether they are nominative, accusative, or genitive. To the author's knowledge, the masculine sound plural in HLs has not yet been observed in written Arabic. In addition, Table 19 also shows that the

masculine sound plural suffix is attached *only* to animate referents, while the feminine sound plural may be attached to animate referents or to inanimate referents of either gender. Indeed, the feminine plural marker *-āt* is the default plural suffix for both masculine and feminine inanimate loanwords in Arabic. Examples from the corpora are: *shīkūnāt* (MH *shikunim*) 'housing projects,' *manūfāt* (MH *manofim*) 'cranes,' *trāktūrūnāt* (MH *ṭraqṭoronim*) 'all-terrain vehicles,' *kanyūnāt* (MH *qanyonim*) 'malls,' and *būylarāt* (MH *boylerim*) 'boilers.'

As indicated above, the feminine plural marker *-āt* is the default plural suffix for borrowed inanimate nouns and characterizes, in my view, an intermediate level of integration. Talmon (2000) gives the example of Hebrew *tsimer* from German *Zimmer* 'room-to-let'; the Hebrew plural *tsimer-im* gradually shifted to *tsimir-āt* in spoken PA, i.e., gradually underwent integration into Arabic morphology. In both of the corpora for this study, we observe the Hebrew plural used alongside the Arabic plural, not only in forms such as *tsimer,* but also in other HLs*:* *maznūnīm* or *maznūnāt* (MH *miznonim*) 'buffets,' *handasaʾīm* or *handasaʾiyūn* (MH *handesaʾim*) 'practical engineers,' and *ḥarīdiyūt* or *ḥarīdiyāt* (MH *ḥarediyot*) 'orthodox Jews.'

According to Henkin-Roitfarb (2011), the feminine plural marker *-āt* in loanwords in spoken PA is typically used by monolingual speakers and represents a lower register. We cannot confirm or negate this through our written texts. It is also worth noting that in language acquisition studies, it has been observed that young children generalize the feminine sound plural in *-āt* (Saiegh-Haddad et al., 2012). What we note is that, in our corpora, there appear to be occasions in which authors try to avoid using the plural *-āt*. This is achieved by having an appropriate Arabic lexical item assume the plural marker and using the HL as a modifier, e.g., the expression for 'matriculation exams' is pluralized by using the word *ʾimtiḥānāt* 'exams' in the plural (an Arabic word) before the HL, used as a modifier, i.e., *ʾimtiḥānāt ʾal-bujrūt* (literally:

the exams of the matriculation). Perhaps this is a strategy to avoid using the sound plural *-āt* with the HL.

As discussed in Chapter 3, the plural in MSA includes the broken plural, i.e., the process (often called interdigitation) by which one of different types of vowel combinations is inserted around a consonantal root to create a morphologically related word, including the plural. An often-cited example the plural of *kitāb* 'book,' which is *kutub* (cf. Zoubir, 2010). In our corpora, we observe the broken plural used with four HLs, identified in Table 20 below.

Table 20

Arabic Broken Plural Adaptation in HLs

HL (singular)	Gender	HL (broken plural)	Arabic template and templatic examples
maḥsūm (MH *maḥsom*) 'checkpoint'	M	*maḥāsīm* (MH *maḥsomim*) 'checkpoints'	*CaCa:Ci:C* *makātīb* 'letters'
mishtāḥ (MH *mishṭaḥ*) 'pallet'	M	*mashātīḥ* (MH *mishṭaḥim*) 'pallets'	*CaCa:Ci:C* *mafātīḥ* 'keys'
kumkum (MH *qumqum*) 'kettle'	M	*kamākim* (MH *qumqumim*) 'kettles'	*CaCa:CiC* *janādib* 'grasshoppers'
tandar (MH *tender*) 'pickup truck'	M	*tanādir* (MH *tenderim*) 'pickup trucks'	*CaCa:CiC* *matājir* 'stores'

The singular HL *maḥsūm* (MH *maḥsom*) 'checkpoint' can take the broken plural *maḥāsīm* (MH *maḥsomim*) 'checkpoints' by analogy with words following the same templatic pattern in Arabic, e.g., *maktūb* > *makātīb.* The four examples in the table above follow two plural templates (two examples per template); these templates are typically used when words do not readily align with templates built on tri-consonantal roots (Hafez, 1996). More important, as Laks (2014) explains for foreign loanwords in Palestinian and Jordanian Arabic, the selection of these

particular templates is "not random" and is motivated by syllabic structure and stress considerations. As Laks mentions, typically, monosyllabic and disyllabic borrowings are subject to a templatic (broken plural) pluralization. In our data we find only disyllabic HLs that admit the broken plural. For example, the HL *mishtāḥ* (MH *mishṭaḥ*) 'pallet' has the same syllabic structure – *CVCCV:C* – as the Arabic word *miftāḥ* 'key'; it is thus pluralized *mashātīḥ* (*CVCV:CV:C)* in accordance with the plural of 'key', *mafātīḥ.* Moreover, the selection of the broken plural templates *Ca**Ca:**CiC* and *CaCa:**Ci:C*** (Table 20 above) serves to preserve the stress pattern of the base form, i.e., the HL. The template *CaCa:**Ci:C** is* selected when the base has final syllable stress, e.g., *maḥ**sūm*** **'**checkpoint' is pluralized *maḥā**sīm.*** The template *Ca**Ca:**CiC* is selected when the base HL bears penultimate stress, e.g., ***tan**dar* 'pickup truck' is pluralized *ta**nā**dir.* In both examples the stress remains faithful to the stress pattern of the base Hebrew word.

Of course, not all disyllabic HLs are subject to integration into an Arabic broken plural template. We consider the few forms that admit the broken plural the most integrated (morphologically) of HLs, since they involve complex internal changes for plural formation. The four forms in Table 20 are among the most frequent lexical items in the corpora; indeed, the forms for 'checkpoint' and 'pallet' are the most frequent HLs overall. The broken plural appears to be used with the most entrenched HLs in PA, as they are among the forms with the earliest adoption. This conclusion is in keeping with what Hafez (1996) suggests regarding the integration of English loanwords in Egyptian Arabic: "It could also be the case that newly introduced loanwords start with a sound-plural form and later, when felt to be part of the RL [recipient language], switch to a broken-plural form" (p. 15).

We note for completeness that the HL for 'checkpoint' appears with more than one type of plural: broken plural, the plural *–at*, or with Hebrew plural suffix: *maḥāsīm*, *maḥsūmāt* and *maḥsūmīm* respectively. In terms of frequency, though, the broken plural is by far most frequently used (37 occurrences) for the four words in Table 20, the Hebrew plural is rarely used (two occurrences), and the plural in *–āt* is rare (one occurrence). In one other form, the plural for 'pickup truck,' the broken plural coexists with the Hebrew plural, but here too, the templatic plural is dominant: 15 occurrences as opposed to three. As the table below summarizes, templatic plurals for these four HLs are dominant across both corpora and are virtually the *only* plural in the WG corpus.

Table 21

Relative Distribution of the Broken Plural Across Corpora

	Broken plural		**Hebrew plural**		**Plural in *–āt***	
HL plural gloss	**Israeli**	**WG**	**Israeli**	**WG**	**Israeli**	**WG**
checkpoints	6	31	2	-	1	1
pallets	7	57	-	-	-	-
kettles	3	4	-	-	-	-
pickup trucks	13	2	3	-	-	-

To summarize, the data from our corpora broadly align with findings from spoken PA (Henkin-Roitfarb, 2011), in that HLs can take the Hebrew plural, the Arabic sound plural, or the broken plural. In our corpora, the overwhelming majority of HLs are adopted with no changes in plural suffixes (no morphological change), i.e., HLs are borrowed along with the Hebrew suffix *-im* or *-ot.* Of all unique plural HLs (134) in our corpora, 106 (or 79%) display the Hebrew plural; 24 display the Arabic sound plural (18%) and four display the Arabic broken plural (only 3%). Preserving the Hebrew suffix *-im* or *–ot* could be explained by the fact that some HLs are relatively newly introduced into PA; it is likely that a Hebrew word enters PA along with its

Hebrew plural form, and later, when it is more frequent in PA, assumes a sound plural or broken plural.

As noted above, gender and animacy play a role in the selection of the Arabic sound plural: the type of plural suffix selected depends on whether the referent is human or non-human. Masculine plural suffixes are used with animate referents while feminine plural suffixes are mostly used with inanimate referents as a default plural suffix for loanwords. Thus, the feminine plural marker *-āt* is found more frequently in the corpus than the masculine plural marker. It is also worth recalling that the feminine sound plural also "dominates plural space in Arabic" in first language acquisition (Saiegh-Haddad et al., 2012, p. 1104). We consider forms that adopt a sound plural to display partial morphological adaptation. Only four HLs display the broken plural, representing the highest degree of morphological integration in PA; these four HLs are highly frequent nouns that are likely well entrenched in PA.

5.2.2.3 Root extraction (Derivational process)

Examples of derivation by root extraction are rare in our corpus. We were able to uncover two examples. The data include one verbal form and one nominal form that are derived from Hebrew nouns, likely through the processes of extracting roots of three consonants and combining the root with derivational patterns of MSA to generate new words in Arabic. Although examples of root extraction are limited, these two loanwords reflect a high degree of adaptation and integration of Hebrew words into the MSA morphological patterns.

An example from the Israeli corpus is the HL *hazmanūt* from Hebrew *hazmanot* 'orders' from which the verb root *z-m-n* has been extracted. This root has been combined with the MSA pattern *faʿala* to generate the past tense stem <زمن> *zamana,* and then to generate the verb <تزمن> *tazmin* 'she is booking' (book-3SG.F.PRES PROG).The verb was encountered only once in

the context of booking a hair appointment. Note that the root *z-m-n* is found in Arabic but with a different meaning from the root borrowed here.

The second example of root extraction occurs with the nominal HL <حردنة> *ḥardanah*, which means '(the process of) becoming a religious Jew.' From the HL *ḥaridim* 'orthodox Jews' (noun), the root *ḥ-r-d* was extracted and combined with the form *faʿlanah* to generate the noun *ḥardanah* '(the process of) becoming a religious orthodox Jew' (noun). As Al-Aqtash (2010) mentions, this form is used to signal a change (a "semantic transformation") in the state or quality of an entity. This HL was found four times in the Israeli corpus and seven times in the WG corpus. In most cases, this loanword was accompanied by an Arabic explanation, suggesting that it's a relatively new formation.

5.2.2.4 Clitics

The morphological structure of some HLs includes proclitics, such as the definite article *ʾal-* and *li-* 'for,' and enclitics, such as the possessive pronouns *-nā* 'our' and *-hum* 'their.' In Arabic, the definite article <الـ> *ʾal-* marks the definiteness of the noun or adjective it modifies. The Arabic definite article *ʾal-* is a proclitic that is attached to loan nouns and loan adjectives. The HL *ʾal-shamīnit* (MH *ha-shamenet*) 'the cream' includes the definite article before the sun letter *sh* and the HL *ʾal-mishmīrit* (MH *ha-mishmeret*) 'the shift' includes the definite article before the moon letter *m*. Note that the sun letters and moon letters are vowelized differently after the definite article in Arabic (see Chapter 3). As mentioned earlier, written Arabic does not include short vowels.

In Hebrew, the definite article <-ה> *ha-* is a prefix that attaches to the word. For some HLs, the Hebrew definite article is borrowed along with the HL, such as in the acronym *ha-mītsāf* (MH *ha-mitsav*) 'the measures of school effectiveness and growth,' and in the phrases *ha-*

kūl kalūl (MH *ha-kol kalul*) ‘all inclusive’ and *ha-mikhlālāh li-minhāl* (MH *ha-mikhlalah le-minhal*) ‘the college of management.’

As for the preposition *li-* ‘for’ in MSA, which is *le-* or *la-* in MH, one HL was found with the preposition *li-* followed by the definite article form *l* (with the loss of *ʾa* in *ʾal-*) from Arabic as in *traktūrūnāt li-l-shīṭaḥ* (MH *ṭraqṭoronim la-sheṭaḥ* ‘all-terrain vehicles for off roading’ (literally: ‘all-terrain vehicles for the off road). The first noun is *traktūrūnāt* ‘all-terrain vehicles’ and the second noun is *shīṭaḥ* ‘off road’; the latter is preceded by the preposition *li-* and the Arabic definite article *l-*.

Some HLs in the corpus also inflect to show possession. In Arabic, nouns are inflected to show the possessive case by adding a possessive pronoun as an enclitic to the noun. In Hebrew, possessive pronouns can be attached to or separated from the noun. Examples of HLs that include the Arabic possessive suffix on HLs are *ʿatīdu-nā* (MH *ʿatidi-no*) ‘our future’ and *traktūrūnāta-hum* (MH *ṭraqṭoronim shelahim*) ‘their all-terrain vehicles.’ Note that loanwords in MH cannot take the possessive pronoun suffixes.

