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Rachel Lawrence April 10, 2024

Linguistic Landscapes in Tel Aviv

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An abstract of

a thesis submitted to the Faculty of Emory College of Arts and Sciences

of Emory University in partial fulfillment

of the requirements of the degree of

Bachelor of Arts with Honors

Department of Linguistics

2024

Abstract

Linguistic Landscapes in Tel Aviv
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Israel, a culturally and linguistically diverse society, features three predominant languages: Hebrew, Arabic, and English. The linguistic landscape (LL), defined as the visible and audible languages used in public, offers one compelling window into Israel's multilingualism, as the landscape serves as a mirror reflecting various facets of the social reality and the broader socio-political landscape within the state. Since Ben-Rafael et al.'s (2006) seminal study into the use of Hebrew, Arabic, and English in the public space in Israel, many economic, security, educational, and social policies have been enacted, collectively shaping Israel's contemporary landscape. This project aims to revisit Ben-Rafael's (2006) findings to determine if Hebrew continues to hold a dominant position across all LL sites under investigation or whether the presence of a significant Arabic-speaking minority challenges the overall predominance of Hebrew on signs. Additionally, this project will explore the influence of non-local languages, such as English, in these LL sites. Following Malinowski's (2015) triadic approach to LL analysis, two of the six locations examined in Ben-Rafael et al. (2006), Tel Aviv (an Israeli-Jewish location) and Ajami (a Palestinian-Israeli locality), will be analyzed for their conceived space (how the spaces are designed and enforced by policies and urban design practices), perceived space (how the spaces are viewed, heard, and detectable by the senses), and lived space (how the spaces are experienced subjectively by those who inhabit the spaces). The evolving socio-political climate within Israel has brought about notable transformations in its landscape, highlighting the necessity to conduct this study, which will establish, when combined with the results in Ben-Rafael et al. (2006), a longitudinal perspective on the linguistic environment in the country.

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Acknowledgements

I would like to express my gratitude to my advisor, Dr. Hiram Maxim, for his invaluable support and thoughtful feedback. He has guided me through all the hurdles this project has presented, and it would not be what it is without his guidance. I am very grateful to my other committee members, Dr. Pamela Hall and Dr. Lynne Nygaard, for their insightful contributions. I want to acknowledge Emory Undergraduate Research Programs for awarding me their Independent Research Grant. Their generous support enabled me to compensate my participants. I would also like to thank my sister Samantha Lawrence for her technical support. Finally, I would like to thank my parents, Barbara and Brian Lawrence, for always being there for me and continuously reassuring me throughout this process.

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Chapter One: Introduction

Israel, a vibrantly diverse multilingual society, is home to three predominant languages: Hebrew, Arabic, and English. Israel recognizes Hebrew as its exclusive official language, while Arabic, though not designated as an official language, maintains a "special status." English holds a significant presence due to its global importance. With a population of approximately 9.8 million, the country is a melting pot of cultures and languages, where 73.6% are Jews, 21.1% are Arab, and 5.3% are categorized as other (Jewish Virtual Library, 2024).

Because of its multilingualism, Israel has been the site of much research on its linguistic landscape (LL).[1] The LL, defined as the visible and audible languages used in public, offers one compelling window into multilingualism because the landscape can serve as a mirror reflecting various facets of the social reality; it can indicate the inclusion or exclusion of the in-group and out-group/minority languages, exerting a substantial influence on the sense of belonging or isolation within a community. Ultimately, it can serve as a reflection of the broader socio-political landscape within the state.

A seminal work into Israel's LL is Ben-Rafael et al.'s (2006) study. They analyzed the LL in six locations in Israel by examining the visibility of private and public signs of the three major languages of Israel. This study revealed distinct language patterns in Jewish, Palestinian, and East Jerusalem communities.

Despite its seminal status, Ben-Rafael et al.'s (2006) study is now 18 years old, and much has changed in Israel. Since then, many economic, security, educational, and social policies have been enacted, such as the proposed 2023 Israeli judicial reform and the Israel–Hamas war, collectively shaping Israel's contemporary landscape. As a result, the time is right to revisit this seminal study, albeit on a smaller scale, and to investigate the same locations with similar research objectives and questions in mind:

[1] This will be explored in section 7.

1. Does Hebrew, which is the language of the larger population group in Israel, play the predominant role in all LL sites investigated?
2. In sites where members of the Arabic minority are numerous, does the Arabic signage challenge the overall predominance of Hebrew?
3. What is the role of a nonlocal language like English in the LL?

To answer these questions, the following methodology will be adopted. Following the triadic approach to LL analysis proposed by Malinowski (2015), two of the six locations examined in Ben-Rafael, et al. (2006), Tel Aviv–Jaffa (an Israeli-Jewish location, referred to in this paper as Tel Aviv) and Ajami–Jaffa (a Palestinian-Israeli locality, referred to in this paper as Ajami), will be analyzed for their conceived space (how the spaces are designed and enforced by policies and urban design practices), perceived space (how the spaces are viewed, heard, and detectable by the senses), and lived space (how the spaces are experienced subjectively by those who inhabit the spaces). Data was collected from three sources: language policy documents, photographs of the visible virtual landscape of commercial thoroughfares captured via Google Street View, a survey, and semi-structured virtual interviews with residents of Tel Aviv. Participants were asked about their perceptions and impressions of public language use, both visible and audible.

Unfortunately, due to the terrorist attacks that occurred in Israel on October 7th, 2023, I was unable to travel to Israel to conduct my research on site. Therefore, I restructured my project to incorporate virtual methodologies, which will be assessed for their validity in this paper.

In section 1, I provide a comprehensive overview of Israel's demographics, emphasizing the factors that make it an intriguing location for LL research. Section 2 delves into the history of Tel Aviv, the chosen location for this study, explaining its relevance to the research context. Sections 3, 4, and 5 respectively analyze the policies and impacts of Hebrew, Arabic, and English within Israel, offering insights into the linguistic dynamics of the region. Section 6

reviews existing LL research, setting the stage for the specific focus of previous LL research in Israel in section 7. Section 8 discusses the benefits and challenges of virtual LL research, drawing on previous experiences to inform the current study. Finally, in section 9, I outline the research objectives, setting the agenda for the rest of the study.

Chapter Two: Background

Israel as a Place

Israel, located in the Middle East, at the eastern end of the Mediterranean Sea, where Europe, Asia, and Africa meet, is a country embodying a melting pot of cultures and languages. In 2024, the Israel Central Bureau of Statistics reported a total population of 9,842,000 residents, and according to the 2022 Population Census, Israel is home to various religious and ethnic groups: 73.5% are Jews, 18.1% are Muslim, 1.9% are Christians, and 1.2% are Druze.

In addition to its religious and ethnic diversity, Israel is a richly diverse multilingual society. According to the 2021 Social Survey on Languages conducted by the Israel Central Bureau of Statistics, Hebrew leads as the predominant language, spoken as a mother tongue by 55% of the population and as an additional language by another 39%. Arabic follows, with 20% speaking it as a mother tongue and 5.9% as an additional language. Russian is spoken by 15% of the population. English is a mother tongue for 2.6% and an additional language for 58%. French rounds out the top five languages spoken by 2.1% of the population.

The census statistics reflect the prominence of Hebrew, Arabic, and English as the three primary languages in Israel. Hebrew is the exclusive official language of Israel, serving as the predominant language in daily life and embodying national, religious, and cultural identity. Arabic, while not officially designated, maintains a ‘special status,’ symbolizing culture and identity, and is primarily used in community and family contexts (Jewish Nation-State Law, 2018). English, though not officially recognized, is regarded as a vital means of communication with the world and a symbol of prestige. Further details on these languages are discussed in later sections of this paper.

Israel has a tumultuous history, marked by numerous wars and conflicts since its founding in 1948. Israel shares its borders with Lebanon to the north, Syria and Jordan to the east, the Gaza Strip to the west, and Egypt to the south. However, the country's borders have

changed significantly over the years due to conflicts with its neighbors. These conflicts include Israel's War of Independence (1948), the Suez Crisis or Sinai War (1956), the Six-Day War (1967), the Yom Kippur War or October War (1973), the First Lebanon War (1982), the Second Lebanon War (2006), Operation Cast Lead or Gaza War (2008-2009), and the ongoing Israel–Hamas war that began on October 7th, 2023 (American Jewish Committee, 2024). These conflicts, along with other social and political issues, have strained relations between Jews and Arabs, resulting in negative language attitudes and, as Trumper-Hecht (2008) states, an "unresolved national divide." (p. 238).

Due to this rich linguistic and cultural diversity, which reflects the country's complex history and the diverse origins of its population, Israel is a compelling subject for studying linguistic landscapes. The constant evolution of Israel's visual landscape, shaped by official and unofficial signage influenced by political, religious, and social factors, makes it a compelling location for studying how a variety of languages interact and influence each other in public spaces.

Why Tel Aviv?

As documented by UNESCO (2024), Tel Aviv was founded in 1909 and, under the British Mandate, developed as a metropolitan city. By the time of Israel's founding, Tel Aviv had transformed into a thriving urban center, evolving into Israel's foremost economic and metropolitan hub. Tel Aviv is known as the inaugural "Hebrew City," marking its status as the first modern Jewish city in Palestine. With its vibrant and diverse atmosphere, the city is celebrated for its multicultural identity, being labeled as "tolerant, secular, and liberal." (Razin, 2024). According to the World Population Review, as of 2024, Tel Aviv has a population of 4,495,727 residents spread across its 52 square kilometers.

Tel Aviv features a predominantly Jewish population; however, there is also a Tel Aviv Arab community in the Ajami neighborhood of Jaffa, as Palestinian Israelis form a majority of the population (80%) (Ben-Rafael et al., 2006). Buxbaum (2022) reports that approximately 3,200 Palestinians currently reside in Ajami. The area is distinguished by its unique demographic and cultural features, including a higher proportion of Palestinian residents compared to the predominantly Jewish areas of Tel Aviv, leading to its classification as 'separate' from the rest of the city. Therefore, Ajami is categorized as an Israeli–Palestinian locality, while the remainder of Tel Aviv is identified as a Jewish locality.

In addition to the city's linguistic, religious, and ethnic diversity, it is crucial to highlight Tel Aviv's tourism sector due to its profound impact on the city. As identified by Israel's Central Bureau of Statistics, the largest tourist influx was recorded in 2019, with 4.9 million visitors. Tourism activity in 2019 brought in about $7 billion to the economy that year. The United States is the largest source of tourists visiting Israel, with 900,000 visitors, followed closely by France (300,000), Germany (280,000), and the UK (220,000).

Hebrew Revival and Hebrew in Israel

The significance of the Hebrew language in representing Israel's national identity is evident in its role as the primary means of communication and daily life in the country. Modern Hebrew serves as the predominant medium through which people interact in Israel. As the 2021 Social Survey on Languages states, a substantial portion of the population either speaks Hebrew as their native language (55%) or proficiently as an additional language (39%).

A 2013 survey conducted by the Central Bureau of Statistics highlighted the widespread proficiency in Hebrew among Israeli Jews. According to these findings, Druckman (2013) reported that 90% of Israeli Jews demonstrated proficiency in the language, with 70% attaining a high level of proficiency (p. 1).

The evolution of Modern Hebrew can be traced through three distinct phases: language revival, corpus planning, and status planning. Each of these processes has contributed to the development and solidification of Hebrew as a cornerstone of Israel's national identity.

First, Israel needed to implement language policies following the Hebrew Revival in the 19th century. The language revival focused on the transition of Hebrew being a language of religion to a vernacular and a national language. The revival was particularly popular among Jewish Zionist immigrants from Eastern Europe. As Nahir (1998) notes, during the revival period and language planning steps, Palestine's Jewish community underwent a significant shift from using Yiddish and other languages to adopting Hebrew as their all-purpose method of communication. This transition was influenced by a combination of communicative, political, religious, and literary factors existing within the community.

Additionally, entities such as the Hebrew Language Committee (founded in 1890), the Hebrew Teachers Association, and the labor movement expedited the language planning process in Israel. As a result, Hebrew has become the cornerstone of cultural life and identity in the country, with activities like newspapers, media, theater, art, and education in most schools being carried out in the Hebrew language.

Nahir (1998) outlines a four-step process that drove the shift to Hebrew during its revival at the turn of the 20th century, encompassing Attitudes, the Code, Transfer Out of Schools, and First Language. The first step focused on instilling positive language attitudes in children, aligning with the settlement community's preference for Hebrew despite the prevalent use of Yiddish. Leaders, educators, and intellectuals viewed Hebrew as a precondition for national revival due to its biblical and ancestral significance. Schools played a crucial role in popularizing Hebrew, as illustrated by an 1891 memoir by a student recalling a focus on speaking Hebrew: “[It was] Hebrew in Hebrew, that is, forget Yiddish which we spoke at home and ... speak his language, Hebrew.” (p. 347). The total number of schools in the settlements grew from seventeen

to sixty between 1903 and 1913, which considerably helped the shift to the Hebrew language. In his analysis of the revival, Nahir (1998) states that "just a few years after the first school (in Rishon-Letsiyon) introduced Hebrew as the language of instruction, a teacher visiting in 1891 reported that he had found there 'high-school students [who] spoke simple, fluent Hebrew and were led by expert, thoroughly devoted teachers ... Hebrew was the dominant spoken language.'" (p. 348). Children, consciously or not, recognized that Hebrew was the community's prestigious language and that they should learn the code.

In the later stages of the revival period, around 1905, the labor movement emerged, coinciding with the second immigration. This period played a crucial role in reinforcing the revival of Hebrew and fostering a preference for the Hebrew language in adults. Nahir (1998) cites two main factors that contributed to this shift. First, the labor movement organized Hebrew language courses for its members and other adults. Secondly, the second immigration fueled a negative attitude towards other languages, particularly Yiddish, driven by the immigrants' aspirations for a fresh start and a new life.

The second and third steps primarily involved the settlements' schoolteachers. Recognizing that Hebrew needed to be the language of instruction across subjects for a successful linguistic shift, teachers and revival activists faced logistical and linguistic challenges. The dilemma arose: how could teachers effectively teach various subjects in a language unfamiliar to students? To overcome this, certain schools established preparatory programs. The goal of these programs was to familiarize children with speaking Hebrew comfortably, ensuring that upon entering school, they were prepared to read books and complete schoolwork in the Hebrew language. These programs provided a means for children to immerse themselves in Hebrew for one or two years before commencing elementary school. Once a child became reasonably proficient in Hebrew, they progressed to first grade, where instruction was exclusively in Hebrew. Through the establishment of these preparatory programs, teachers

played a pivotal role in integrating Hebrew into the language of settlements by instilling desired language attitudes and the language code in children. This strategic initiative, characterized as acquisition planning, involved a systematic effort by governmental systems at various levels to influence aspects of language, such as language status, distribution, and literacy through education. The teachers executed a top-down approach, making decisions on language usage and instruction based on their individual ideologies.

Subsequently, Nahir's (1998) third phase unfolded as the children, now proficient in Hebrew as a second language, moved beyond the school environment. To complete the language revitalization cycle, it was crucial for children, who had developed the desired language attitudes and acquired the target language, to transfer it out of schools. Although many Hebrew school graduates preferred speaking their native language, Yiddish, for more effective communication, they realized that using Hebrew, even if imperfectly, offered more substantial rewards. According to Nahir (1998), the act of using Hebrew was seen as a contribution to the community's efforts toward national revival, making it a more prestigious and desirable choice compared to Yiddish, associated with "a miserable past in a forced exile." (p. 349). Consequently, the children, influenced by both practical considerations and a sense of communal participation, opted for Hebrew.

The culmination of the process marked the fourth and final stage, where Hebrew transitioned into a first language. Within one or two decades, those initial children, who acquired the positive Hebrew language attitudes, the code, and transferred it out of schools, grew up and had their own children. Despite Hebrew being a second language for the parents, their positive feelings towards the language endured. This persistence culminated in the adoption of Hebrew as the primary language within the homes of the new generation before the 1916 Palestine census. The census revealed a substantial shift, with approximately 40% of the country's Jewish

population—34,000 out of 85,000 individuals aged two and over—declaring Hebrew as their first or only language.

A case in point is Tel Aviv, established in 1909. That year, the census revealed that 75% of the residents, particularly the young population in the settlements, identified Hebrew as their first language. In 1913, a contemporary observer's account of children playing soccer in Tel Aviv vividly captured the language's assimilation into their daily lives, as described in Nahir's (1998) text: "'Even in the most heated moments of the game you could not hear them utter a single non-Hebrew word. To me that was the best proof that the language had 'penetrated' them and had become an integral part of their being. It was a great victory for the pioneers of the revival of the language.'" (p. 351). This not only indicated language use but also reflected the internalization of Hebrew as a fundamental aspect of individuals' identities.

These final steps are pivotal as they highlight the impact of bottom-up and implicit policies. This aspect of the revival of Hebrew occurred devoid of official policy texts, evolving instead through grassroots-generated policies within the settlements, shaped by the desired language attitudes for Hebrew. Notably, children who acquired English proficiency in schools actively chose Hebrew as their primary language for social interactions, aligning with the concept of status planning. Consequently, Hebrew seamlessly became the de facto and native language for the new generation, signifying the official restoration of Hebrew speech.

Eliezer Ben-Yehuda, regarded as the "father" of the Hebrew language revival movement, played a pivotal role in revitalizing Hebrew in the modern era. Together with his followers, he established the first Hebrew-speaking newspapers, schools, and various other Hebrew-language institutions. One of these institutions eventually developed into the Hebrew Language Committee. This organization, created in 1890, spearheaded the Macro-corpus planning by establishing a lexicon through lexical codification. The committee's primary objective was to promote the widespread use of Hebrew and codify the language. To achieve this, they employed

several methods of lexical codification, including: inserting new roots into existing patterns, adding suffixes or infixes to create words of different patterns from existing words, drawing words from old sources and assigning them new meanings, and merging pairs of words into single words. As Shafrir (2021) noted, the committee also employed loan translation, incorporating Aramaic, European, and Hebrew prefixes and suffixes and borrowing from European languages. Through these strategies, the Hebrew Language Committee played a crucial role in shaping and expanding the Hebrew language during its revival.

In addition to lexical codification, the primary mission of the Hebrew Language Committee was to promote the widespread use of the Hebrew language, both spoken and written, across the entire population. This committee, originally utilizing a top-down approach by creating new words for the Hebrew lexicon, was eventually succeeded by the Hebrew Language Academy, a governmental agency that continues to operate as the overarching framework today.

Unlike its predecessor, the Hebrew Language Academy now employs a bottom-up approach, ensuring that vocabulary evolves organically through the contributions of everyday Hebrew speakers. As Waterman (2019) notes, the Academy accomplishes this by overseeing and responding “to requests by professional organizations for suggestions for appropriate words in Hebrew for new inventions and processes.” (p. 739). Comprising a president, thirty-nine full members, along with various advisory and honorary members, the Hebrew Language Academy's expertise lies in the realm of Hebrew literature and language. Its members, including authors, poets, and translators, contribute to the Academy's functions, which are organized into three committees: a grammar committee, a Hebrew terminology committee (specifically focused on advancements in technology and science), and a committee for general usage words.