5.2.3 Semantic Adaptation of HLs

The majority of HLs in both corpora are borrowed with a meaning that corresponds to the original meaning in the source language. However, HLs may also undergo certain semantic modifications over time. A few HLs in both corpora undergo semantic widening. In semantic widening, the loanword meaning becomes more general in the recipient language than in the source language (Campbell, 1998). In PA, the HL *takhshītīm* (MH *takhshiṭim*) ‘(expensive) pieces of jewelry’ does not only refer to expensive pieces of jewelry but to any accessory. Likewise, MH *mishṭaḥ*, which is the source for the HL *mishtāḥ*, refers to a flat wooden structure used for sorting goods or transporting freight; the HL *mishtāḥ* refers instead to any kind of flat

structure that is used for sorting and transporting goods, whether wooden, plastic or made of any other material. A final example of semantic widening is provided by the HL *ʾartīk,* which is based on MH *artiq* 'ice cream bar (on a stick).' The Hebrew word *artiq* was the name of an ice cream company that existed in Israel for over 70 years; over time, though, the noun *artiq*, came to be used generically for all milk-based ice cream bars (on a stick). The HL in PA refers more broadly to any kind of frozen dessert on a stick, including popsicles. It is worth noting that the HL *ʾartīk* is adopted in the first place because there is no single word in PA that captures 'ice cream on a stick.' In fact, the Arabic Language Academy in Israel suggests using the phrase <مثلوجة حليب> *mathlūjat ḥalīb* (singular) literally 'milk ice cream bar' for the concept. Once *ʾartīk* was adopted by PA speakers, its meaning expanded.

There are also a few examples of 'semantic selection': the loanword has only one of the possible meanings of the word in the source language, usually the most dominant meaning. This, of course, is likely indicative of the context in which PA speakers first hear Hebrew words. Perhaps other meanings of these HLs are known, but our corpora show evidence of one meaning for each of the HLs discussed below.

An example of semantic selection is the use of the HL *tiftūf* 'drip irrigation.' It is used in PA in connection to agriculture only, while MH *ṭifṭuf* can refer to droplets in any context, including agriculture. The HL *majīn*, meaning 'shield' or 'protection', is limited to the context of the protection of a cellphone or tablet (e.g., iPad) whereas the MH source word can be used to mean 'protection' in any context, including the protection of a cellphone or tablet. There are other HLs in PA that are similarly used in the context of cellphone usage only, while the MH source word is used in other contexts that include cellphone usage: *kilīṭāh*, for example, is used only for cellphone reception and *matʿīn* only refers to charging a cellphone battery (these nouns

also mean, respectively, 'reception' and 'charger' in MH, but they are not only used in the context of a mobile phone). The MH source noun for the HL *bniyāh* can refer to any type of 'building' or 'building process,' including building ('filling') fingernails, but the HL in PA is limited to the context of manicures in our corpora. Finally, the MH source word for the HL *hitḥayfūt* refers to a 'commitment' or 'obligation' in any context, including the healthcare context; in PA, however, the HL is limited to use in a healthcare context only, i.e., it is used to refer to the document required by a patient to receive care in a hospital. Table 22 provides additional examples in which the HL borrows only one of the original possible meanings.

Table 22

Semantic Selection and HLs in PA

HL	Hebrew meaning	Selected meaning in HL
ḥasūm	'blocked; gagged; (geometry) inscribed; (mathematics) bounded'	'blocked' as in 'blocked cellphone calls'
basīm	'stripes or streaks'	'streaks' related to hair colouring
mīnūs	'(mathematics) minus sign (-); (colloquial) overdraft; (slang) drawback, shortcoming, fault'	'overdraft' in banking accounts
kūtsīm	'thorns or spiky hairstyle'	'spiky hairstyle'
mazlīj	'fork or forklift'	'forklift'
būnūs	'bonus, fringe benefit, reward' (Also used to refer to the extra grades used to calculate the matriculation exams average)	refers to the extra grades used to calculate the average of the matriculation exams
miyūn	'sorting, selection, classification,' also refers to 'emergency, triage' (in a hospital)	'emergency, triage' (in a hospital)

5.2.4 Overview of the Adaptation of HLs in PA

After examining the type of adaptation that HLs undergo, we are moving to provide an overall picture of the degree of adaptation of HLs in our corpora. We can classify the HLs in our corpora into three broad categories: those that undergo virtually no changes, those that display partial adaptation, and those that display a fuller adaptation in PA. We focus on phonological and morphological adaptation, since cases of semantic adaptation are too few in our corpora.

Overall, our data indicate adaptation to PA phonology in HLs; the degree of adaptation is dependent on the level of divergence between the Hebrew and MSA phonological systems. HLs which broadly correspond to phonological structures in MSA (i.e., fit into the MSA phonological system) were used on websites in Arabic without phonological changes, according to how they were written; examples include *ḥīnūkh* (MH *ḥinukh*) 'education' and *maslūl* (MH *maslul*) 'path, lane, track.' Words appear to undergo changes when there is a clash between Hebrew and Arabic phonological systems. Here, too, HLs are adapted to Arabic phonology. HLs that contain Hebrew consonants or vowels not found in MSA undergo replacement of such sounds; Hebrew consonants and vowels are substituted with the closest phonetic counterparts in MSA, e.g., *maklīdit* (MH *miqledet*) 'keyboard' and *madriḥūf* (MH *midreḥov*) 'pedestrian mall.' We found a few HLs that include scripts (e.g., <چ> /g/ in دچنيم *diganīm* (MH *deganim*) 'grains' and <ڤ> */v/* in روتيڤ *rūtīv* (MH *roṭev*) 'sauce') that are not part of written MSA and are borrowed from other languages using Arabic script to represent sounds (other than those found in Hebrew) that are not found in MSA. The use of these 'other language' scripts may reflect a level of awareness that we are dealing with Hebrew words and the Hebrew language; we are not able to state with certainty through our written examples, though, that PA speakers pronounce the word as it is pronounced in Hebrew. Since greater or lesser phonological adaptation is dependent on degrees of similarity

or dissimilarity between sounds in Hebrew and Arabic, phonological adaptation (as gleaned from written corpora) does not appear to be a reliable indicator of loanword integration. In the case of morphological adaptation, however, it is possible to gauge loanword integration by degree of adaptation.

In terms of morphological adaptation, we note that the dominant pattern in our corpora is that a Hebrew word is borrowed along with the Hebrew morphological marker, e.g., *ḥarīdīt* (MH *ḥaredit*) 'orthodox Jew (female),' *shīkūnīm* (MH *shikunim*) 'housing projects,' *dūdīm* (MH *dodim*) 'dudes,' and *tukhniyūt* (MH *tukhniyot*) 'plans.' In these examples, HLs keep their Hebrew morphological form and do not show any change in gender or number. It is not possible to determine from such forms whether PA speakers analyze each loanword into its morphemic parts. We do encounter a few examples, though, in which morphological analysis is evident. There are HLs that display all Hebrew morphemic units (as in the examples just cited) alongside Hebrew base words with Arabic suffixes, e.g., *ḥarīdiyah* (MH *ḥaredit*) 'orthodox Jew (female),' and *shīkūnāt* (MH *shikunim*) 'housing projects.' Perhaps HLs that can freely take Arabic morphemes are more entrenched in PA.

The collected data includes four HLs that make use of the broken plural and two HLs that were formed by using the root extraction process. Using the broken plural or the root extraction process renders the loanwords indistinguishable from native words. We consider these forms the most integrated into PA morphology among the examples collected.

Overall, in the corpora we observe that HLs are adapted to Arabic phonology and to a greater or lesser extent to Arabic morphology. This suggests that there is an attempt to treat these words as Arabic words. Of course, as has been noted at various points above, we find cases in which some forms are represented in different ways in both corpora. Such spelling variation

could stem from the recency of some loanwords and from the fact that there is no widely accepted standardized way of representing these words. In addition, spelling choices could be influenced by a writer's level of education, degree of bilingualism or attitude to the Hebrew language (positive or negative), which we cannot know.

As mentioned in Chapter 2, Thomason's (2001, pp. 70-71) borrowing scale consists of four degrees of contact, defined as follows:

(1) Casual contact: includes the borrowing of only content words, consisting primarily of nouns, but also: verbs, adjectives, and adverbs.

(2) Slightly more intense contact: includes the borrowing of function words, such as conjunctions and adverbials, in addition to minor structural borrowing, such as phonological and syntactic features.

(3) More intense contact: includes moderate structural borrowing, such as pronouns and some derivational affixes. This level includes more structural borrowing in phonology, such as the deletion or addition of some phonemes; and in morphology such as, the adding of borrowed inflectional affixes to a native word.

(4) Intense contact: leads to greater structural borrowing because of very strong cultural pressure.

Written PA primarily demonstrates what is labeled 'casual contact' in Thomason's (2001) contact scale, i.e., the level that includes the borrowing primarily of content words, in particular nouns. At this level, borrowers do not need to be fluent in the source language. The majority of HLs in both corpora are indeed nouns. The second level of Thomason's (2001) scale includes the borrowing of function words such as conjunctions and adverbials. The borrowing of discourse markers, which belong to the class of adverbs, such as *ḥāfāl* 'not worth it,' *mamāsh* 'truly' (found

in the Israeli corpus only) and the broken plural found in Table 20 (found in both corpora) are suggestive of elements from level two. A slightly greater degree of contact between PA and Hebrew in Israel is assumed at this level; indeed, there may be some borrowers who are fluent bilinguals, although this cannot be confirmed in our study. We did not find evidence of structural borrowing from Hebrew (levels three and four) in our corpora, but others have found evidence of limited structural borrowing (e.g., using a Hebrew plural suffix with an Arabic base word) in spoken PA (Mahajna, 2019).

Chapter 6

Conclusion

This dissertation examined Hebrew loanwords (HLs) written in Arabic script on digital platforms in terms of semantic categories, relative distribution (frequency), and the linguistic adaptations that they undergo. HLs were collected from texts written by speakers of Palestinian Arabic (PA) and which appear on websites published in Israel, and in the West Bank and Gaza (WG), and are representative of written PA. This chapter summarizes the dissertation and its findings, and the contributions that it makes to the study of Hebrew-Arabic language contact. Finally, I acknowledge the limitations of this study and suggest directions for future research.

6.1 Summary

The study collected numerous HLs written in Arabic script in digital texts, organized into two corpora, the Israeli corpus and the WG corpus. These digital texts, written in Modern Standard Arabic (MSA), were found on websites written for a PA audience and published in Israel and WG; although we cannot know with certainty, it is reasonable to surmise that the authors of these digital texts are themselves speakers of PA.

Although ultimately more HLs were found in the Israeli corpus, it is worth noting again that all HLs found in the WG corpus are found also in the Israeli corpus. This is an interesting finding because PA speakers in Israel have intensive direct contact with Hebrew and Hebrew speakers, while PA speakers in WG have limited contact with the Hebrew language and Hebrew speakers. The use of *same* HLs in the WG corpus (as in the Israeli corpus) shows that HLs can spread across borders between the West Bank or Gaza and Israel despite the lesser degree of contact in these areas between PA and Hebrew. In the discussion below we summarize our findings in relation to the research questions posed at the outset of this study (see 1.4.3.1).

6.1.1 What Types of HLs Appear in Written PA? Which Semantic Categories Do They Represent?

Although the WG corpus contains less than half of the HLs of the Israeli corpus, the overall pattern of borrowing is similar. HLs are found in a range of semantic categories and the highest percentage of HLs, in terms of relative distribution, appear in the *food* and *education and institutions* categories in both the Israeli and WG corpora. This was expected in the Israeli corpus, since these lexical items are more strongly influenced by Modern Hebrew (MH); MH is the language of government, public service and higher education in Israel and PA speakers in Israel have daily direct contact with MH speakers. The similarities across both corpora, in terms of semantic categories and relative distribution, were not expected because of the limited contact with and use of the MH language in WG. As explained in detail in chapter 5, in the WG corpus, we expected the *housing and construction* category to be the most dominant because of communication stemming from employment.

6.1.2 Which Words Appear to Be Borrowed with Greater Frequency?

The most frequently used HLs within each corpus came from multiple semantic categories and not only from the dominant categories. Three of the most frequently used words are the same across the corpora: *ḥarīdīm* 'orthodox Jews,' *ramzūr* 'traffic light,' and *trakturūn* 'all-terrain vehicle.' It is surprising that many HLs (e.g., *mishṭāḥ* (MH *mishṭaḥ*) 'pallet') are significantly more frequent (relatively speaking) in the WG corpus than in the Israeli corpus despite the limited contact with Hebrew in WG compared to Israel.