In addition to the work of the Hebrew Language Committee and now the Hebrew Language Academy to support and further the status of Hebrew in Israel, there have also been governmental policies established to solidify Hebrew's privileged position over Arabic. The

concept of status planning explains how Hebrew maintains a privileged position over Arabic through governmental policies. The initial recognition of Hebrew as an official language of a political entity occurred in 1922 with the issuance of the British Mandate articles by the Council of the League of Nations.

On May 14th, 1948, the Jewish People's Council issued the *Declaration of Independence of the State of Israel*, which declared the establishment of the State of Israel. Although since that date, Hebrew and Arabic were legally accorded the same status in Israel, the Knesset, the nation's unicameral parliament, had never formulated a comprehensive normative dual-language framework. Nowadays, within the Knesset, plenary sessions are convened for debates on legislation, government policies, and activities. While these discussions primarily unfold in Hebrew, members retain the right to address the assembly in Arabic, facilitated by the official status of both languages and the availability of simultaneous translation. Once Israel was declared an independent state in 1948, its new government drew up the production of a distinct Hebrew toponymy in modern Israel by hebraicizing the map. This state-promoted national project's– run by the Governmental Names Commission (which can also serve as part of the macro Hebrew development)– objective was to affix Hebrew names to all geographical features in the map of Israel, as "the visuality of linguistic expression can become a vehicle for identity politics and policies." (Waterman, 2019, p. 736). These instances contribute to the perception that Arabic holds a subordinate status to Hebrew within internal governmental policies rather than being explicitly mandated by statutes or regulations for the entire nation.

Many of the founders of modern Israel envisioned the adoption of Hebrew as the sole language as a cultural goal to unify the people of Israel. With the establishment of the nation, the reasons for acquiring Hebrew have shifted towards social adaptation and upward mobility. The unity among the immigrants in Palestine was facilitated by the adoption of Hebrew, and the revival of the language underscores that its acquisition was essential for creating a new

beginning for themselves and shaping an Israeli national identity. As Eliezer Ben-Yehuda said, "There is no nation without a country, a language or a state. The Jews have a land, the Land of Israel; they have a language – the Hebrew language. The land and the language will be the foundation of their state." (Safran, 2005, p. 43).

In conclusion, Hebrew has emerged as the predominant and official language of the Jewish community, achieving widespread usage in everyday life throughout Israel. Its official status extends to key domains such as government affairs, court proceedings, commerce, and educational institutions. This linguistic triumph not only reflects the nation's cultural identity but also underscores the integral role Hebrew plays in shaping the multifaceted aspects of Israeli society. While Hebrew is widely spoken among residents of Israel, this study seeks to explore its prevalence in public spaces within the LL.

Arabic in Israel

Arabic as a language holds a substantial global impact. Arabic is the sixth most spoken language globally with nearly 300 million speakers, and is recognized as the official language in 22 countries predominantly located in the Middle East and North Africa. Additionally, as Yassin (2020) states, it serves as the "religious and liturgical" language for over 1.5 billion Muslims across the globe (p. 11). Only in a handful of nations, including Chad, Somalia, Israel, and Eritrea, is Arabic integrated into a bilingual or multilingual national policy (Spolsky & Shohamy, 1999).

In 1922, under the British Mandate, Arabic was formally designated as an official language. The Mandate government of Palestine established English, Arabic, and Hebrew – in this particular hierarchical order – as the official languages of the country. The colonial power utilized English as its language, while the majority population spoke Arabic. Additionally, Hebrew served as the national language for the Jewish minority. Then, following the state's

declaration of independence in 1948, the Law and Administration Ordinance narrowed down the official languages of Israel to only Hebrew and Arabic (Azaryahu, 2014).

In 1959, a directive from the Minister of the Interior set standards for Arabic placement on street signs in Tel Aviv and other cities with both Jewish and Arab populations. A petition was submitted to the Minister of the Interior expressing concern that street signs in the predominantly Arab neighborhood of Ajami in Jaffa only included Hebrew and English, neglecting Arabic. The head of the Names Committee in the Tel Aviv Municipality suggested adding Arabic inscriptions to 60 street signs in Jaffa's predominantly Arab-populated area. In response to the Minister of the Interior's letter, the mayor of Tel Aviv instructed the City Engineer to replace non-standard signs with ones in Hebrew at the top, Arabic in the middle, and English at the bottom (Azaryahu, 2014).

This issue resurfaced in the early 21st century when Adalah, an organization advocating for the rights of the Palestinian Arab minority in Israel, filed two petitions in 1999 and 2002. The Supreme Court issued an order in 1999, addressing the case of *Adalah, et al. v. The Ministry of Transportation, et al*. In this petition, Adalah sought the inclusion of Arabic on all national road signs (Adalah, p. 1). The court sided with Adalah, mandating that five Arab-Jewish cities, including Tel Aviv-Jaffa, incorporate Arabic into all road signs within five years from the date of the ruling. Then, five years later, the Supreme Court issued an order in 2002 directing the "mixed cities to add Arabic on all public signs within their jurisdiction within five years from the date of the ruling" (all but Upper Nazareth completed this) (Trumper-Hecht, 2008, p. 247). These decisions marked a significant development in addressing linguistic representation and inclusivity on national road signage in Tel Aviv.

However, as Bigon & Dahamshe (2014) reported in their study of Arabic and Hebrew road signs in the Galilee region, they found no monolingual Arabic signs (there were some Hebrew ones), orthographic errors, and deviations from the Arabic spelling of Arab names,

demonstrating that “representation is partial, sometimes confusing, and falls far behind the representation of the Hebrew language in terms of transcript accuracy, toponymic salience, presence, and visibility” (p. 619). There is thus a need for further improvement throughout the entire state of Israel.

The 2018 Jewish Nation-State Law is the most recent and impactful policy regarding Arabic. According to this law, Hebrew is declared the official language of the State of Israel, granting Arabic a special status. The law also specifies that the regulation of Arabic “in state institutions or in contacts with them shall be prescribed by law.” (p. 2). It is important to note that the subsequent section of the law clarifies that the status afforded to the Arabic language in practice prior to the enactment of this law remains uncompromised. For instance, Arab Knesset (parliament) members are permitted to use Arabic in debates, “provided that they give sufficient notice for the Speaker to arrange for an interpreter.” (Spolsky & Shohamy, 1999, p. 119).

As Amara (2017) states: “The linguistic conflict between Arabic and Hebrew in Israel and Palestine is part of a larger dispute over resources, symbols, and political control,” (p. 18), all of which have a profound impact on Jewish–Arab relations (Azaiza et al., 2011). This linguistic tension is situated within the historical context of major conflicts between Israelis and Arabs since Israel's independence in 1948.

In Israel, Arabic is regarded differently compared to its status in the global context. As Shohamy (2015) states, “Arabic is of marginal status and prestige” (p. 109). A linguistic contest has unfolded among the three major languages present in Israel: Hebrew, Arabic, and English. Spolsky and Shohamy (1999) assert that Israel is a dyadic bilingual state, signifying a condition where “two languages are in conflict or have more or less equal status.” (p. 10). In 2018, Arabic experienced a downgrade in its standing to maintain a 'special status' in Israel; yet, as per Spolsky and Shohamy (1999), even when it held the position of the second official language, English, rather than Arabic, was the primary competitor to Hebrew's dominance in Israel

According to Spolsky and Shohamy (1999), “The Palestinian Arabs of Israel constitute a culturally and linguistically heterogeneous group” (p. 20). The 2021 Social Survey on Languages reported that among the entire population of Israel, Arabic served as the mother tongue for 20% of individuals and an additional language for 5.9% more. Moreover, as of 2021, the Arab demographic constituted 21.1% of Israel's overall population, with a significant majority of Arab citizens identifying as Muslim (82.9%) (Statistical Report on Arab Society in Israel, 2022). The Arab population of Israel resides mainly in their own towns and villages (Ben-Rafael et al., 2006) and is concentrated in five primary regions: northern Israel, the Triangle region, the Negev, the “mixed” Arab-Jewish cities, and the Jerusalem corridor (Statistical Report on Arab Society in Israel, 2022). Arabic serves as the language that embodies personal, cultural, ethnic, and national identity. Officially acknowledged for both educational and public purposes, it is mainly used for family and community life (Spolsky & Shohamy, 1999; Ben-Rafael, 2006).

In terms of language attitudes, the majority of Israeli Jews view Arabic primarily as the language associated with the surrounding Arab nations, many of which have a history of engaging in conflicts with Israel, leading to their perceived role as threats to national survival (Spolsky & Shohamy, 1999). This perspective on Arabic is intertwined with Israeli attitudes toward their Arabic-speaking minority, which carry significant implications for how Arabic is approached in terms of teaching and learning within Israel (Spolsky & Shohamy, 1999).