HLs in both corpora belong to content words only and no structural borrowings from Hebrew were encountered in either corpus. The most frequent HLs in both corpora are nouns, as is the case for other studies of Arabic-Hebrew language contact: previous studies (e.g., Abu Elhija,

2017; Mahajna, 2019, among others) also found that nouns are borrowed more frequently than adjectives and verbs. This is typically the case in language contact and is likely due to the ability of nouns to efficiently capture unfamiliar concepts and products (see Weinreich, 1968), and the relative ease with which nouns can be incorporated into the structure of the recipient language (see Haspelmath, 2009; Thomason, 2001). We found a few adjectives in each corpus and two adverbs in the Israeli corpus only. No verbal HLs were found, although previous studies have reported the use of loan verbs from MH in spoken PA (see Amara, 2006a).

6.1.3 What are the Motivations that Underpin Borrowing?

Most of the nouns that were borrowed from Hebrew do not appear to fill lexical gaps since the vast majority have Arabic equivalents. What, then, motivates the borrowing of so many words that have recipient language equivalents? Although one can never say with certainty what motivates one language to borrow or not a particular word, potential reasons can be identified. Two possible reasons for the use of HLs over their Arabic equivalents in both corpora are *cultural precision* (e.g., the HL *kashīr* 'kosher' used rather than *ḥalāl* 'halal') and *formality avoidance* (e.g., the HLs *shīzūf* instead of *tasaffuʿ* 'suntanning'). Moreover, the study found that there are HLs that are used interchangeably with their Arabic equivalents in the same text (e.g., the HL *mūtājīm* and the Arabic equivalent *ʿalāmāt tijāriyah* 'brand names' are used interchangeably in the same text). There are numerous HLs, however, whose motivations for borrowing are not easily ascribed either to *cultural precision* or *formality avoidance*. It is possible that such HLs are used for *prestige reasons*, i.e. to signal that one is 'modern' or to convey educational status (Henkin-Roitfarb, 2011).

6.1.4 What Linguistic Adaptations (Phonological, Morphological, Semantic) do HLs Undergo?

We examined the nature of any phonological and morphological changes that the HLs in the corpora undergo. Most HLs were adapted to Arabic phonology and morphology. At the phonological adaptation level, HLs undergo consonant changes where necessary to fit the Arabic phonological system, e.g., substitution or simplification of unfamiliar consonants, or vowel changes aimed at preserving the Hebrew stress placement (e.g., vowel lengthening). The observation that vowels can change for Hebrew stress preservation is in keeping with observations made in prior studies on spoken PA (e.g., Henkin-Roitfarb, 2011; Henkin, 2013) and in informal written PA (e.g., Mahajna, 2019). Of course, we need to keep in mind (as discussed elsewhere) that it may not be possible to account for all phonological changes through our corpora, since we are limited to only those changes that are evident in orthography.

The findings include only a few examples of HLs that directly reflect spoken PA. For example, the Hebrew words *ʿal* 'on' (PREPOSITION) and *tnay* 'condition' (NOUN) are realized as HL *ʿatnāy*, betraying the PA treatment of the Arabic definite article before a consonant-initial noun. Further evidence of spoken PA is found in the optional deletion of the glottal stop from the Hebrew word *afarsimon* 'persimmon', which is written as *farsimūn* or *ʾafarsimūn* in Arabic (see Chapter 5).

At the level of morphological adaptation, most HLs conform to the morphological patterns of MSA. The most common process was the adaptation of Arabic gender and number agreement. For gender, feminine HLs in both corpora may keep the Hebrew feminine suffixes or take the Arabic feminine suffixes. For number, HLs unsurprisingly take Arabic dual suffixes because the use of dual number is obligatory in Arabic (unlike in MH). The use of the Arabic

dual suffix suggests that HLs are treated as native PA words. In plural number, HLs may maintain the Hebrew plural morpheme, take the Arabic sound plural morpheme, or take the Arabic broken plural form. These findings broadly align with findings from spoken PA (Henkin-Roitfarb 2011). Moreover, the findings show that the gender and animacy of the referent (according to Arabic) play a role in the selection of the plural suffix. In Arabic, animate masculine loanwords usually take the broken plural, whereas inanimate masculine loanwords usually take the feminine sound plural suffix *-āt* as the default suffix. In our corpora, a small number of masculine animate HLs take the masculine sound plural. This is uncommon for loanwords in PA. Only four HLs across both corpora displayed the broken plural and all four HLs were highly frequent nouns that are likely well entrenched in PA. As discussed in Chapter 5, the selection of specific broken plural templates is motivated by syllabic structure and stress considerations, which supports the observations of Laks (2014), who found the same patterns in loanwords in Jordanian Arabic and PA.

A few examples of Arabic clitics used with HLs were found in the data, e.g., the definite article *ʾal-* and the preposition *li-* 'for', both proclitics, and the enclitics *-hum* and *-nā*, which are possessive pronouns. The use of Arabic clitics is an indicator of how deeply these HLs are integrated into the Arabic morphological system. In the case of the definite article, most HLs display the Arabic definite article; only a limited number of HLs are borrowed along with Hebrew definite article.

An interesting finding is the formation of two words in written PA through the process of root extraction: the verb *tazmin* 'she is booking' and the noun *ḥardanah* '(the process of) becoming a religious Jew.' As explained in Chapter 5, these two words are derived from Hebrew nouns that

are highly frequent in PA. Although examples of root extraction are limited, these two words reflect a high degree of integration of certain HLs into MSA morphological patterns.

With respect to semantic adaptation, the data collected show that the majority of HLs in both corpora are borrowed with a meaning that corresponds to the original meaning in MH. A few HLs select only one of the possible meanings of the word available in the source language, likely corresponding to the meaning of those Hebrew words in the context in which PA speakers first encounter them. Only a very limited number of HLs undergo semantic modifications, such as widening.

6.1.5 Does Geography Affect Patterns of Borrowing?

At the outset of this study, two corpora were created to determine whether geography affects general patterns of borrowing and linguistic adaptation. A comparison of the Israeli corpus with the WG corpus shows that the overall phonological, morphological, and semantic adaptation patterns are quite similar. Given the differences in the degree of contact between PA speakers and speakers of MH in the two broad areas, Israel and the West Bank and Gaza, and differences in sociolinguistic factors (e.g., a greater degree of bilingualism among Israeli PA speakers; attitudes towards MH in each broad area), it was anticipated that the differences between the corpora would be more pronounced, both in the types of words borrowed (discussed above) and in the degree of adaptation. Overall, there is also a lack of consistency in the spelling of HLs, in both corpora. However, a novel finding in terms of the written representation of HLs did emerge. Despite the similarities across the corpora, it is possible to detect attempts to represent HLs differently in each corpus: in the WG corpus, the spelling of HLs more closely represents spoken Hebrew, particularly the Ashkenazi pronunciation, while in the Israeli corpus, the spelling of HLs more closely follows the patterns of written Hebrew, likely because the majority of PA speakers in Israel are literate in

Hebrew and thus familiar with the spelling of the loanword in the source language.

6.1.6 To What Degree are HLs Integrated in PA?

This study also endeavoured to uncover the overall degree of integration of HLs in PA. In phonology, the degree of adaptation depends on the level of divergence between the MH and MSA phonological systems. As far as can be determined from written data, HLs that fit into the MSA phonological system are used on websites in Arabic without phonological changes – again, at least in terms of what can be gleaned from the orthography. When there is a clash between the phonological systems, HLs undergo phonological changes, as summarized above. In short, based on the written evidence, most HLs appear to integrate fully in the MSA phonological system.

In morphology, the degree of integration varies. HLs may not show any change (e.g., in gender or number) and keep their Hebrew form, showing no integration. Other HLs undergo partial adaptation, such as when Arabic suffixes attach to HLs; these words provide examples of greater integration into the PA system. Other HLs appear to undergo complete adaptation, such as the use of the broken plural with HLs, which we consider the most integrated into Arabic morphology.

Overall, the level of integration of HLs in PA appears limited to the lexical level. Written PA absorbs numerous HLs, adapted to a lesser or greater degrees according to the PA linguistic system. Given the degree of contact between PA speakers and Hebrew speakers, particularly in Israel, one could have expected some indication of a Hebrew influence on PA structure, at least according to Thomason's scale (Thomason, 2001). There is no indication of structural borrowing from Hebrew in our data, either because it does not exist or because of the mode of communication (written) encoded in the data set: writers of content for the websites in Arabic consulted may be more careful (planning, editing) in what they choose to commit to written form.

6.2 Contributions of This Study

Previous studies addressed HLs in spoken PA and informal written PA, but not in formal written PA. This study systematically examines the adaptation of HLs in formal written Arabic in digital texts. This study constitutes the first attempt to describe HLs in written PA on websites in terms of their frequency, relative distribution, and linguistic adaptation. Conclusions drawn from this study add to the literature related to language contact in general and to scholarship on contact between PA and MH in particular. Understanding the use of HLs in digital texts increases our understanding of how direct contact between PA and MH influences written PA. In addition, the findings of this study indicate how deeply many HLs have penetrated PA, given that they appear in MSA, which is a formal variety not typically receptive to novel forms. Therefore, it is surprising to find that many of the same HLs used in spoken PA are also recorded in written PA.

The interactions between Arabic and Hebrew in Israel and immediately beyond Israeli borders, in the West Bank and Gaza, constitute a contemporary contact situation that is worthy of scholarly attention. This language contact situation is extremely complex and arguably 'unique,' and Amara writes in more than one work: "In spite of its similarities to other cases of language contact worldwide, the Arabic-Hebrew contact has a unique sociopolitical context" (Amara, 2018, p. 79). Different types and degrees of contact between PA and Hebrew speakers are involved, and these varying levels of contact play out in different regional contexts. The study provides two corpora of HLs from websites in Arabic published in different regions. The comparison between the use of HLs in the Israeli corpus and the WG corpus (discussed in detail in Chapter 5) helps to shape our understanding of the role that geography and degree of contact, among other sociolinguistic factors, play on lexical borrowing in PA. These corpora provide a rich data source

and may be used and augmented in future studies to examine additional aspects of language contact between PA and MH.

The corpora may also be of assistance beyond the realm of linguistic scholarship. For example, knowledge of widely used loanwords can be incorporated in materials and programs for Arabic speakers who wish to learn Hebrew for the purpose of communicating orally with MH speakers. Knowledge of these loanwords could also be helpful in informational materials for Arabic speakers, e.g., government flyers and websites, banking information, marketing. If there is an understanding that in some contexts the loanword may be more accessible than the Arabic equivalent to Arabic speakers, it would be more effective to use the loanword, either alone or alongside the Arabic equivalent.

6.3 Limitations of This Study

This study has several limitations, including sample size, the fact that it is limited to digital texts, and is constrained temporally.

One of this study's limitations is the relatively small sample size of each corpus. Both corpora were limited to written digital texts in Arabic and did not include other written registers in MSA, e.g., educational materials in Israel when Arabic is the language of instruction, printed government documents, and works of fiction by PA writers.

The results of this study are based on HLs collected from websites published in Israel and WG in a specific window of time: October to December 2019. We know that additional HLs could be found on websites in Arabic shortly after the data collection phase ended. For instance, words related to COVID-19, such as the HL *bīdūd* (MH *bidud*) 'quarantine; isolation' and the HL *kābīnīt kūrūnā* (MH *qabinet qorona*) 'Corona (government) cabinet.' It is also worth mentioning that there

may be HLs used in other Arabic-speaking territories that border Israel, e.g., Jordan and Egypt, but examining this question was beyond the scope of this study.

Finally, we need to mention a couple of other limitations regarding the current study. Since the study relies on written texts, we can only indicate what written practices seem to suggest about pronunciation, without being able to confirm the spoken version of HLs. Since we have no demographic information about the authors of the texts used for this study, we do not know if or how an individual's degree of bilingualism and attitudes toward Modern Hebrew influenced the choice and form of HLs used.

6.4 Future Work

This study used corpora to examine the use of HLs from a sociolinguistic point of view. Future research may use the same corpora to examine the use of HLs through a different lens, such as a social, pedagogical, or political perspective.

This study did not examine how the readers pronounce HLs; however, an interesting avenue for future study is to examine whether readers' pronunciation of HLs reflects their Arabic spelling or the Hebrew pronunciation of the source word.

It would also be interesting to extend the method adopted in this study to investigate differences in the use of HLs in various regions within Israel to determine how the degree of contact with the Hebrew language and Israeli culture within Israel influences the use of HLs. For example, PA speakers in northern, central, and southern Israel come in contact with Hebrew speakers to varying degrees, which may result in variation in the type of HLs used in written texts.

As mentioned above, a limitation of the current study is the fact that we do not know the degree of Arabic-Hebrew bilingualism of the writers of the texts in the corpora, nor do we have

any information regarding their attitude to Hebrew. To address this limitation, future work could examine the background of writers to better explain the motivations behind borrowings.

It would also be worth investigating whether and/or which HLs are used in Arabic textbooks (digital or paper textbooks) in Israel, which are expected to strictly follow MSA. Such an examination would give us greater insights into the diffusion of HLs in PA.