Palestinian Arabs face significant challenges in preserving their distinct Palestinian-Arab identity, not only as a result of ongoing conflicts but also due to hebraization, exposure to Israeli culture and values, and the influences of globalization (Amara, 2019). Furthermore, Palestinian Arabs in Israel find themselves in conflict with the Jewish majority on two significant fronts. Internally, there is contention over the definition of Israel as a Jewish and democratic state, leading to the marginalization of the civil and national status of Palestinian Arabs within Israel (Amara, 2019). Externally, their challenges are linked to the persisting conflict between Arab

states and Israel; according to Amara (2019): “Palestinian Arabs in Israel are an indigenous group with its own unique historical narrative that, in essence, clashes with the historical narrative of the Jewish majority, especially with respect to issues concerning the post-1948 conflict, and other fundamental issues such as the land, identity, and the nature of citizenship” (p. 275). These issues underscore the intricate socio-political dynamics shaping the attitudes between Palestinian Arabs and the Jewish populations in Israel.

The dynamics of Arabic in education present an intriguing scenario. Minority schools are allowed to use Arabic as the language of instruction (Spolsky & Shohamy, 1999). However, in mixed cities like Jaffa where “there are schools with Arabs and Jews integrated… the curriculum is Jewish and Hebrew.” (Spolsky & Shohamy, 1999, p. 121). In 1991, a new curriculum for the teaching of Arabic in Jewish schools was introduced. Taking effect in September 1996, the policy entailed mandatory Arabic courses commencing in Grade 7 to learn the modern literary language, Modern Standard Arabic. Modern Standard Arabic is deeply influenced by the structure of the Classical language, and a notable distinction exists between the spoken vernacular and the formal language, encompassing differences in grammar, phonology, and lexicon (Spolsky & Shohamy, 1999). Unfortunately, “while Arabs hold positive attitudes toward learning Hebrew, the majority language, most Jews hold negative attitudes toward learning Arabic, the minority language.” (Trumper-Hecht, 2010, p. 242). According to Amara (2017), unless Jewish students are motivated to learn Arabic in order to get a job in the “Israeli security or intelligence forces,” they exhibit a reluctance towards learning it due to low motivation influenced by various social factors (p. 148). Their poor motivation is exacerbated by the language's low status, low environmental support, the ineffectiveness of teaching, lack of support from parents and schools, and the fact that Arabic classes are taught in Hebrew. Compulsory only from grades 7-9, and optional in grades 5-6 and 11-12, students struggle to find value in the learning process (Trumper-Hecht, 2010).

In 2007, recognizing Arabic as a language deeply rooted in culture and spoken by a significant portion of the population, and officially recognized at the time as a language of Israel, the official Arabic Language Academy was established. The academy aimed to address various issues related to Arabic; this included corpus planning and enhancing the visibility of Arabic in scientific, educational, and cultural contexts (Amara, 2017).

Arabic, a language of significant global influence, has faced challenges in Israel; according to Bigon & Dahamshe (2014), it is "perceived as a marginal language by Jewish-Israeli society and is treated de facto as a minority language." (p. 611). Over the years, historical events, government policies, and public attitudes have shaped the role and visibility of Arabic, impacting its prevalence in education and public spaces. As Trumper-Hecht (2010) states: "the Arab community in Israel is bilingual and bicultural while the Jewish majority in most cases doesn't speak Arabic nor is it interested in learning about Arab culture" (p. 242). While initiatives like directives for bilingual street signs reflect steady steps toward integration, the question arises: are these efforts sufficient to address the complex linguistic dynamics and challenges in Israel's linguistic landscape?

English in Israel

While English is not designated as an official language, its significant and multifaceted role in Israel is undeniable. Much like in many countries worldwide, English holds a substantial position in Israel, serving both as a global and local language. This prominence is underscored by the sizable English-speaking population and the nation's ties with English-speaking communities abroad. As a result, English is pervasive in diverse domains, including business, academia, education, and media, as well as in daily interactions. Further, English is prominently featured as the single language of shop names, advertisements, names of buildings, commercials, instructions, and more (Shohamy, 2014).

In 1922, the Mandate government of Palestine established English as its primary official language, taking precedence over Arabic and Hebrew. According to Azaryahu (2014), this linguistic hierarchy mirrored the demographic makeup and power dynamics of British Mandate Palestine (p. 466). Following the establishment of Israel as an independent state in May 1948, the provisional government enacted The Law and Administration Ordinance, which eliminated English's official status in the country. The ordinance explicitly declared, "Any provision in the law requiring the use of the English language is repealed." (p.4).

Despite its unofficial status, English has gained increasing significance both in Israel and in the wider contemporary world, driven by globalization. According to Ben-Rafael (2006), English is widely recognized worldwide as the "principal international language and as the principal conveyor of scientific, technological and business knowledge." (p. 12). The role of the English language in commerce and business internationally is underscored by Backhaus (2006), who explores multilingualism in Tokyo through signage. The incorporation of English on signs is interpreted as a "symbolic expression" by sign writers to align with the English language community and associate with the values linked to it, such as those of American/Western culture (Backhaus, 2006, p. 63). Additionally, there is a motivation for internationalization; Backhaus (2006) notes that the presence of English contributes to creating "an overseas atmosphere, even if there is no direct link to the world outside Japan." (p. 64). Furthermore, this adoption of English in business aligns with the notion that it conveys enhanced status in terms of "prestige, credibility, and modernity," as highlighted by Amara's (2019) study on shop names in six of Israel's Palestinian Arab localities. (p.282). For example, Salih and El-Yasin (1994) discovered that most customers associate foreign names with high-quality products, reflecting the elevated value attributed to foreignness in business and commerce. Specifically, the "use of English in their shop signs endows their commodities with traits of quality, modernity, durability, serviceability, and management" (Amara, 2019, p. 274).

The English language holds undeniable prestige within Israeli communities. For instance, Ben-Rafael's (2006) research found that Palestinians in East Jerusalem actively utilize English in their LL as a means of communication with the Jewish population and to strategically preserve their economic interests, particularly in the realm of tourism. This practice aligns with the broader global trend, as noted by Amara (2016), where the prevalence of a purely monolingual linguistic environment has become increasingly uncommon due to the widespread use of English in non-English-speaking nations, and the integration of "foreign brand names, shop names, and slogans" in non-English-speaking nations (p. 274). This is reflected in Ben-Rafael's (2006) study findings, as he found the presence of English "is the strongest in bilingual Hebrew-English items among Jews and in bilingual Arabic-English items among non-Israeli Palestinians in East Jerusalem." (p.22-23).

As Shohamy (2014) notes, despite the extensive use of English on the internet and in Israel's public spaces, there persists a notion that English should be limited and that Hebrew must always take precedence, particularly as a medium of instruction. Despite emphasizing English proficiency today, the two languages are still deliberately kept separate in the elementary and high school education systems. Over the years, various initiatives and policies have been implemented or blocked to preserve Hebrew hegemony. There were initial instances of resistance to incorporating English as a medium of instruction in specific content areas, as demonstrated by a rejected 1960s proposal by the Minister of Education to teach crafts and gymnastics in English. Since then, Shohamy (2014) claims that there has been no initiative to introduce English content-based instruction in Israeli Jewish schools. This type of opposition to multilingualism was often rooted in concerns about the potential threat to Hebrew.

In recent years, Israel's English education policy has undergone significant changes. Spolsky and Shohamy (1999) clarify that the 1995-96 language education policy mandated English as a compulsory language to be learned from the fifth grade onwards. Currently, as

Amara (2019) stated, English is a mandatory subject to learn, starting from the third grade up to the twelfth grade. Despite this, there have been numerous efforts by parents, schools, and municipalities to implement even earlier English language programs. For example, many schools opt to teach English from the first grade or even earlier. The goal is to improve proficiency in English, as it is believed to result in increased economic benefits and a higher social status (Shohamy, 2014). To illustrate this, a proficient command of English is essential for admission to higher education institutions in Israel, requiring students to pass written and oral exams during their upper secondary education. This policy has not been without controversy, as highlighted within Shohamy (2014) by Professor Bar Asher, the head of the Hebrew Language Academy, who expressed concerns in 2012 about English posing a threat to Hebrew, particularly in higher education.

The Ministry of Education opposed the early introduction of English, resulting in limited public funding for English education in earlier grades. This opposition meant that private funding became the primary source for earlier-grade English education, restricting access for most students and limiting it to those who can attend affluent schools (Shohamy, 2014). The Ministry of Education's stance not only impacts the availability of English education but also contributes to a broader shift in language preferences and proficiency levels within the educational system.

Specifically, these educational restrictions disproportionately affect Arab students. In mixed towns, Arab students seek to register in Hebrew-speaking schools, resulting in a rapid decline in the proficiency of academic Arabic (Shohamy, 2014). The Ministry of Education's stance not only impacts the availability of English education but also contributes to a broader shift in language preferences and proficiency levels within the educational system. As Ben-Rafael et al. (2006) report, in areas where Arabs reside, Arabic takes precedence in public spaces alongside Hebrew, while English is scarcely present. Since the priority is given to learning Arabic and Hebrew before English, Arab students tend to achieve a significantly lower English

proficiency level than their Jewish counterparts (Shohamy, 2014). Arab students face an additional challenge as they need to learn a third language with a writing system distinct from Arabic and Hebrew (Spolsky & Shohamy, 1999). For example, although Jewish and Arab sector schools shared a standard curriculum during this time, an assessment conducted in 1997 for Grade 8 revealed significantly lower English test scores in Arab sector schools compared to their counterparts in the Jewish sector (Spolsky & Shohamy, 1999).

Despite lacking official status, the growing significance of English in Israel aligns with the country's globalized nature. Linked to notions of prestige and modernity, English leaves a noticeable impact on various aspects of Israeli daily life. Nevertheless, a reluctance, particularly within the Israeli education system, persists against permitting unregulated English instruction, as it challenges the perceived superiority of Hebrew. This tension underscores the dilemma of balancing the acknowledgment of English's global significance with the commitment to uphold the linguistic prominence of Hebrew.