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Appendices

Appendix A

Transcription and Transliteration Symbols

Table A1

MSA Consonants with IPA Transcription and Transliteration Symbols

Arabic letter	IPA	Transliteration
ء	ʔ	ʾ
ب	b	*b*
ت	t	*t*
ث	θ	*th*
ج	ʒ	*j*
ح	ħ	*ḥ*
خ	x	*kh*
د	d	*d*
ذ	ð	*dh*
ر	r	*r*
ز	z	*z*
س	s	*s*
ش	ʃ	*sh*
ص	sˤ	*ṣ*
ض	dˤ	*ḍ*
ط	tˤ	*ṭ*
ظ	ðˤ	*ẓ*
ع	ʕ	ʿ
غ	ɣ	*gh*
ف	f	*f*
ق	q	*q*
ك	k	*k*
ل	l	*l*
م	m	*m*
ن	n	*n*
هـ	h	*h*
و	w	*w*
ي	j	*y*

Table A2

MSA Vowels with IPA Transcription and Transliteration Symbols

	Diacritic in Arabic	IPA	Transliteration
Short vowels	◌َ	a	*a*
	◌ُ	u	*u*
	◌ِ	i	*i*
Long vowels	ا	a:	*ā*
	و	u:	*ū*
	ي	i:	*ī*

Table A3

Modern Hebrew Consonants with IPA Transcription and Transliteration Symbols

MH letter	IPA	Transliteration
א	ʔ	ʾ or disregarded
בּ	b	*b*
ב	v	*v*
ג	g	*g*
ד	d	*d*
ה	h	*h*
ו	v	*v*
ז	z	*z*
ח	x	*ḥ*
ט	t	*ṭ*
י	j	*y*
כּ	k	*k*
כ	x	*kh*
ל	l	*l*
מ	m	*m*
נ	n	*n*
ס	s	*s*
ע	ʔ	ʿ
פּ	p	*p*
פ	f	*f*
צ	ts	*ts*
ק	k	*q*
ר	ʁ	*r*
שׁ	ʃ	*sh*
שׂ	s	*s*
ת	t	*t*
[32](ג׳)	dʒ	*j* or *ǧ*
(ז׳)	ʒ	*ž*
(צ׳)	tʃ	*ch* or *č*

[32] The consonants in brackets appear only in loanwords.

Table A4

Modern Hebrew Vowels with IPA Transcription and Transliteration Symbols

Diacritic in MH	IPA	Transliteration
סָ סַ סַ	a	*a*
סֶ סֶ סֵ סֵ סֶ֫	e	*e* or disregarded
סִ סִ֫	i	*i*
סֹ סֹ֫ סָ סָ֫	o	*o*
סֻ סֻ֫	u	*u*

Note: The Hebrew letter ס is here used as a prototypical consonant simply to illustrate the placement of the vowel diacritic.

Appendix B

Hebrew Loanwords Written in Arabic Script in the Israeli and in the West Bank and Gaza Corpora

The pages that follow contain all Hebrew loanwords (HLs) written in Arabic script in the Israeli and in the West Bank and Gaza corpora. Loanwords that are found in both corpora are underlined. The words are organized by semantic category and alphabetically ordered according to Arabic within each category. In terms of morphological number, words are listed as they appear on the websites; if they appear only in the plural in digital form, the plural form only is presented, as is the case for forms that appear only in the singular (only the singular is provided); if loanwords are found in singular and plural on the websites consulted, then only the singular is given below. While several spelling variants exist for many Hebrew borrowings, the list below only cites one spelling, the dominant one. For polysemous words, the gloss reflects the meaning used in the source text.

For ease of consultation, each lexical entry is assigned a number (Arabic numeral). The semantic categories are organized in the following order: Food (entries 1-139), Education and institutions (140-270), Body and healthcare (271-305), Housing and construction (306-339), Fashion and grooming (340-372), Economics (373-405), Technology (406-437), Transportation and cars (438-464), Judaism (465-491), Jobs (492-510), Recreation (511-524), Qualities - Attributes (525-532), Arts (533-539), Agriculture (540-543), Law (544-547), Sport (548-550).

Table B1

Hebrew Loanwords Written in Arabic and Hebrew Scripts for both Corpora, Divided by Themes

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
Food					
1	أخمنيوت	*ʾukhmanyūt*	אוכמניות	*ukhmanyot*	‘blueberries’
2	أرتيك	*ʾartīk*	ארטיק	*arṭiq*	‘popsicle, ice cream bar’
3	إشكليوت	*ʾishkalyūt*	אשכוליות	*eshkolyot*	‘grapefruits’
4	أفرسمون	*ʾafarsimūn*	אפרסמון	*afarsimon*	‘persimmon’
5	أفكاه	*ʾafkāh*	אבקה	*avqah*	‘powder’
6	أفكاة أفيا	*ʾafkāt ʾafiyā*	אבקת אפיה	*avqat afiyah*	‘baking powder’
7	ألفاخورس	*ʾalfākhūris*	אלפחורס	*alfaḥores*	‘alfajores’
8	أورجانيت	*ʾūrjānīt*	אורגנית	*organit*	‘organic’
9	باجيتيم	*bajītīm*	בגטים	*bageṭim*	‘baguettes’
10	بازيليكوم	*bazīlīkūm*	בזיליקום	*baziliqum*	‘basil’
11	بتريوت	*bitriyūt*	פטריות	*piṭriyot*	‘mushrooms’
12	بتسيك عليم	*batsīk ʿalīm*	בצק עלים	*batseq ʿalim*	‘puff pastry’
13	بتيتيم	*bitītīm*	פתיתים	*petitim*	‘flakes’
14	بتيفوريم	*bitīfūrīm*	פטיפורים	*peṭifurim*	‘petit fours’
15	بحزنيوت	*baḥzaniyūt*	פחזניות	*paḥzaniyot*	‘cream puff, profiterole’
16	بخيت	*bakhīt*	פחית	*paḥit*	‘small can’
17	برجيوت	*barjiyūt*	פרגיות	*pargiyot*	‘chicken thighs’
18	بريخيوت	*brīkhiyūt*	פריכיות	*prikhiyot*	‘rice crackers’
19	بسطراما	*bāsṭrāmā*	פסטרמה	*pasṭramah*	‘pastrami’
20	بفل بلجي	*bafil biljī*	וופל בלגי	*vafel belgi*	‘Belgian waffle’
21	بفله	*baflah*	וופלה	*vaflah*	‘wafer, waffle’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
22	بوتس	*būts*	בוץ	*bots*	'mud' (type of coffee drink)
23	بوريكس	*būrīkas*	בורקס	*bureqas*	'filled pastry'
24	بولغريت	*būlgharīt*	בולגרית	*bulgarit*	'Bulgarian (cheese)'
25	بومياليت	*būmālīt*	פומלית	*pomelit*	'oroblanco'
26	بيتا	*bītā*	פיתה	*pitah*	'pita'
27	بيجلا	*bījalā*	ביגלה	*bigaleh*	'pretzels'
28	بيرغ	*bīrigh*	פרג	*pereg*	'poppy seeds'
29	بيروري ليحم	*bīrūrī līḥim*	פירורי לחם	*perure leḥem*	'bread crumbs'
30	بيروريم	*bīrūrīm*	פירורים	*perurim*	'crumbs'
31	بيواورجاني	*biyū ʾūrjānī*	ביו אורגני	*biyo organi*	'bio-organic'
32	تبلينيم	*tablīnīm*	תבלינים	*tavlinim*	'spices'
33	تست هبايت	*tust ha-bāyit*	טוסט הבית	*ṭosṭ ha-bayit*	'house sandwich'
34	تسفتيت	*tsafatīt*	צפתית	*tsfatit*	'Safed (cheese)'
35	تسلعوت	*tslaʿūt*	צלעות	*tslaʿot*	'beef ribs'
36	تشيلي متوك	*tshīlī matūk*	צ'ילי מתוק	*tshili matoq*	'sweet chili'
37	تعروفت	*taʿrūfit*	תערובת	*taʿarovet*	'mixture'
38	تيبول	*tībūl*	תיבול	*tibul*	'seasoning'
39	تيرد	*tīrid*	תרד	*tered*	'spinach'
40	تيرس	*tīras*	תירס	*tiras*	'corn'
41	تيمين	*tīmīn*	תימין	*timin*	'thyme'
42	جروس	*jarūs*	גרוס	*garus*	'crushed'
43	جليدا	*jlīdā*	גלידה	*glidah*	'ice cream'
44	جمبا	*jambā*	גמבה	*gambah*	'sweet pepper'
45	جولش	*jūlash*	גולש	*gulash*	'goulash'
46	حالا	*ḥālā*	חלה	*ḥalah*	'bread used on Sabbath, chala'

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
47	حريسا	*ḥarīsā*	חריסה	*ḥarisah*	'harissa' Tunisian hot sauce made of chili peppers
48	حريف	*ḥarīf*	חריף	*ḥarif*	'hot, spicy'
49	حزي عوف	*ḥazī ʿūf*	חזה עוף	*ḥazeh ʿof*	'chicken breast'
50	حطيفيم	*ḥaṭīfīm*	חטיפים	*ḥatifim*	'snacks'
51	حلومي	*ḥalūmī*	חלומי	*ḥalumi*	'halloumi (cheese)'
52	حمأه	*ḥimʾah*	חמאה	*ḥemʾah*	'butter'
53	حمأة بوتنيم	*ḥimʾat būtnīm*	חמאת בוטנים	*ḥemʾat boṭnim*	'peanut butter'
54	حمنيوت	*ḥamaniyūt*	חמניות	*ḥamaniyot*	'sunflowers'
55	ختسيل	*khatsīl*	חציל	*ḥatsil*	'eggplant'
56	دايسا	*dāysā*	דייסה	*daysah*	'porridge'
57	دجنيم	*dijanīm*	דגנים	*deganim*	'grains'
58	دوفشنيوت	*dūfshaniyūt*	דובשניות	*duvshaniyot*	'honey cookies'
59	رفيون	*rifyūn*	רוויון	*rivyon*	'buttermilk'
60	روتف	*rūtif*	רוטב	*roṭev*	'sauce'
61	روتيف ألف آيم	*rūtīf ʾalf āyim*	רוטב אלף האיים	*roṭev elef ha-ʾiyim*	'thousand island dressing'
62	روزمارين	*rūzmārīn*	רוזמרין	*rozmarin*	'rosemary'
63	رولادات	*rūlādāt*	רולדות	*roladot*	'jelly rolls'
64	روليم	*rūlīm*	רולים	*rolim*	'rolls'
65	ريبات حلاف	*rībāt ḥalāf*	ריבת חלב	*ribat ḥalav*	'dulce de leche'
66	ريسك	*rīsik*	רסק	*reseq*	'paste'
67	سفجنيوت	*sufjaniyūt*	סופגניות	*sufganiyot*	'jelly doughnut'
68	سلاط	*salāṭ*	סלט	*salaṭ*	'salad'
69	سوبين	*sūbīn*	סובין	*subin*	'bran'
70	سوكريوت	*sūkariyūt*	סוכריות	*sukariyot*	'candies'
71	سيجاريم	*sījārīm*	סיגרים	*sigarim*	'cigars' (pastry rolls)

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
72	سيجاريوت	*sījāryūt*	סיגריות	*sigaryot*	‘cigarettes’ (pastry rolls)
73	سيروبيم	*sīrūbīm*	סירופים	*siropim*	‘syrups’
74	شكدي مراك	*shikidī marāk*	שקדי מרק	*sheqede maraq*	‘soup almonds’
75	شمريم	*shimarīm*	שמרים	*shemarim*	‘yeast’
76	شمير	*shamīr*	שמיר	*shamir*	‘dill’
77	شمينت	*shamīnit*	שמנת	*shamenet*	‘cream’
78	شمينت حموتسا	*shamīnit ḥamūtsā*	שמנת חמוצה	*shamenet ḥamutsah*	‘sour cream’
79	شمينت لبيشول	*shamīnit la-bishūl*	שמנת לבישול	*shamenet la-vishul*	‘cooking cream’
80	شمينت متوكا	*shamīnit mitūkā*	שמנת מתוקה	*shamenet metuqah*	‘sweet cream’
81	شنيتسل	*shnītsil*	שניצל	*shnitsel*	‘schnitzel’
82	شنيتسلونيم	*shnītsilūnīm*	שניצלונים	*shnitselonim*	‘small schnitzels’
83	شوكو	*shūkū*	שוקו	*shoqo*	‘chocolate milk’
84	شوكولاد	*shūkūlād*	שוקולד	*shokolad*	‘chocolate’
85	شوكوليت	*shūkūlīt*	שוקולית	*shoqolit*	‘chocolate powder’
86	شوم	*shūm*	שום	*shum*	‘garlic’
87	شيفون	*shīfūn*	שיפון	*shifon*	‘rye’
88	صبارينا	*ṣabārīnā*	סברינה	*sabarinah*	‘savarin’
89	عدسيم	*ʿadasīm*	עדשים	*ʿadashim*	‘lentils’ (also, small pieces of chocolate candy)
90	عرجليوت	*ʿarjaliyūt*	ערגליות	*ʿargaliyot*	‘roll cookies with filling’
91	عميد	*ʿamīd*	עמיד	*ʿamid*	‘resistant’
92	عوجاه حماه	*ʿūjāh ḥamāh*	עוגה חמה	*ʿugah ḥamah*	‘hot cake’
93	عوجوت	*ʿūjūt*	עוגות	*ʿugot*	‘cakes’
94	عوجيوت	*ʿūjiyūt*	עוגיות	*ʿugiyot*	‘cookies’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
95	عيريت	*ʿīrīt*	עירית	*ʿirit*	‘chives’
96	غليليوت	*ghlīliyūt*	גלילִיות	*gliliyot*	‘rolls’
97	فانيل	*fānīl*	ווניל	*vanil*	‘vanilla’
98	كاشيو	*kāshyū*	קשיו	*qashyo*	‘cashew’
99	كافيه شاحور	*kāfīh shāḥūr*	קפה שחור	*qafeh shaḥor*	‘black coffee’
100	كافيه نميس	*kāfīh namīs*	קפה נמס	*qafeh names*	‘instant coffee’
101	كالورابي	*kālūrābī*	קולרבי	*qolerabi*	‘kohlrabi, turnip cabbage’
102	كتسيتسوت	*kitsitsūt*	קציצות	*qetsitsot*	‘meatballs’
103	كتسيفت	*katsīfit*	קצפת	*qatsefet*	‘whipped cream’
104	كرمبو	*kirimbū*	קרמבו	*qerembo*	‘chocolate-coated marshmallow treats’
105	كلاسي	*klāsī*	קלאסי	*qlasi*	‘classic’ (as in type of pastry)
106	كوراسونيم	*kūrāsūnīm*	קרואסונים	*qeruasonim*	‘croissants’
107	كوسميت	*kūsmīt*	כוסמת	*kusemet*	‘buckwheat, kasha’
108	كوسمين	*kūsmīn*	כוסמין	*kusmin*	‘spelt’
109	كوكوس	*kūkūs*	קוקוס	*qoqos*	‘coconut’
110	كوندیتوريا	*kūndītūryā*	קונדיטוריה	*qondiṭoryah*	‘confectionery’
111	كينمون	*kīnamūn*	קינמון	*qinamon*	‘cinnamon’
112	كينوحيم	*kīnūḥīm*	קינוחים	*kinuḥim*	‘dessert’
113	لحميت	*laḥmīt*	לחמית	*laḥmit*	‘cracker’
114	لخمنيوت	*lakhmanyūt*	לחמניות	*laḥmanyot*	‘buns’
115	لمونعنع	*limūnaʿnaʿ*	לימונענע	*limonaʿnaʿ*	‘mint lemonade’
116	ليحم	*līḥim*	לחם	*leḥem*	‘bread’
117	مجاش تشيبس	*majāsh tshībs*	מגש צ'יפס	*magash tships*	‘chips tray’
118	محيت	*miḥīt*	מחית	*meḥit*	‘puree’
119	مراق ريجيل	*marāq rījīl*	מרק רגל	*maraq regel*	‘trotters soup’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
120	مراك عوف	*marāk ʿūf*	מרק עוף	*maraq ʿof*	‘chicken flavoured bouillon’
121	مرجرينا	*marjarīnā*	מרגרינה	*margarinah*	‘margarine’
122	مرير	*marīr*	מריר	*marir*	‘bitter’
123	معدان	*maʿdān*	מעדן	*maʿadan*	‘pudding’
124	معدان كاييتس	*maʿdān kāyīts*	מעדן קיץ	*maʿadan qayets*	‘summer pudding’
125	معدنياه	*maʿdaniyāh*	מעדניה	*maʿadaniyah*	‘pastry shop’
126	معوراف يروشالمي	*miʿūrāf yirūshālmī*	מעורב ירושלמי	*meʿorav yeroshalmi*	‘mixed grill’
127	معوشان	*miʿūshān*	מעושן	*meʿushan*	‘smoked’
128	ممراح	*mimrāḥ*	ממרח	*mimraḥ*	‘spread’
129	ممراح تمريم	*mimrāḥ timārīm*	ממרח תמרים	*memraḥ temarim*	‘date spread’
130	موتسريلا	*mūtsarīlā*	מוצרלה	*motsarelah*	‘mozzarella’
131	موكباتس	*mūkbāts*	מוקפץ	*muqpats*	‘sauté or pan frying’
132	موكرام	*mūkrām*	מוקרם	*muqram*	‘creamy’
133	مينتا	*mīntā*	מנטה	*menṭa*	‘mint’
134	نشنوشيم	*nishnūshīm*	נשנושים	*nishnushim*	‘snacks’
135	نقنقيوت	*naqniqiyūt*	נקניקיות	*naqniqiyot*	‘sausages’
136	نكترينا	*naktarīnā*	נקטרינה	*neqṭarinah*	‘nectarine’
137	نيار كيسف	*niyār kīsif*	ניר כסף	*neyar kesef*	‘tin foil’
138	هافوخ	*hāfūkh*	הפוך	*hafukh*	‘coffee with milk’
139	يوجورط	*yūjūrṭ*	יוגורט	*yogurṭ*	‘yogurt’
Education and institutions					
140	أدريخلوت	*ʾadrīkhalūt*	אדריכלות	*adrikhalut*	‘architecture’
141	اشكول	*ʾishkūl*	אשכול	*eshkol*	‘cluster’
142	أكاديميزاتسيا	*ʾakadīmīzātsyā*	אקדמיזציה	*aqademizatsyah*	‘academization’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
143	الكترو-أوبتيكا	*ʾiliktrū-ʾubtīkā*	אלקטרו-אופטיקה	*eleqṭro-optiqah*	‘electro-optics’
144	الكترونيكا	*ʾiliktrūnīkā*	אלקטרוניקה	*eleqṭroniqah*	‘electronics’
145	أميرام	*ʾamīrām*	אמי"רם	*amiram*	‘English exam for university’
146	أوبتمتريا	*ʾūbtimitriyā*	אופטומטריה	*opṭometreyah*	‘optometry’
147	أوتونوميا	*ʾūtūnūmyā*	אוטונומיה	*oṭonomyah*	‘autonomy’
148	أوديتوريوم	*ʾūdītūryūm*	אודיטוריום	*odiṭoryom*	‘auditorium’
149	أوفيك حداش	*ʾūfīk ḥadāsh*	אופק חדש	*ofeq ḥadash*	‘new horizon’, the title of a school reform
150	ايشور	*ʾīshūr*	אישור	*ishur*	‘confirmation’
151	ايشور لموديم	*ʾīshūr līmūdīm*	אישור לימודים	*ishur limudim*	‘confirmation of enrolment’
152	بجروت	*bajrūt*	בגרות	*bagrut*	‘matriculation exams’
153	بجروت شاليم	*bajrūt shālīm*	בגרות שלם	*bagrut shalem*	‘full matriculation exams’
154	بسول	*basūl*	פסול	*pasul*	‘unacceptable’
155	بسيخوترابيا	*bsīkhūtrābyā*	פסיכותרפיה	*psikhoterapyah*	‘psychotherapy’
156	بسيخودالي	*bsīkhūdālī*	פסיכודלי	*psikhodali*	‘psychedelic’
157	بسيخولوج	*bsīkhūlūj*	פסיכולוג	*psikholog*	‘psychologist’
158	بسيخولوجيا	*bsīkhūlūjyā*	פסיכולוגיה	*psikhologyah*	‘psychology’
159	بسيخومتري	*bsīkhūmitrī*	פסיכומטרי	*psikhumeṭri*	‘psychometric entrance test’
160	بسيخياتري	*bsīkhiyātri*	פסיכיאטרי	*psikhiyaṭriyah*	‘psychiatric’
161	بنيان راشي	*binyān rāshī*	בניין ראשי	*binyan rashi*	‘main building’
162	بوستريم	*būstirīm*	פוסטרים	*posṭerim*	‘posters’
163	بونوس	*būnūs*	בונוס	*bonus*	‘bonus’
164	بيت هاستودينت	*bīt hā-stūdīnt*	בית הסטודנט	*beit ha-sṭudenṭ*	‘student center’
165	بيداجوجيا	*bīdājūjyā*	פדגוגיה	*pidagogyah*	‘pedagogy’
166	بيرح	*bīraḥ*	פר"ח	*peraḥ*	‘tutoring project’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
167	بيسجا	*bīsjā*	פיסג"ה	*pisgah*	‘a regional institution for the development of teaching staff’
168	بينوني	*binūnī*	בינוני	*binoni*	‘medium’
169	بيو- الكترونيكا	*biyū-ʾiliktrūnīkā*	ביו-אלקטרוניקה	*biyo-eleqtroniqa*	‘bioelectronics’
170	تخناه	*tukhnāh*	תוכנה	*tokhnah*	‘software’
171	تخنيت شنانيم	*tukhnīt shinānīm*	תוכנית שיננות	*tokhnit shinanut*	‘dental hygienist program’
172	تسهرونيم	*tsaharūnīm*	צהרונים	*tsaharonim*	‘afternoon child care facility’
173	تسيون عوفير	*tsiyūn ʿūfīr*	ציון עובר	*tsiyunʿover*	‘passing grade’
174	تسيون ماغين	*tsiyūn māghīn*	ציון מגן	*tsiyun magen*	‘protective mark’
175	تعودات هورأه	*tiʿūdāt hūrʾāh*	תעודת הוראה	*teʿudat horaʾah*	‘teaching certificate’
176	تكشورت	*tikshūrit*	תקשורת	*tiqshoret*	‘communication’
177	تكشوف	*tikshūf*	תקשוב	*tiqshuv*	‘teleprocessing’
178	توخنيت ليموديم نوسيفت	*tūkhnīt līmūdīm nūsīfit*	תוכנית לימודים נוספת	*tokhnit limudim nosefet*	‘additional curriculum’
179	جانينيت	*jānīnīt*	גננת	*ganenet*	‘kindergarten teacher’
180	جرافيكا	*jirāfīkā*	גרפיקה	*gerafiqah*	‘graphic arts’
181	جيشور	*jishūr*	גישור	*gishur*	‘mediation’
182	حشاد	*ḥashād*	חשד	*ḥashad*	‘suspicion’
183	حوجيم	*ḥūjīm*	חוגים	*ḥugim*	‘extracurricular activity’
184	حوزير منكال	*ḥūzīr mankāl*	חוזר מנכ"ל	*ḥozer mankal*	‘general manager's circular or notice’
185	حوفش	*ḥūfîsh*	חופש	*ḥofesh*	‘holiday’
186	حومش	*ḥūmish*	חומ"ש	*ḥomesh*	‘five-year plan’
187	حينوخ	*ḥīnūkh*	חינוך	*ḥinukh*	‘education’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
188	حينوخ ميوحاد	*ḥīnūkh miyūḥād*	חינוך מיוחד	*ḥinukh meyoḥad*	‘special education’
189	دياغراما	*diyāghrāmā*	דיאגרמה	*diyagramah*	‘diagram’
190	ديسلكتسيا	*dīsliktsyā*	דיסלקציה	*disleqtsyah*	‘dyslexia’
191	ديكانات هاستودنتيم	*dīkānāt hā-stūdintīm*	דיקנט הסטודנטים	*diqanaṭ ha-sṭudenṭim*	‘dean of students’
192	رأيون	*riʾayūn*	ריאיון	*riʾayon*	‘interview’
193	رفلكسلوجيا	*rifliksulūjyā*	רפלקסולוגיה	*refleqsologyah*	‘reflexology’
194	روبوتيكا	*rūbūtīkā*	רובוטיקה	*roboṭiqah*	‘robotics’
195	ريبوي بعيسوك	*rībūy ba-ʿīsūk*	ריפוי בעיסוק	*ripuy ba-ʿisoq*	‘occupational therapy’
196	ريبوي فديبور	*rībūy fa-dībūr*	ריפוי בדיבור	*ripuy ba-dibur*	‘speech therapy’
197	زكاي	*zakāy*	זכאי	*zakay*	‘eligible’
198	ستاتيستيكا	*stātīstīkā*	סטטיסטיקה	*sṭaṭisṭiqah*	‘statistics’
199	ستاج	*stāj*	סטאז'	*sṭaj*	‘internship’
200	ستاجيريم	*stājīrīm*	סטאז'רים	*sṭajerim*	‘interns’
201	ستاندرتي	*stāndartī*	סטאנדרטי	*sṭandarṭi*	‘normal’
202	ستيريوتيب	*stīryūtīb*	סטראוטיפ	*sṭeriʾoṭip*	‘stereotype’
203	سمينياريون	*simīnāryūn*	סמינריון	*seminaryon*	‘seminar’
204	سياعت	*sayāʿat*	סייעת	*sayyaʿat*	‘assistant’
205	سيعود	*sīʿūd*	סיעוד	*siʿud*	‘nursing’
206	سيلبوس	*sīlabūs*	סילבוס	*silabus*	‘syllabus’
207	شلاف	*shalāf*	שלב	*shalav*	‘stage’
208	شيكوم شخونوت	*shīkūm shikhūnūt*	שיקום שכונות	*shikum shekhunot*	‘project renewal, neighborhood upgrading program in Israel’
209	شيننيت	*shīnanīt*	שיננית	*shinanit*	‘dental hygienist’
210	عال تناي عفريت	*ʿāl tnāy ʿifrīt*	על תנאי עברית	*ʿal-tnay ʿivrit*	‘on condition of passing the Hebrew language requirement’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
211	عتناي	*ʿatnāy*	על תנאי	*ʿal-tnay*	‘conditional’
212	عتيدنا	*ʿatīdunā*	עתידנו	*ʿatideno*	‘our future’
213	عوزيرت	*ʿūzīrit*	עוזרת	*ʿozeret*	‘assistant’
214	عيتسوف بنيم	*ʿītsūf binīm*	עיצוב פנים	*ʿitsuv penim*	‘interior design’
215	فاعادات حريجيم	*fā ʿādāt ḥarījīm*	וועדת חריגים	*va ʿadat ḥarigim*	‘exceptions committee’
216	فلايريم	*flāyarīm*	פליירים	*flayerim*	‘flyers’
217	فيزوترابيا	*fīzūtrābyā*	פיזיותרפיה	*fizyoterapyah*	‘physiotherapy’
218	فيزيوتيرابيست	*fīzyūtīrābīst*	פיזיותרפיסט	*fizyoterapisṭ*	‘physiotherapist’
219	كدام مخيناه	*kidām mikhīnāh*	קדם מכינה	*qedam mekhinah*	‘pre preparatory program’
220	كلاسير	*kilāsīr*	קלסר	*qelaser*	‘ring binder’
221	كورسي مافو	*kūrsī māfū*	קורסי מבוא	*qorsi mavo*	‘introductory courses’
222	ليكويي لميدا	*līkūyī limīdā*	ליקויי למידה	*liqoyi limidah*	‘learning disabilities’
223	ماتيا	*mātyā*	מתי"א	*matya*	‘local or regional support center’
224	متناس	*matnās*	מתנ"ס	*matnas*	‘youth center (literally: culture, youth and sports center)’
225	مخللاه	*mikhlalāh*	מכללה	*mikhlalah*	‘college’
226	مخيناة	*mikhīnāh*	מכינה	*mekhinah*	‘preparatory program’
227	مخيناة أفيف	*mikhīnāt ʾafīf*	מכינת אביב	*mekhinat aviv*	‘spring preparatory program’
228	مخيناة بوجريم لبجروت	*mikhīnāt būjrīm li-bajrūt*	מכינת בוגרים לבגרות	*mekhinat bogrim le-bagrut*	‘preparatory program for graduates to study for high school certificate’
229	مخيناة عيريف	*mikhīnāt ʿīrīf*	מכינת ערב	*mekhinat ʿerev*	‘evening preparatory program’
230	مخيناة يوم	*mikhīnāt yūm*	מכינת יום	*mekhinat yom*	‘day preparatory program’
231	مدعي محشيف	*madaʿī maḥashīf*	מדעי מחשב	*madaʿi maḥshev*	‘computer science’