Linguistic Landscapes

What are Linguistic Landscapes?

Israel's long and complicated history with different languages makes it well-suited for studying its linguistic landscape (LL). This paper presents an empirical and qualitative study of Tel Aviv's LL, drawing on existing works in the field. Research on LL has been fundamentally guided by the original LL definition put forth by Landry and Bourhis (1997) in their seminal study: "The language of public road signs, advertising billboards, street names, place names, commercial shop signs, and public signs on government buildings combines to form the linguistic landscape of a given territory, region, or urban agglomeration." (p.25). Moreover, they emphasized that LLs play significant roles both informatively and symbolically, serving as

indicators of the relative power and status of linguistic communities residing in a particular area. In an informational capacity, the LL can inform "the in and out-group members of the linguistic characteristics, territorial limits, and language boundaries of the region." (p.25). Symbolically, the LL communicates power dynamics and status relationships among ethnolinguistic groups within a specific territory. Typically, the dominant linguistic group controls the region's signage, and the inclusion or exclusion of languages can reflect whether the ethnolinguistic group has a positive or negative social identity.

According to Landry and Bourhis (1997), the concept of LL originated in the field of language planning. Their work describes the impact and history of LL in the multilingual, dyadic cities of Belgium and Québec. They note that language planners in these two cities were "among the first to recognize the importance of marking the boundaries of linguistic territories through the regulation of language use on public signs, including billboards, street signs, and commercial signs, as well as in place names" (p. 24). Overall, Landry and Bourhis' (1997) study results indicate that LL is a distinct factor in the social-psychological aspects of bilingual development, influencing people's perceptions of ethnolinguistic group vitality. Therefore, as Lou (2012) writes, a LL first marks the boundaries of an ethnolinguistic group's territory, which then "indexes the relative power and social status that are attributed to these groups" (p. 37). This idea serves as a key motivation for conducting this study.

Since then, however, the notion of what constitutes LL research has clearly expanded. Shohamy and Waksman (2009) describe LL as "all texts situated and displayed in a changing public space," emphasizing its dynamic, multimodal, and multilingual nature (p. 328). They argue that the LL extends beyond the mere display of texts on signs to encompass "varied and diverse text types that shape and design the public sphere." (p. 314). They highlight LL's symbolic function, emphasizing that the public space is open to constant negotiation and contestation, which reflect and shape cultural relations. This perspective suggests that LL can

"serve as a potent tool for education, facilitating meaningful language learning and promoting linguistic activism." (p. 326). Overall, as Ben-Rafael et al. (2006) state: "LL analysis allows us to point out patterns representing different ways in which people, groups, associations, institutions and governmental agencies cope with the game of symbols within a complex reality." (p. 27).

Signage

There exists a substantial amount of previous research into signs in the LL. Signage plays a crucial role in people's daily lives, aiding individuals in locating themselves within the geopolitical world. Backhaus (2006) broadly defined a *sign* as "any piece of written text within a spatially definable frame." (p. 55). He then clarified a *multilingual sign* as containing at least one language in addition to the de facto national language. Building on the research by Landry and Bourhis (1997), Backhaus (2006) underscores the importance of distinguishing between official and unofficial signs in LL research. Official signs, such as road or traffic signs, are written by the authority of a region. In contrast, unofficial signs, like commercial storefronts and graffiti, are created by the citizens of a region. Both types of multilingual signs contribute "towards an increase in linguistic diversity and a challenge to the existing monolingual language regime." (p. 64). Backhaus (2006) argues that the prominence of languages in both unofficial and official signs inevitably creates a visual hierarchy. This point is further emphasized by Landry and Bourhis (1997), who state that "the greater the discrepancy between the language of government signs and the language of private signs, the less coherent will be the character of the linguistic landscape" (p. 27).

Scollon and Scollon (2003) introduced the framework of geosemiotics for analyzing signs, which involves examining not just the visual features of signs but also their physical emplacement. Understanding these signs fully requires an ethnographic understanding of their meanings within specific communities. Signs, codes, and fonts convey meaning in two distinct

analytical ways: through indexicality and symbolism. Indexicality involves how a sign derives meaning from its physical placement, characteristics, or placement with another object or sign. In contrast, symbolism involves a sign making its meaning "by representing something else which is not present or which is ideal or metaphorical." (p. 133). Further, Scollon and Scollon (2003) elaborate on the meanings conveyed by signs, indicating that signs can display three types of meaning: "where the sign or font is located in the actual world, the meaning that comes from what the font, design, and materials symbolize, and the meaning that comes from the interpretive frames of the users – viewers – readers of these signs." (p.134).

The orientation of signs influences how they are perceived. Scollon and Scollon (2003) emphasize several key factors related to the language used on signs; these include whether the sign is official or unofficial, the number of languages featured, the function of each language, the font size and color, the sequence and positioning of languages, the sign's location, the material's temporality or durability, and more. These factors can help reveal deeper meanings that reflect the socio-political atmosphere of a visual landscape; for example, Azaryahu (2012) argues that "the choice and placement of languages on street signs and the hierarchy of preference that this implies also demonstrate in visual terms how power relationships implicate the politics of language and identity into ordinary urban experiences." (p. 476). These insights into the role of languages on signs will be crucial in the methodology for analyzing signage in the two locations in this study.

Previous research by Backhaus (2006) has indicated that official signage reflects power relations between two ethnolinguistic groups, while nonofficial signs often use foreign languages to show solidarity. Spolsky and Cooper (1991) proposed three rules to explain why writers choose certain languages for city street signs: writers use languages they know, they use languages they believe are understood by its intended readers, and they prefer to use their own language or one with which they want to identify (which they termed the "symbolic value

condition'). The motivation for the 'symbolic value condition' can be political or sociocultural, as it can stem from the "desire to assert power… or to claim solidarity or identity" (p. 84).

Approaches to Data Collection

The field of LL has transitioned from its initial focus on quantitative approaches, which involved counting languages and assessing their public presence, to a broader concern with the intricate relationship between languages, places, and people. This shift has underscored the significance of employing in-depth ethnographic methods rather than relying solely on quantitative approaches.

Recently, the variety and types of signs evaluated as part of the LL in public spaces has expanded to include language on bottom-up and transient items, spanning from individuals' T-shirts to their bodies (e.g. Peck & Stroud, 2015; Milani, 2015) and the graffiti on walls (e.g. Pennycook, 2010; Radaviciute, 2017; Karlander, 2019) as well as encompassing more intangible concepts such as sexuality (e.g. Milani et al. 2018).

Another instance is exhibited by Peck & Stroud's (2015) study about skinscapes, in which they explain how tattoos can be seen as a form of surface-level expression on the skin, while also signifying deeper social concepts like gender and criminality. Peck & Stroud (2015) suggest that LL research has evolved from simply viewing a sign as "a visual artefact delinked from its spatial-temporal context" to understanding them as actively shaping the public space. (p. 147). To illustrate this, the authors emphasize a shift in how individuals perceive signs: "silent viewers deep in contemplation of the sign as artifact have been replaced by 'readers' who actively 'interpret the sign' and by actors who affectfully 'enact' the sign in creating place." (p. 147). Overall, qualitative research on public signage has provided valuable insights into LL.

Lou's (2012) study of the bilingual LL in Chinatown, Washington D.C., stands as a notable example of qualitative investigation. In this research, Lou draws upon Lefebvre's (1991)

theory of the social production of space and Scollon and Scollon's (2003) geosemiotic framework. She introduces a revised triadic model of place, evaluating the neighborhood's spatial representation, material space, and spatial practice. To implement this framework, Lou engaged qualitatively with the residents of Chinatown to gain deeper insights into their experiences within the neighborhood. For example, she interviewed residents, attended community meetings, taught ESL to residents, and had residents draw maps of their neighborhoods. This method reflects Malinowski's (2015) concept of lived space.

Lou's attention to the lived experiences of residents reflects a move in LL methodology to capture a more comprehensive picture of how a particular space is managed, organized visually, and experienced. One notable approach for attending to these different dimensions of a particular space is Malinowski's (2015) triadic approach to analyzing the visual landscape. Drawing on Lefevre's (1991) theory, his approach comprises an analysis of the conceived space (how the spaces are designed and enforced by policies and urban design practices), perceived space (how the spaces are viewed, heard, and detectable by the senses), and lived space (how the spaces are experienced subjectively by those who inhabit the spaces). This study applies Malinowski's triadic approach, using both qualitative and quantitative methods, to analyze the roles of Hebrew, Arabic, and English on signs in Israel. Further details on these approaches will be discussed in the methodology section.

Linguistic Landscape Research in Israel

Because of its multilingualism, Israel has been the site of much research on its linguistic landscape (LL). One of the earliest seminal works on LL was conducted in Jerusalem by Spolsky and Cooper (1991) who explored the linguistic diversity of Jerusalem in their book *The Languages of Jerusalem*. They delved into the diverse LL of the city, which includes Hebrew, Arabic, English, and Russian. The book discusses how these languages are used in various

contexts and how they shape the city's identity and social dynamics. Building on this, Spolsky and Shohamy's (1999) book delves into language policy, ideology, and practices in Israel, with a focus on Hebrew, Arabic, and English. Their research offers valuable insights into the intricate sociolinguistic landscape of Israel, covering aspects such as language education, policy, and identity.

There has been a plethora of recent research studies examining the LL of Israel. First, Trumper-Hecht's (2008) study explores the construction of national identity in mixed cities in Israel, specifically focusing on the presence of Arabic on signs in Upper Nazareth. The research examines how including Arabic on signs reflects the complex dynamics of identity, language, and coexistence in these urban areas. In this work, Trumper-Hecht claims that "the language battle between Hebrew and Arabic on signage in mixed cities serves as an instrument within a wider status struggle between the two national groups" of Jews and Arabs (p. 238). Overall, the study suggests that the LL is utilized to maintain the national hegemony of the dominant language group.

Expanding upon this, Trumper-Hecht's (2010) study explores the visibility of Arabic in the LL of mixed cities in Israel through Lefebvre's framework, offering insights into the intricate dynamics between the Jewish majority and Arab minority in these settings. In mixed cities like Upper Nazareth, where Jews are a minority, Arabic signage is often viewed as a threat by Jewish residents, as they perceive it as encroaching on "their" public space (Trumper-Hecht, 2010, p. 249). Conversely, in Jaffa, Arabic signage may be more accepted by Jews due to their awareness of the city's Arab history and the small, weakened Arab minority in the predominantly Jewish area (Trumper-Hecht, 2010). Trumper-Hecht (2010) suggests that Jaffa's more tolerant attitude toward the visibility of Arabic in the LL stems from its Jewish residents feeling secure in their demographic position. This illustrates how concerns about demographic changes and attempts to shape the city's national identity influence Jewish attitudes toward Arabic in the LL. Overall, the

study underscores that the LL not only reflects sociopolitical realities but also serves as a platform for social action.

Many recent research studies on the LL of Israel have focused on the diminished presence of Arabic in public spaces. Azaryahu (2012) conducted a study on multilingual street signs, particularly focusing on the use of different scripts for the same "geographical nomenclature" on street signs. His investigation and review of language policy in Israel led him to conclude that "the choice and placement of languages on street signs and the hierarchy of preference that this implies also demonstrate in visual terms how power relationships implicate the politics of language and identity into ordinary urban experiences." (p. 476). Notably, in a subsequent study, Azaryahu (2014) identifies a shift in language authority, noting that the "language preference policies displayed on street signs in Israel were under the exclusive jurisdiction of local authorities." (p. 475). However, this prerogative was rescinded by the Supreme Court ruling in 2002. Subsequently, the legislative body assumed this responsibility through the enactment of the 2018 Jewish Nation-State law.

Subsequently, Bigon and Dahamshe (2014) examined how Arabic and Hebrew toponyms are visually and linguistically represented in the Israeli road sign system of the Galilee region. They found orthographic errors and deviations in Arabic names when transliterated into Hebrew, including differences in the use of discernment marks, vowels, and diacritic marks compared to the original Arabic spelling. The study also noted the absence of monolingual Arabic signs, with only monolingual Hebrew signs present. In contrast to the multilingual approach observed in countries like Belgium and Canada, as discussed by Landry and Bourhis (1997), Bigon and Dahamshe (2014) argue that Israeli road signs do not reflect a focus on "'a state of all its citizens', their representations, and their historical memories." (p. 618). Instead, these signs prioritize the Hebraisation of the landscape. Finally, the researchers highlight the overall significance of road signs in Israel, stating: "Despite their mundane appearance as informative,

innocent, and undisputable, road signs are an integral part of the production of the linguistic landscape, the maintenance of symbolic power, and cultural and political domination. This is especially true in countries such as Israel that experience ethnolinguistic, national, and sociopolitical tensions and where the linguistic landscape is produced within a highly contested context." (p. 618).

In his book *Arabic in Israel: Language, Identity, and Conflict*, Amara (2017) examines the status of Arabic after Israel's establishment and the linguistic conflict's impact on Palestinian Arab identity. The book delves into Arabic's linguistic, social, cultural, educational, and political dimensions. Following this, Amara (2019) conducted a study on shop names in the Palestinian Arab LL, focusing on their symbolic rather than informational aspect, a departure from previous studies. Employing both quantitative and qualitative methods, he observed that Arabic is the most prominently used language, followed by foreign languages, with Hebrew significantly less common comparatively. Amara suggests that this pattern is influenced by processes of Arabisation, which sees Arabic as an authentic language and marker of identity and traditions; Hebraisation, linked to language and economy, leading to a sense of modernity; and globalization, where the use of foreign languages indicates higher status in image and credibility (p. 285).

While these studies have contributed to the research on LL in Israel, one of the most seminal is Ben-Rafael et al.'s (2006) study. This study is widely regarded as a landmark in LL research in Israel, serving as an inspiration and a standard for subsequent studies in the field. LL is defined in this study as "any sign or announcement located outside or inside a public institution or a private business in a given geographical location." (p. 14). Ben-Rafael et al. compared LL signage patterns in six different homogeneous and mixed Israeli cities, including East Jerusalem, examining signage from official and unofficial sources. The ethnographic groups studied included Israeli Jews, Palestinian Israelis, and non-Israeli Palestinians from East

Jerusalem (most of whom are not Israeli citizens). The researchers examined the official and unofficial signage of the LL of these six locations as shaped by ‘top-down’ and ‘bottom-up’ forces. ‘Top-down’ LL items incorporate those issued by national and public bureaucracies, such as “religious, governmental, municipal, cultural, educational and public health.” (p. 15). ‘Bottom-up’ LL items include those issued by individual social actors like companies and shop owners, such as “clothing and leisure, food, house-ware, and private offices.” (p. 15). They also looked at the languages used on signs, their prominence, font sizes, order, and placement on the sign.

The findings of this study revealed distinct language patterns in Jewish, Israeli-Palestinian, and East Jerusalem communities. It showed that Hebrew-English signs predominate in Jewish areas, Arabic-Hebrew signs in Israeli-Palestinian locales, and Arabic-English signs in East Jerusalem. However, Ben-Rafael et al.’s (2006) study is now 18 years old, and Israel has undergone significant changes since then. Various economic, security, educational, and social policies have been enacted, such as the proposed 2023 Israeli judicial reform and the Israel–Hamas war, collectively shaping Israel's contemporary landscape.

Additionally, the researchers aimed not only to explore these questions about Israel’s LL but also to validate LL as a means of collecting and evaluating data to investigate the social reality. Since then, further studies have contributed to understanding Arabic's role in the LL since 2006 and have examined LL through lived experiences. Hence, the time is right to revisit this seminal study, albeit on a smaller scale, and to investigate the same locations with similar research objectives and questions in mind.

Virtual Linguistic Landscape (VLL)

While there has been extensive literature investigating LL, in comparison, there is a significant paucity of research in the virtual linguistic landscape (VLL). Prior research into the

topic has delved into alternative aspects of VLLs. For instance, Biro (2019) sought to examine the Internet as a complex form of VLL. To do so, she examined multilingualism and language practices on the periphery of cyberscapes (specifically social media) through questionnaires administered to bilingual university students at Sapientia University in Hungary. Subsequently, Jiang, Luo and Yang (2022) researched the impact of the COVID-19 pandemic on language behavior on social media. Most recently, Xue and Zou (2023) conducted a study that evaluates the VLL of Yunnan universities' websites by "analyzing language choices and semiotic resources in websites." (p. 6). Comparable to the exploration of LLs in person, which captures the "linguistic cityscape," Xue and Zou (2023) emphasize that the VLL "serves to delineate the linguistic community and to mark language status in expressed power relations among the coexisting linguistic choices in the cyberspace community." (p. 2).

Notably, Google Street View, an underutilized tool in VLL studies, presents a unique opportunity. Hritz (2013) first demonstrated the effectiveness of Google Earth Pro in retrieving data in otherwise inaccessible landscapes, as illustrated in his case study of the southern half of the Balikh River valley in Syria. Google Earth Pro offers high-resolution imagery obtained from numerous commercial satellites spanning from 2000 to the present (Saleem & Awange, 2019). In parallel, Google Maps Street View sources its content from Google and its external contributors. Google special cameras drive, pedal, sail and walk around the world to capture images in various directions simultaneously. These images are then overlapped and stitched together to create a comprehensive 360-degree image, allowing Google to compile billions of panoramic images for a virtual depiction of the world on Google Maps.

The Google Maps satellite imagery database has found applications across various research fields. In marine biology, it enhances the precision of fish catch estimates in the Persian Gulf (Al-Abdulrazzak & Pauly, 2014). In archaeological research, it surveys large portions of the Arabian Peninsula for prehistoric ruins (Kennedy, 2011). Additionally, it contributes to

environmental criminology research (Vandeviver, 2014). To date, Kim and Chesnut (2020) is the sole study that combines Google Street View and VLL. This study examines classroom practices utilizing VLLs to develop learners' translingual and transcultural competence. Further, it explores the use of VLLs, including services like Google Street View and curated collections of digital photographs, as an alternative approach to language teaching (Kim & Chesnut, 2020). Overall, despite the existing body of research on the VLL and the utilization of tools like Google Street View, the integration of these two aspects in research has rarely been combined to date.

Utilizing Google Street View for VLL research presents several benefits. Firstly, it eliminates the need for physical on-site presence. Its accessibility and cost-effectiveness are noteworthy, as the application can be freely downloaded from the internet. This application ensures a high-resolution, wide-scale data capture. Moreover, by enabling remote presence, Google Street View guarantees the safety of the research team in foreign environments. This aspect has become increasingly pertinent in today's context, particularly in the wake of events such as the terrorist attack in Israel on October 7th, 2023. Lastly, it offers a unique outside point of view for the analysis of urban environments.