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232	مدعي هاحاي	*madaʿī hā-ḥāy*	מדעי החי	*madaʿi ha-ḥay*	‘animal sciences’
233	مركاز تسعيريم	*mirkāz tsiʿīrīm*	מרכז צעירים	*merkaz tseʿirim*	‘youth center’
234	مسراد حينوح	*misrād ḥīnūkh*	משרד חינוך	*misrad ḥinukh*	‘ministry of education’
235	مسلول	*maslūl*	מסלול	*maslul*	‘path, lane, track’
236	مشباتيم	*mishbātīm*	משפטים	*mishpaṭim*	‘law’
237	مشبحتون	*mishbaḥtūn*	משפחתון	*mishpaḥton*	‘pre-nursery play group’
238	مطاح	*maṭāḥ*	מט"ח	*maṭaḥ*	‘the center for educational technology’
239	معفدا رفوئيت	*maʿfadā rifūʾīt*	מעבדה רפואית	*maʿbadah refuʾit*	‘medical lab’
240	معونوت	*maʿūnūt*	מעונות	*maʿonot*	‘dorms’
241	معونوت يوم	*maʿūnūt yūm*	מעונות יום	*maʿonot yom*	‘day care center’
242	منهالا	*minhālā*	מנהלה	*minhalah*	‘administration’
243	مور	*mūr*	מור	*mor*	‘medical faculty exam’
244	موسماخ	*mūsmākh*	מוסמך	*musmakh*	‘certified’
245	موعدون	*mūʿadūn*	מועדון	*moʿadon*	‘club’
246	موعدون نوعر	*mūʿadūn nūʿar*	מועדון נוער	*moʿadon noʿar*	‘youth club’
247	موعدونيت	*mūʿdūnīt*	מועדונית	*moʿadonit*	‘after-school child care facility’
248	موعيد حوريف	*mūʿīd ḥūrīf*	מועד חורף	*moʿed ḥoref*	‘winter exam’
249	موعيد كاييتس	*mūʿīd kāyīts*	מועד קיץ	*moʿed kayits*	‘summer exam’
250	موفيت	*mūfīt*	מופת	*mofet*	‘mathematics, physics and community culture’
251	ميتساف	*mītsāf*	מיצ"ב	*mitsav*	‘measures of school effectiveness and growth’
252	ميكاترونيكا	*mīkātrūnīkā*	מכטרוניקה	*mekhaṭeroniqah*	‘mechatronics’
253	ميكرو- الكترونيكا	*mīkrū-ʾiliktrūnīkā*	מיקרו-אלקטרוניקה	*miqro-eleqtroniqah*	‘microelectronics’

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254	ميكود	*mīkūd*	מיקוד	*miqud*	‘focus on exam materials’
255	ميلوت كيشور	*mīlūt kīshūr*	מילות קישור	*milot qishur*	‘conjunctions’
256	نعوريم	*niʿūrīm*	נעורים	*neʿorim*	‘youth’
257	ننوتكنولوجيا	*nanūtiknūlūjyā*	ננוטכנולוגיה	*nanoṭekhnologyah*	‘nanotechnology’
258	نيهول	*nīhūl*	ניהול	*nihul*	‘management’
259	نيهول معريخوت بريئوت	*nīhūl maʿrīkhūt brīʾūt*	ניהול מערכות בריאות	*nihul maʿarakhot briʾut*	‘health systems management’
260	هاسفريا هامركزيت	*hā-sifriyā hā-mirkazīt*	הספריה המרכזית	*ha-sifriyah ha-merkazit*	‘central library’
261	هشتلموت	*hishtalmūt*	השתלמות	*hishtalmut*	‘continuing education program’
262	هفرعوت بتكشورت	*hafraʿūt bi-tikshūrit*	הפרעות בתקשורת	*hafraʿot be-teqshoret*	‘communication disorders’
263	هندسئي	*handasaʾī*	הנדסאי	*handesaʾi*	‘practical engineer’
264	هورئا	*hūraʾā*	הוראה	*horaʾah*	‘teaching’
265	هيخل هتربوت	*hīkhal ha-tarbūt*	היכל התרבות	*hekhal ha-tarbut*	‘performing arts center’
266	هيسجيم	*hīsijīm*	הישגים	*hesegim*	‘achievements’
267	هيشليم	*hīshlīm*	השלים	*hishlim*	‘completed’ (adj.)
268	هيلا	*hīlā*	היל"ה	*hilah*	‘completion of basic and educational studies’
269	ياعيل	*yāʿīl*	יעל	*yaʿel*	‘Hebrew exam for university’
270	ييعوتس	*yīʿūts*	ייעוץ	*yiʿuts*	‘consultation’
Body and healthcare					
271	إبليبسيا	*ʾibilībsyā*	אפילפסיה	*epilepsyah*	‘epilepsy’
272	أرموتورابيا	*ʾarūmūtūrābyā*	ארומתרפיה	*aromaterapyah*	‘aromatherapy’
273	إستتيكا	*ʾistitīkā*	אסתטיקה	*esteṭiqah*	‘aesthetics’
274	إشبوز يوم يلديم	*ʾishbūz yūm yiladīm*	אשפוז יום ילדים	*ishpuz yom yeladim*	‘hospital admission, hospitalization’

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275	أنتيبيوتيكا	*ʾantībiyūtīkā*	אנטיביוטיקה	*anṭibeyoṭiqah*	‘antibiotic’
276	أورتوبيديا	*ʾūrtūbīdyā*	אורתופדיה	*ortopedyah*	‘orthopedics’
277	بروبيوتيكا	*brūbiyūtikā*	פרוביוטיקה	*probiyoṭiqah*	‘probiotic’
278	بيت أبوت	*bīt ʾabūt*	בית אבות	*beit avot*	‘retirement home’
279	بيتواح مشليم	*bītūwāḥ mashlīm*	ביטוח משלים	*biṭuwaḥ mashlim*	‘supplemental insurance’
280	تزمن	*tazmin*	תזמין	*tazmin*	‘she is booking’
281	تسيلياك	*tsīlyāk*	צליאק	*tselyak*	‘celiac’
282	حيروم	*ḥīrūm*	חירום	*ḥerum*	‘emergency’
283	دمنتسيا	*dimintsyā*	דמנציה	*dementsyah*	‘dementia’
284	ديالليزا	*diyālīzā*	דיאליזה	*diyalizah*	‘dialysis’
285	ديكئون	*dīkaʾūn*	דיכאון	*dikaʾon*	‘depression’
286	ديِيتا	*diyītā*	דיאטה	*diyeṭah*	‘diet’
287	سنتور	*sintūr*	צנתור	*tsintur*	‘catheterization’
288	شيروت فسيخولوجي	*shīrūt fsīkhūlūjī*	שירות פסיכולוגי	*shirut psikhologi*	‘psychological help’
289	شيكوم	*shīkūm*	שיקום	*shikum*	‘rehabilitation’
290	كوبات حوليم كلاليت	*kūbāt ḥūlīm klālīt*	קופת חולים כללית	*qupat ḥolim kelalit*	‘clalit medical center’
291	كوبات حوليم لؤميت	*kūbāt ḥūlīm liʾūmīt*	קופת חולים לאומית	*qupat ḥolim leʾumit*	‘national medical center’
292	كوبات حوليم مؤحيدت	*kūbāt ḥūlīm miʾūḥīdit*	קופת חולים מאוחדת	*qupat ḥolim meʾuḥedet*	‘united medical center’
293	كوبوت حوليم	*kūbūt ḥūlīm*	קופות חולים	*qupot ḥolim*	‘health maintenance organizations’
294	مخون	*makhūn*	מכון	*makhon*	‘institute’
295	مخون ليف	*makhūn līf*	מכון לב	*makhon lev*	‘heart (disease) institute’
296	مدراسيم	*midrāsīm*	מדרסים	*midrasim*	‘insoles’