However, there are notable drawbacks to consider. One significant limitation is the potential for outdated information, making it unreliable for temporal analyses. Additionally, constraints in capturing attribute information become apparent when compared to on-site observations, limiting its capacity for in-depth analysis. Furthermore, its application is limited when it comes to depth and distance analyses. Malinowski (2010) argues that the VLL can be easily misinterpreted when removed from its original context; he states: “to be an uncritical consumer of geo-referenced LL images is to risk an alienation and loss of ability to differentiate geographic place from cyberspace” (p. 210). Finally, another concern raised by Cinnamon and Jahiu (2021) pertains to the role of corporations, raising ethical considerations about these entities serving as “image-data gatekeepers” (p. 12). Despite these limitations, the utility of

Google Street View in research, especially in urban studies, remains evident; however, researchers must navigate these drawbacks judiciously.

Research Questions:

Given the significant time that has elapsed since Ben-Rafael et al.'s (2006) seminal work as well as the more recent scholarship on the LL of Israel, this study aims to revisit the LL of Tel Aviv, Israel. Specifically, it seeks to explore the intricate relationship between Israeli Jews and Palestinian Israelis in Tel Aviv that is influenced by and manifested through multilingual signage. To that end, this LL study returns to the primary research questions of Ben-Rafael et al. (2006) and applies a conceptual framework from current LL research conducted both within and outside of Israel. The research questions are as follows:

1) Does Hebrew, which is the language of the larger population group in Israel, play the predominant role in all LL sites investigated?
2) In sites where members of the Arabic minority are numerous, does the Arabic signage challenge the overall predominance of Hebrew?
3) What is the role of a nonlocal language like English in the LL?

Chapter 3: Methodology

To address the research questions and to build on and update the research by Ben-Rafael, et al. (2006), a mixed-method approach to the LL of Tel Aviv was employed, combining quantitative and qualitative measures and focusing on just two of the six locations in Ben-Rafael et al. (2006). The decision to focus on Tel Aviv and Ajami from all the six localities examined in Ben-Rafael et al.'s (2006) study was driven by several factors. Firstly, given the limitations in timeframe and resources, conducting a study on the scale of Ben-Rafael's was not feasible. As a result, the decision was made to focus on just two locations. The primary consideration was the temporal aspect of Google Street View. The objective was to choose an area in Israel with the latest and most updated images, and these two localities were selected because they have the most recent updates on Google Street View: King George Street in Tel Aviv was captured in July 2022, and Yefet Street in Ajami in August 2022. Furthermore, as Ben-Rafael et al. (2006) themselves indicated, these two localities respectively represent Hebrew-speaking and Arabic-speaking communities, offering the opportunity for comparative analysis. Their close proximity also facilitated efficient data collection and comparison. Lastly, personal connections in these areas facilitated the survey process and helped in gathering participants for interviews, making them ideal choices for the study. Moreover, an investigation of Hebrew, English, and Arabic on signs within these two localities serves to uncover the intricate interplay between language and power in the city and how the multicultural and socio-political dynamics are embedded in its urban development.

The study area spans from 54 to 107 King George St. in Tel Aviv, and from 71 to 116 Yefet St. in Ajami. Figures 1 and 2 depict the geographic extent of these areas. In Tel Aviv, a total of 213 LL items were examined, consisting of 173 unofficial and 40 official items. In Ajami, a total of 186 LL items were examined, consisting of 156 unofficial and 30 official items.

Figure 1

54 to 107 King George St., Tel Aviv

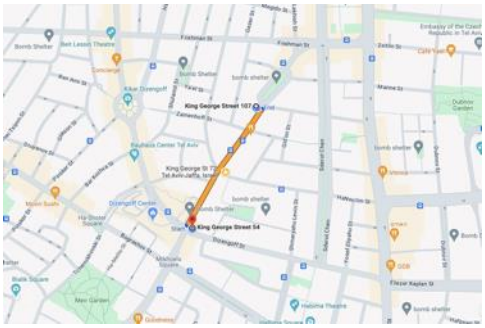
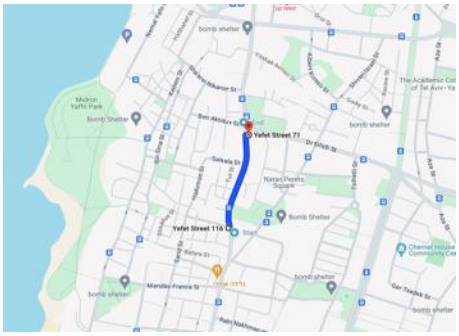


Figure 2

71 to 116 Yefet St., Ajami



To investigate the LLs in these two neighborhoods (Tel Aviv and Ajami–Jaffa), Malinowski's (2015) triadic approach for analyzing the conceived space, perceived space, and lived space was employed. Malinowski's (2015) triadic approach builds on Lefebvre's (1991) model of perceived, conceived, and lived spaces. Lefebvre's model highlights the conflict between "top-down, institutionally mandated conceived spaces and the perceived spaces visible to the human eye, and lived spaces enacted through human practice" (Malinowski, 2015, p. 109). Malinowski suggests applying Lefebvre's framework to study local perceptions in politically divided, multilingual environments.

Malinowski (2015) defines the conceived space as the representations of language upheld and promoted by parliament and policy makers. This space is institutionally mandated, shaped by national language policies, directives by local municipalities, and neighborhood development

plans. These policies influence how people perceive the LL and can reveal official intentions for how the area is perceived and how it aims to be perceived. This aspect can be investigated through the analysis of source texts.

For Malinowski (2015) the concept of perceived space pertains to the distribution of languages on signs as observed and documented by the researcher within the visual landscape. This distribution can be captured using cameras, for example. Analyzing these spatial representations involves decoding words, symbols, and other elements of the LL, collecting and categorizing signs, and conducting textual and multimodal discourse analysis.

According to Malinowski (2015), the lived space is the area where people reside and spend their daily lives. It is within this space that individuals "experience that space through symbols and metaphors that appear in its landscape" (p. 107-108). This space is shaped by the thoughts and subjective experiences of the inhabitants in their neighborhood. Ethnographic research methods, such as interviews, surveys, participant observation, and collaborative writing and mapping activities, are essential for gaining a deeper understanding of the lived space.

In conclusion, the three spaces—conceived, perceived, and lived—are interconnected, and a comprehensive study of all three is crucial for a deeper theoretical understanding of the linguistic landscape as a "sociolinguistic-spatial phenomenon" (Malinowski, 2015, 109). Reflecting the shift in LL Studies to move beyond purely quantitative approaches to documenting language use in public spaces, this approach provides a more thorough insight into the LL in specific contexts, as noted by Trumper-Hecht (2010). As mentioned above, Ben-Rafael et al. (2006) used solely a quantitative approach to the LL of Israel, focusing exclusively on the perceived space. In contrast, this study seeks to compare its findings with theirs and delve deeper into other qualitative variables influencing the LL by examining both the conceived and lived spaces of Tel Aviv. Understanding how these spaces interact and influence each other is key to comprehending the complex dynamics of language use and representation in public spaces.

Conceived Space

To analyze the conceived space – how the spaces are designed and enforced by policies and urban design practices – Tel Aviv's laws and policies regarding public language use were examined. These include the British Mandate (1922), the Law and Administration Ordinance (1948), the 1995-96 Policy for Language Education in Israel, the Supreme Court Order (2002): Adalah, et al. v. The Municipality of Tel Aviv-Jaffa, et al, and the Jewish Nation-State law (2018), all of which remain influential to this day.

Perceived Space

To analyze the perceived space– how spaces are perceived through sight, sound, and other senses– Google Street View, a feature of Google Maps, was used to capture images of signage from summer 2022 along sections of Tel Aviv's two main commercial thoroughfares, King George Street in Tel Aviv (July 2022), and Yefet Street in Ajami (August 2022). A sign was defined according to Backhaus' (2006) definition as "any piece of written text within a spatially definable frame." (p. 55). Google Street View screenshots were utilized to document the LL data. These screenshots were organized according to their respective streets and street numbers, and were lettered sequentially (e.g., a, b, c) to designate the text being categorized. The screenshots captured all written items for each street address. Then, within each screenshot each written text was marked as a separate sign and categorized. As a result, it was often the case that there were multiple signs in each screenshot. For example, Figure 3 shows one screenshot with two LL items (coded as 87-KG-f,g).

Figure 3.

Sample Screenshot

Furthermore, duplicates of the same poster were only counted once. The sections analyzed were 400 meters, or approximately 0.2 miles, in length. The length of the streets selected for analysis was determined to provide a representative cross-sectional sample of each street and to fit within the study's time constraints.

The signs were evaluated and categorized using criteria outlined by Ben-Rafael et al. (2006), Backhaus (2006), Özcan (2019), and Scollon and Scollon (2003). Specifically, I applied Ben-Rafael et al.'s (2006) top-down and bottom-up frameworks to categorize the signage as either official or unofficial. Scollon and Scollon's (2003) geosemiotic framework was applied for sign analysis. This included assessing whether the sign was official or unofficial, the number of languages featured, the function of each language on unofficial signs, the font size and color, the sequence and positioning of languages, the material's temporality or durability, and other relevant factors.

Özcan's (2019) categorization scheme for social-space, sociolinguistic, and language-related LL data was applied. The social-space analysis, according to Özcan, "provides insights about the physical configuration and semiotic effects of each item" (p. 315). His sociolinguistic analysis categories examine the different contexts to which each item could belong. Finally, the language-related data categorizations aim to "classify the collected data according to semantic importance" (p. 316). Furthermore, Backhaus's (2006) method for analyzing multilingual signage was adopted to determine the “code preference has been determined through order and size of the texts.” (p. 60). In addition to the categories from these sources, this study included additional

categories to label the commercial function of each store with a sign, such as clothing, beauty/nail/hair salon, pharmacy/drug store, food, houseware, private offices/banks, independent services, and other. Furthermore, the function of each text in unofficial multilingual signage was assessed, including whether it served as the title or name of the storefront, brand name, or provided information such as hours, job openings, etc.