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297	موكيد	*mūkīd*	מוקד	*moqed*	‘telephone service center’
298	ميجرينا	*mījrīnā*	מיגרנה	*migrenah*	‘migraine’
299	ميدوزا	*mīdūzā*	מדוזה	*meduzah*	‘jellyfish’
300	ميزوترابيا	*mīzūtrābyā*	מזותרפיה	*mizuterapyah*	‘mesotherapy’
301	ميون	*miyūn*	מיון	*miyun*	‘emergency, triage’ (in hospital)
302	نتروباتيا	*natrūbātyā*	נטורופתיה	*naṭuropatyah*	‘naturopathy’
303	نخيم	*nakhīm*	נכים	*nakhim*	‘persons with a physical disability’
304	هتحيفوت	*hitḥayfūt*	התחייבות	*hitḥayvut*	‘commitment; obligation’
305	هليخون	*halīkhūn*	הליכון	*halikhon*	‘walker’
Housing and construction					
306	أكريليت	*ʾakrīlīt*	אקרילית	*aqrilit*	‘acrylic’
307	أمباطيا	*ʾambāṭyā*	אמבטיה	*ambaṭyah*	‘bath, bathtub; bathroom’
308	أوتوماتسيا	*ʾūtūmātsyā*	אוטומציה	*oṭomatseyah*	‘automation’
309	برزول	*birzūl*	פירזול	*pirzul*	‘affixing’ (metal fixtures or accessories)
310	بركيت	*barkīt*	פרקט	*parqet*	‘parquet floor’
311	بلوك	*blūk*	בלוק	*bloq*	‘building block’
312	بورتسلان	*būrtsilān*	פורצלן	*portselan*	‘porcelain’
313	بويلر	*būylar*	בוילר	*boyler*	‘boiler’
314	تريس	*trīs*	תריס	*tris*	‘blinds’
315	حومريم	*ḥūmarīm*	חומרים	*ḥomarim*	‘materials’
316	حيموم	*ḥīmūm*	חימום	*ḥimum*	‘heating, warming’ (for water)
317	خومر بنيان	*khūmir binyān*	חומר בנין	*ḥomer binyan*	‘building materials’
318	ديراه لهسكراه	*dīrāh li-haskarāh*	דירה להשכרה	*dirah le-haskarah*	‘apartment for rent’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
319	سبوتيم	*sbūtīm*	ספוטים	*spoṭim*	‘spotlights’
320	شايش	*shāyish*	שיש	*shayish*	‘marble; (colloquial) countertop’
321	شباخطل	*shibākhṭil*	שפכטל	*shepakhṭel*	‘spatula’
322	شليخط	*shilīkhṭ*	שליכט	*shelikhṭ*	‘skim coat, an upper thin layer of plaster on a wall’
323	شيبوتس	*shībūts*	שיפוץ	*shiputs*	‘renovation’
324	شيروتيم	*shīrūtīm*	שירותים	*sherutim*	‘toilet’
325	شيكون	*shīkūn*	שיכון	*shikun*	‘housing project’
326	كبلان	*kablān*	קבלן	*qablan*	‘contractor’
327	كبلان شيبوتسيم	*kablān shībūtsīm*	קבלן שיפוצים	*qablan shiputsim*	‘renovation contractor’
328	كراميكا	*kirāmīkā*	קרמיקה	*qeramiqah*	‘ceramic’
329	كلكار	*kalkār*	קלקר	*qalqar*	‘styrofoam’
330	ماعتس	*mā ʿats*	מע"צ	*ma ʿats*	‘public works authority’
331	محير لمشتكن	*miḥīr la-mishtakin*	מחיר למשתכן	*meḥir la-mishtaken*	‘price for occupant’ (subsidized housing project)
332	مزليج	*mazlīj*	מזלג	*mazleg*	‘forklift’
333	مزنون	*maznūn*	מזנון	*miznon*	‘buffet’ (dining room furniture)
334	مشتاح	*mishtāḥ*	משטח	*mishṭaḥ*	‘pallet’
335	مشتليفت	*mishtalīfit*	משתלבת	*mishtalevet*	‘paving (stone)’
336	مطبخون	*miṭbakhūn*	מטבחון	*miṭbaḥon*	‘kitchenette’
337	معليت	*maʿalīt*	מעלית	*maʿalit*	‘elevator’
338	مكلحون	*miklaḥūn*	מקלחון	*miqlaḥon*	‘shower stall’
339	منوف	*manūf*	מנוף	*manof*	‘crane’

Fashion and grooming

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
340	بجديم	*bijadīm*	בגדים	*begadim*	'(articles of) clothing'
341	بديكور	*bidīkūr*	פדיקור	*pediqur*	'pedicure'
342	بسيم	*basīm*	פסים	*pasim*	'streaks'
343	بنياة	*biniyāh*	בנייה	*beniyah*	'nail fill'
344	تخروت	*takharūt*	תחרות	*taḥarot*	'laces'
345	تخشيتيم	*takhshītīm*	תכשיטים	*takhshiṭim*	'pieces of jewelry'
346	تلتليم	*taltalīm*	תלתלים	*taltalim*	'curls' (hair)
347	توسفوت	*tūsafūt*	תוספות	*tosafot*	'extensions'
348	تونيكا	*tūnīkā*	טוניקה	*ṭuniqah*	'tunic'
349	تيبول	*tībūl*	טיפול	*ṭipul*	'care, treatment'
350	تيبول بنيم	*tībūl banīm*	טיפול פנים	*ṭipul panim*	'face treatment'
351	تيبول يوفي	*tībūl yūfī*	טיפול יופי	*ṭipul yofi*	'beauty treatment'
352	شرشيرت	*sharshīrit*	שרשרת	*sharsheret*	'chain'
353	شعفا	*shaʿafā*	שעווה	*shaʿavah*	'wax'
354	شيزوف	*shīzūf*	שיזוף	*shizuf*	'suntanning'
355	عركا	*ʿirkā*	ערכה	*ʿerkah*	'kit'
356	عليونيت	*ʿilyūnīt*	עליונית	*ʿelyonit*	'vest, bolero; tunic'
357	عيتسوف	*ʿītsūf*	עיצוב	*ʿitsov*	'design'
358	فين	*fīn*	פן	*fen*	'hair dryer or hairstyling with a blow-dryer'
359	كعكوع	*kaʿkūʿ*	קַעֲקוּעַ	*qaʿaquaʿ*	'tattoo'
360	كوتسيم	*kūtsīm*	קוצים	*qotsim*	'spiky hairstyle'
361	كوسماتيكا	*kūsmātīkā*	קוסמטיקה	*qosmeṭiqah*	'cosmetics'
362	لاك	*lāk*	לק	*laq*	'nail polish'
363	محزيك	*maḥzīk*	מחזיק (מפתחות)	*maḥziq*	'key chain'
364	محليك	*maḥlīk*	מחליק	*maḥliq*	'hair straightener'

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
365	مسيخا	*masīkhā*	מסיכה	*masekhah*	‘mask’
366	مفتساع	*miftsāʿ*	מבצע	*mivtsaʿ*	‘sale’
367	منيكور	*manīkūr*	מניקור	*maniqur*	‘manicure’
368	موتاج	*mūtaj*	מותג	*mutag*	‘brand name’
369	موتسار هشاناه	*mūtsār ha-shānāh*	מוּצָר הַשָּׁנָה	*mutsar ha-shanah*	‘product of the year’
370	موتسريم	*mūtsarīm*	מוצרים	*mutsarim*	‘products’
371	هاحلاكا	*hāḥlākā*	החלקה	*haḥlaqah*	‘straightening hair’
372	هلحما	*halḥamā*	הלחמה	*halḥamah*	‘hair extensions’ (clipped or glued)
Economics					
373	أحوز	*ʾaḥūz*	אחוז	*aḥuz*	‘percentage’
374	أرنونا	*ʾarnūnā*	ארנונה	*arnonah*	‘property tax’
375	أشراي	*ʾashrāy*	אשראי	*ashray*	‘credit’
376	بروطو	*brūṭū*	ברוטו	*bruṭo*	‘gross’ (income)
377	بنسيا	*binsiyā*	פנסיה	*penseyah*	‘pension’
378	بنسيا تكسيفيت	*binsiyā taksīfīt*	פנסיה תקציבית	*penseyah taqtsivit*	‘budgetary pension fund’
379	بنكات	*bankāṭ*	בנקט	*banqaṭ*	‘ATM’
380	تخنيوت	*tukhniyūt*	תוכניות	*tukhniyot*	‘plans, programs’
381	تشلوم	*tashlūm*	תשלום	*tashlum*	‘payment’
382	تلوش	*tlūsh*	תלוש	*tlush*	‘pay slip’
383	توخنيت حيساخون	*tūkhnīt ḥīsākhūn*	תוכנית חיסכון	*tukhnit ḥisakhon*	‘savings plan’
384	حشبونيت	*ḥīshbūnīt*	חשבונית	*ḥeshbonit*	‘invoice’
385	دمي هبرئه	*dimī habrīʾah*	דמי הבראה	*deme havraʾah*	‘convalescence pay’
386	ريبيت	*rībīt*	ריבית	*ribit*	‘interest’ (banking)
387	سوبسيديا	*sūbsīdyā*	סובסידיה	*subsidyah*	‘subsidy’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
388	شيكل حداش	*shīkil ḥadāsh*	שקל חדש	*sheqel ḥadash*	‘new Shekel’ (Israel's currency since 1985)
389	طوفس	*ṭūfis*	טופס	*ṭofes*	‘form’
390	كاسبومات	*kāsbūmāt*	כספומט	*kaspomaṭ*	‘ATM’
391	كوبوت	*kūbūt*	קופות	*qupot*	‘cash boxes’
392	كوبوت جيمل	*kūbūt jīmil*	קופות גמל	*qupot gemel*	‘provident funds’
393	كوبونيم	*kūbūnīm*	קופונים	*quponim*	‘coupons’
394	كيرن بنسيا	*kīrin binsiyā*	קרן פנסיה	*keren penseyah*	‘pension fund’
395	كيرن هشتلموت	*kīrin hishtalmūt*	קרן השתלמות	*keren hishtalmut*	‘advanced study fund’
396	ماعم	*mā ʿam*	מע"מ	*maʿam*	‘value added tax’
397	محيرون	*miḥīrūn*	מחירון	*meḥiron*	‘car price list’
398	مزومان	*mizūmān*	מזומן	*mezuman*	‘cash’
399	مسجيرت	*masjīrit*	מסגרת	*misgeret*	‘line of credit’
400	مسكورت	*maskūrit*	משכורת	*maskoret*	‘salary’
401	مشكنتا	*mishkantā*	משכנתא	*mashkanta*	‘mortgage’
402	ممشكنه	*mumashkanah*	ממושכנת	*memushkenet*	‘mortgaged’
403	مينوس	*mīnūs*	מינוס	*minus*	‘overdraft’
404	نيطو	*nīṭū*	נטו	*neṭo*	‘net’
405	هلفئه	*halfaʾah*	הלוואה	*halvaʾah*	‘loan’
Technology					
406	أبليكاتسيا	*ʾablīkātsyā*	אפליקציה	*apliqatsyah*	‘application’
407	أزعكا	*ʾazʿakā*	אזעקה	*azʿaqah*	‘alarm’
408	أوتوماتي	*ʾūtūmātī*	אוטומטי	*oṭomaṭi*	‘automatic’
409	بلاطه	*balāṭah*	פלטה	*plaṭah*	‘single electric burner’
410	بلفون	*bilifūn*	פלאפון	*pelefon*	‘cellular telephone’
411	بيومتريت	*biyūmitrīt*	ביומטרית	*biyometrit*	‘biometric’
412	تخنولوجيا	*ṭikhnūlūjyā*	טכנולוגיה	*ṭekhnologyah*	‘technology’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
413	تكليتور	*taklītūr*	תקליטור	*taqliṭor*	‘compact disc’
414	حسوم	*ḥasūm*	חסום	*ḥasum*	‘blocked’
415	ديبوريت	*dībūrīt*	דיבורית	*diburit*	‘accessory for hands free use of cellular phone in a vehicle; hands free telephone’
416	ديجيتاليت	*dījītālīt*	דיגיטלית	*digiṭalit*	‘digital’
417	روبوتيم	*rūbūtīm*	רובוטים	*roboṭim*	‘robots’
418	شلاط	*shalāṭ*	שלט	*shalaṭ*	‘remote control’
419	غوفاينا	*ghūfāynā*	גובייגא	*guvayna*	‘collect call, reverse-charge call’
420	كرتيس زخرون	*kartīs zikharūn*	כרטיס זכרון	*karṭis zikaron*	‘memory chip card’
421	كليطاه	*kilīṭāh*	קליטה	*qeliṭah*	‘reception’
422	كمبيوتر نياد	*kumbyūtir nayād*	מחשב נייד	*maḥashiv nayyad*	‘laptop’
423	كمكم	*kumkum*	קומקום	*qumqum*	‘electric kettle’
424	متعين	*matʿīn*	מטען	*maṭʿen*	‘charger’
425	متكان	*mitkān*	מתקן	*mitqan*	‘device’
426	مجين	*majīn*	מגן	*magen*	‘protector, shield’
427	محشيف	*maḥashīf*	מחשב	*maḥshev*	‘computer’
428	مخشير	*makhshīr*	מכשיר	*makhshir*	‘device’
429	مخشير كيشر	*makhshīr kīshir*	מכשיר קשר	*makhshir qesher*	‘communication device’
430	مزغان	*mazghān*	מזגן	*mazgan*	‘air conditioner’
431	مسوف ديجيتالي	*masūf dījītālī*	מסוף דיגיטלי	*masof digiṭali*	‘digital terminal’
432	معريخت	*maʿarīkhit*	מערכת	*maʿarekhet*	‘system’
433	مكرين	*makrīn*	מקרן	*maqren*	‘slide projector’
434	مكليدت	*maklīdit*	מקלדת	*miqledet*	‘keyboard’
435	موديم سوليلاري	*mūdīm sūlīlārī*	מודם סלולרי	*modem selolari*	‘cellular modem’
436	ميكروجال	*mīkrūjāl*	מיקרוגל	*miqrogal*	‘microwave oven’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
437	نياح	*nayāḥ*	נייח	*nayyaḥ*	‘fixed, immobile’
Transportation and cars					
438	أحريوت	*ʾaḥrayūt*	אחריות	*aḥrayut*	‘warranty’
439	أسفنوت	*ʾasfanūt*	אספנות	*asfanut*	‘collecting’
440	أفنوعيم	*ʾafnūʿīm*	אופנועים	*ofanoʿim*	‘motorcycles’
441	تحنا ديلك	*taḥanā dīlik*	תחנת דלק	*taḥanat deleq*	‘gas station’
442	تحنا مركزيت	*taḥanā mirkazīt*	תחנה מרכזית	*taḥanah merkazit*	‘central (bus) station’
443	تركتورون	*traktūrūn*	טרקטורון	*ṭraqṭoron*	‘all-terrain vehicle’
444	تسوميت	*tsūmīt*	צומת	*tsomet*	‘intersection, junction’
445	تندريم	*tandarīm*	טנדרים	*ṭenderim*	‘pickup trucks’
446	تيؤوريا	*tīʾūryā*	תיאוריה	*teʾoryah*	‘theoretical’ (driving test)
447	جيبون	*jībūn*	ג'יפון	*jipon*	‘SUV’
448	حيبوشيت	*ḥibūshīt*	חיפושית	*ḥiposhit*	Volkswagen ‘Beetle’
449	حنيون	*ḥanyūn*	חניון	*ḥanyon*	‘parking lot’
450	رمزور	*ramzūr*	רמזור	*ramzor*	‘traffic light’
451	سمتريلر	*simitrīlar*	סמיטריילר	*semiṭreyler*	‘semitrailer’
452	شيتح	*shītaḥ*	שטח	*sheṭaḥ*	‘field, off road’
453	عوكيف	*ʾūkīf*	עוקף	*ʿoqef*	‘bypass’
454	كتنوعيم	*katnūʿīm*	קטנועים	*qaṭnoʿim*	‘mini-bikes’
455	كورسات رعنون	*kūrsāt riʾnūn*	קורסי ריענון	*qursi riʿnun*	‘refresher’ courses
456	محسوم	*maḥsūm*	מחסום	*maḥsom*	‘checkpoint’
457	محليف	*maḥlīf*	מחלף	*meḥlaf*	‘interchange, junction’
458	مدرحوف	*madriḥūf*	מדרחוב	*midreḥov*	‘pedestrian mall’
459	مدرخا	*madrikhā*	מדרכה	*midrakhah*	‘sidewalk’
460	مرعيش	*marʿīsh*	מרעיש	*marʿish*	‘noisy’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
461	مسعيت	*masaʿīt*	משאית	*masaʾit*	'truck'
462	مونيت	*mūnīt*	מונית	*monit*	'taxi'
463	هسعوت	*hasaʿūt*	הסעות	*hasaʿot*	'shuttle'
464	يد ريشوناه	*yad rīshūnāh*	יד ראשונה	*yad rishonah*	'first owner'
Judaism					
465	أشكنازي	*ʾashkināzīm*	אשכנזים	*ashkenazim*	'Ashkenazic' (Jew of East European or Western origin)
466	بات ميتسفاه	*bāt mītsfāh*	בת מצווה	*bat mitsvah*	'Bat Mitzvah'
467	بار ميتسفاه	*bār mītsfāh*	בר מצוה	*bar mitsvah*	'Bar Mitzvah'
468	بوريم	*būrīm*	פורים	*purim*	'Purim'
469	بوريم ساميح	*būrīm sāmiyaḥ*	פורים שמח	*purim sameyaḥ*	'happy Purim'
470	بيساح	*bīsāḥ*	פסח	*pesaḥ*	'Passover'
471	بيساخ كشروت	*bīsākh kashrūt*	פסח כשרות	*pesaḥ kashrut*	'Passover kosher'
472	تناخ	*tanākh*	תנ"ך	*tanakh*	'Hebrew Bible'
473	حردنه	*ḥardanah*	-	-	'(the process of) becoming a religious Jew'
474	حريديت	*ḥarīdīt*	חרדית	*ḥaredit*	'orthodox Jew'
475	حنوكا	*ḥanūkā*	חנוכה	*ḥanukah*	'Hanukkah'
476	خاخام	*khākhām*	חכם	*ḥakham*	'sage (of Talmud)'
477	ربانوت راشيت	*rabānūt rāshīt*	רבנות ראשית	*rabanut rashit*	'main rabbinate'
478	ربنيم	*rabanīm*	רבנים	*rabanim*	'rabbis'
479	روش هشانا	*rūsh ha-shānā*	ראש השנה	*rosh ha-shanah*	'Rosh Hashanah'
480	سفاردي	*sifāradī*	ספרדי	*sefaradi*	'Sephardic' (Jew who comes from a Middle Eastern country)
481	سوكوت	*sūkūt*	סוכות	*sukot*	'Sukkot, Tabernacles'
482	شحيتا	*shiḥītā*	שחיטה	*sheḥiṭah*	'butchery'

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
483	شفوعوت	*shafūʿūt*	שָׁבוּעוֹת	*shavuʿot*	‘Shavuot’
484	شنا توفا	*shanā tūfā*	שנה טובה	*shanah ṭovah*	‘Happy Year’
485	طو بشباط	*ṭū bi-shbāṭ*	ט"ו בשבט	*ṭu bi-shevaṭ*	‘Tu Bishvat, fifteenth of Shvat’ (Jewish festival)
486	عوليم حداشيم	*ʿūlīm ḥadāshīm*	עולים חדשים	*ʿolim ḥadashim*	‘new immigrants’ (to Israel)
487	كشروت	*kashrūt*	כשרות	*kashrut*	‘all the laws concerning kosher food, dietary laws’
488	كشير	*kashīr*	כשר	*kasher*	‘kosher’
489	كيبور	*kībūr*	כיפור	*kipur*	‘Yom Kippur’
490	مزراحي	*mizrāḥīm*	מזרחים	*mizraḥim*	‘Mizrahi’ (Jew of Middle-Eastern origin)
491	هلاخا	*halākhā*	הלכה	*halakhah*	‘Halacha’ (Jewish law)
Jobs					
492	أريزا	*ʾarizā*	אריזה	*arizah*	‘packing’
493	بوحين	*būḥīn*	בוחן	*boḥen*	‘inspector, tester’
494	تخنائي	*takhnāʾī*	טכנאי	*ṭekhnaʾi*	‘technician’
495	تفوخ	*tifūkh*	תיווך	*tivukh*	‘brokerage (office)’
496	حدرنيم	*ḥadranīm*	חדרנים	*ḥadranim*	‘housekeepers’
497	سدرنيوت	*sadraniyūt*	סדרניות	*sadraniyot*	‘ushers’
498	سوخين	*sūkhīn*	סוכן	*sokhen*	‘agent’
499	شماي ريخيف	*shamāy rīkhīf*	שמאי רכב	*shamay rekhev*	‘car appraiser’
500	شيفيم	*shīfīm*	שפים	*shefim*	‘chefs’
501	عتصمائي	*ʿatṣmaʾī*	עצמאי	*ʿatsmaʾi*	‘independent’
502	كوبائيت	*kūbāʾīt*	קופאית	*qupaʾit*	‘cashier’
503	مخراز	*mikhrāz*	מכרז	*mikhraz*	‘job posting’
504	مشميرت	*mishmīrit*	משמרת	*mishmeret*	‘shift’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
505	מלתסריים	*miltsarīm*	מלצרים	*meltsarim*	‘waiters’
506	منهيل	*minahīl*	מנהל	*menahil*	‘manager’
507	منهيل عفودا	*minahīl ʿafūdā*	מנהל עבודה	*menahil ʿavodah*	‘foreman, headman’
508	نكيون	*nikayūn*	ניקיון	*niqayon*	‘cleaning’
509	هدبكوت	*hadbakūt*	הדבקות	*hadbaqot*	‘adhesive labels’
510	هزמנות	*hazmanūt*	הזמנות	*hazmanot*	‘orders’
Recreation					
511	بكتوت	*biktūt*	בקתות	*beqtot*	‘shacks, huts’
512	تسيدنيت	*tsiydanīt*	צידנית	*tseydanit*	‘picnic cooler’
513	تسيمر	*tsīmir*	צימר	*tsimer*	‘B&B’
514	حفياه	*ḥafayāh*	חוויה	*ḥavayah*	‘experience’
515	حوفش	*ḥūfîsh*	חופש	*ḥofesh*	‘(colloquial) holiday’
516	رخبال	*rakhbāl*	רכבל	*rakevel*	‘funicular railway’
517	زيكوكيم	*zīkūkīm*	זיקוקים	*ziquqim*	‘fireworks’
518	طييليت	*ṭayīlīt*	טיילת	*ṭayilet*	‘promenade’
519	كنيون	*kanyūn*	קניון	*qanyon*	‘mall’
520	كياكيم	*kayākīm*	קיאקים	*qayaqim*	‘kayaks’
521	متحام	*mitḥām*	מתחם	*mitḥam*	‘defined shopping area’
522	نوف	*nūf*	נוף	*nof*	‘view’
523	نوفش	*nūfîsh*	נופש	*nofesh*	‘holiday’
524	هكول كلول	*ha-kūl kalūl*	הכל כלול	*ha-kol kalul*	‘all inclusive’
Qualities – Attributes					
525	حافال	*ḥāfāl*	חבל	*ḥaval*	‘not worth it’
526	דודים	*dūdīm*	דודים	*dodim*	‘dudes’
527	روشم	*rūshim*	רושם	*roshem*	‘impression’
528	فرايريم	*frāyarīm*	פראיירים	*frayerim*	‘suckers’

	HL in Arabic script	Transliteration	Hebrew word	Transliteration	Gloss
529	مافيونير	*māfyūnīr*	מאפיונר	*mafyoner*	‘mafia member’
530	معنيين	*miʿanyīn*	מעניין	*meʿanyen*	‘interesting’
531	مماش	*mamāsh*	ממש	*mamash*	‘truly’
532	نودنيك	*nūdnīk*	נודניק	*nudniq*	‘nuisance, bothersome person’
Arts					
533	أورفزيون	*ʾūrfizyūn*	אירוויזיון	*erovizyon*	‘Eurovision’
534	بانتوميما	*bāntūmīmā*	פנטומימה	*panṭomimah*	‘pantomime’
535	بسيخوتيأترالي	*bsīkhūtīʾatrālī*	פסיכו-תיאטרלי	*psikho-teʾaṭrali*	‘psycho theatrical’
536	تكليتان	*taklītān*	תקליטן	*taqliṭan*	‘deejay’
537	ساطيرا	*sāṭīrā*	סטירה	*saṭirah*	‘satire’
538	سيمولاتسيا	*sīmūlātsyā*	סימולציה	*simulatsyah*	‘simulation’
539	هدميا	*hadmayā*	הדמיה	*hadmayah*	‘simulation’
Agriculture					
540	تفتوف	*tiftūf*	טפטוף	*ṭifṭuf*	‘dripping’
541	حمموت	*ḥamamūt*	חממות	*ḥamamot*	‘greenhouses’
542	ديشي	*dīshī*	דשא	*deshe*	‘lawn’
543	ريشيت	*rīshīt*	רשת	*reshet*	‘net’
Law					
544	بجاتس	*bajāts*	בג"ץ	*bagats*	‘high court of justice’
545	تكشير	*takshīr*	תקשיר	*taqshir*	‘civil service regulations’
546	موعاتسا أزوريت	*mūʿātsā ʾazūrīt*	מועצה אזורית	*moʿatsah azorit*	‘regional council’
547	موعاتسا مكوميت	*mūʿātsā mikūmīt*	מועצה מקומית	*moʿatsah meqomit*	‘local council’
Sports					
548	أتلتيكا	*ʾatlatīkā*	אתלטיקה	*atleṭiqah*	‘athletics’
549	إستديون	*ʾistadyūn*	אצטדיון	*itsṭadyon*	‘stadium’
550	إيروبيكا	*ʾirūbīkā*	אירוביקה	*erobiqah*	‘aerobics’

Appendix C

Sample Arabic Websites

Tables C1 and C2 show 20 Arabic-Israeli websites and 15 West Bank and Gaza websites (respectively) used for this study. Note that the data was collected from 630 websites published in Israel and 260 websites published in West Bank and Gaza between October and December 2019. The websites selected as samples represent those with the greatest number of occurrences of Hebrew loanwords.

Table C1

List of Top 20 Websites Consulted for the Israeli Corpus According to Occurrences of HLs

	Website name	HLs occurrences
1	panet.co.il	388
2	bokra.net	241
3	hasa.co.il	165
4	bldtna.co.il	161
5	taybee.net	142
6	almadar.co.il	138
7	almasar.co.il	127
8	arab48.com	124
9	haifanet.co.il	107
10	sonara.net	104
11	barq.co.il	89
12	farfeshplus.com	71
13	sabeel.co.il	70
14	kolzchut.org.il	66
15	yomnet.net	65
16	education.gov.il	63
17	mtbkhna.com	62
18	wen.co.il	62
19	shashe.net	61
20	jaljulia.net	57

Table C2

List of Top 15 Websites Consulted for the West Bank and Gaza Corpus According to Occurrences of HLs

	Website name	HLs occurrences
1	al-ayyam.ps	74
2	maannews.net	70
3	wafa.ps	64
4	palinfo.com	61
5	raya.ps	58
6	samanews.ps	53
7	watan.ps	50
8	nn.ps	43
9	paltoday.ps	41
10	khbrpress.ps	35
11	shasha.ps	35
12	hadfnews.ps	35
13	alhadath.ps	33
14	amad.ps	32
15	paltimeps.ps	25