The signs were first categorized as official (top-down) or unofficial (bottom-up). Their relative size, height[2], material, and external position were recorded. Qualitative analysis included the textual genre and context, including the social, political, and neighborhood contexts. For commercial signs, their function was noted. Each sign was categorized as monolingual, bilingual, or trilingual, and the size and font of the text were recorded. For multilingual signs, the orientation of each language and the function of each language on the sign were noted, as well as whether the meaning was the same or different. These data were recorded and tabulated in Excel. The categorization scheme used to differentiate and describe each sign can be found in Tables 1, 2, and 3.

Table 1. Categorization Scheme of Social-space related LL data.

Category	Class
Sign Size	Small, Medium, Large
Height	High, Medium, Low
Material	Metal/Aluminum, Plastic, Fabric (e.g., coated polyesters), Tile, Glass, Wood, Paint, Paper, Paper laminated in glass,
Textual Genre	Leaflet, Moveable sign, Paper, Poster, Sign, Graffiti, Sticker
External Position	Bin, Door, Ground, Light post, Signpost, Wall, Projecting (e.g., Awning), Freestanding, Window
Type of Writing	Printed, Written, Carved, Chalked, Constructed

[2] Everything above eye-level was labeled as “high,” the area between eye-level and reachable heights was labeled as “medium,” and below eye-level was labeled as “low.”

Hebrew Text Size	Small, Medium, Large
Arabic Text Size	Small, Medium, Large
English Text Size	Small, Medium, Large
Other Text Size	Small, Medium, Large
Hebrew Text Font	Colored, Bold, Italics/script, Underline, Basic font, All caps, No caps
Arabic Text Font	Colored, Bold, Italics/script, Underline, Basic font, All caps, No caps
English Text Font	Colored, Bold, Italics/script, Underline, Basic font, All caps, No caps
Other Text Font	Colored, Bold, Italics/script, Underline, Basic font, All caps, No caps

Table 2. Categorization scheme of Sociolinguistic-related LL data.

Category	Class
Context	Context, Advertisement, Culture/community, Information, Politics, Service, Unsure
Social Context	Awareness/Warning, Guide/Street signs, Local, National, Development, Initiative, Commercial/Magazine, Social Service
Political Context	Activism, Anti-racism, Demand, Refugee Rights, Environment, Naturalization, Notice, Political Figure, Rent, Unsure, N/A
Neighborhood Context	Commerce, Regulatory, Culture/community, Transportation Services, Education, Health, Safety, Job Offer, Local, Political
Commercial Function	Clothing, Beauty/nail/hair salon, Pharmacy/drug store, Food, House-ware, Private Offices (and banks), Independent services (laundromat, tailor, etc.), Other (e.g. ads, graffiti, information)
Level of information	Top-down (official), Top-down (official)

Table 3. Categorization scheme of Language-related LL data.

Category	Class
Monolingual	Hebrew, Arabic, English, Other
Bilingual	Hebrew-Arabic, Hebrew-English, Arabic-Hebrew, Arabic-English, Hebrew and Roman alphabet transliteration, Other-English, Hebrew-Other
Trilingual	Hebrew-Arabic-English, Hebrew-Arabic-Other/Roman alphabet transliteration
Orientation of Multilingual Signs (High to Low)	All side-by-side, Hebrew-English, Hebrew-Arabic, English-Arabic, English-Hebrew, Arabic-English, Arabic-Hebrew, Other-Hebrew, Other-English, Hebrew-Other, Hebrew-Arabic-English, Hebrew-English-Arabic, English-Hebrew-Arabic, Arabic-English-Hebrew

Hebrew text function (unofficial multilingual sign)	Title/Name of storefront, Brand name, Information (hours, job openings, etc.)
Arabic text function (unofficial multilingual sign)	Title/Name of storefront, Brand name, Information (hours, job openings, etc.)
English text function (unofficial multilingual sign)	Title/Name of storefront, Brand name, Information (hours, job openings, etc.)
Other text function (unofficial multilingual sign)	Title/Name of storefront, Brand name, Information (hours, job openings, etc.)
Do the languages on unofficial multilingual signs translate to the same word or have different meanings?	Yes, No

Lived Space

To analyze the lived space– how the spaces are experienced subjectively by those who inhabit the spaces– a survey and optional semi-structured virtual interviews with residents of Tel Aviv were utilized. Eight residents were surveyed, two of whom then agreed to be interviewed. Participants are all residents of the Tel Aviv metropolitan area. Participants were recruited through connections made by a professor at Emory University and through the researcher's family, who are residents of Tel Aviv. Following approval by Emory University's Institutional Review Board in November 2023 (IRB Study No. 00006950), the survey was distributed through Google Forms, and the interviews were conducted via Zoom. The survey and interviews with residents aimed to assess their perceptions and impressions of public language use, both visible and audible. The survey and interview questions are detailed in Appendix B and C.

The survey was divided into four sections: demographic information, geographical and linguistic background, language use in daily life, and perceptions. Firstly, participants (N = 8), with ages 18 to 44, were asked to provide demographic details such as age, gender, race, and formal education level.

Table 4. Demographics of Survey Participants.

Characteristics		***n***	**%**
Age (years old)	18-24	1	12.5
	25-34	6	75
	35-44	1	12.5
Gender	Male	5	37.5
	Female	3	62.5
Ethnicity	Mizrahi or Ashkenazi	7	87.5
	Caucasian	1	12.5
Education Level	High school degree or equivalent	2	25
	Bachelor's degree	4	50
	Master's degree	2	25
Total		8	100

The second section explored participants' geographical and language background, including their current neighborhood in Tel Aviv, any previous residences within Israel or abroad, the languages they spoke and their proficiency levels, and the main commercial street in their neighborhood. Participants were also asked to share their perceptions on the prevalence of Hebrew, Arabic, English, or any other language being seen, spoken, or heard on this commercial street. Additionally, they were asked how many hours, on average, they were typically away from their home each day, and to indicate the typical streets or routes they took regularly.

Next, participants were asked to indicate how often they encountered Hebrew, English, Arabic, or another language during their daily activities in public. Responses were recorded using a 5-point Likert scale ranging from 1 to 5, where 1 represents "Never," 2 represents "Rarely," 3 represents "Occasionally," 4 represents "Frequently," and 5 represents "Always."

In the final section of the survey, participants were asked to share their opinions on various aspects of signage in their neighborhood, drawing from their observations and experiences living in the area. They started by identifying the streets or landmarks they believed marked the boundaries of their neighborhood. Next, participants were asked about the prevalence of bilingual signs in their neighborhood, choosing from “None,” “Few,” “Half,” “Most,” or “All.” They were then asked to specify which languages appeared most frequently on these bilingual signs, selecting from Hebrew and Arabic, Hebrew and English, or Arabic and English. Following this, participants were asked about the prevalence of multilingual signs in their neighborhood, again choosing from “None,” “Few,” “Half,” “Most,” or “All.” Lastly, participants were asked to indicate which language on public signs captured their attention the most or least, with the options being Hebrew, Arabic, and English.

Those participants who indicated a desire to elaborate on their survey responses were invited for an interview. This approach allowed for a deeper exploration of their choices by discussing specific examples from the survey, with a particular focus on their perceptions of each language. To ensure that key points were addressed consistently across interviews, specific questions were asked, and are detailed in Appendix C. In addition to elaborating on survey questions, participants were presented with a selection of nine signs, four from King George St. and five from Yefet St. These signs are illustrated in Figures 1 through 9 in Appendix C. They were asked to identify the street they believed each image came from and to explain their reasoning. Furthermore, participants were prompted to provide insights into the signs' origins and intended audience.

Chapter 4: Results

This chapter will present the study's results, structured around three main sections corresponding to the three different data sources: conceived space, perceived space, and lived space. The analyses of these sources encompass qualitative and quantitative methods to examine the roles and perceptions of Hebrew, Arabic, and English on LL items in Israel.

Conceived Space

The conceived space outlines the influential language laws and policies of Israel in chronological order. This section reveals how representations of language can be upheld and promoted by parliament and policy makers.

Several language laws and policies have significantly influenced the LL of Israel and the status of its languages. Ultimately, these governmental actions have cemented Hebrew's privileged position within the state. Key milestones include the British Mandate (1922), The Law and Administration Ordinance (1948), The 1995-96 Policy for Language Education in Israel, a Supreme Court Order (2002): Adalah, et al. v. The Municipality of Tel Aviv-Jaffa, et al, and the Jewish Nation-State Law (2018).

In 1922, the British Mandate articles were issued by the Council of the League of Nations. Earlier agreements, such as the McMahon Correspondence (1915-1916), the Sykes-Picot Agreement (1916), and the Balfour Declaration (1917), significantly influenced the content and nature of the British Mandate. The McMahon Correspondence involved a series of letters exchanged during World War I, in which the British government agreed to acknowledge Arab independence if they rebelled against the Ottoman Empire. The Sykes-Picot Agreement divided the Middle East into British and French spheres of influence, while the Balfour Declaration committed Britain to establishing a “national home” for the Jewish people (Ginat, 2018). Article 82 of the Palestine Order-In-Council (1922) designated English, Arabic, and Hebrew—in that

specific hierarchical order—as the official languages of the country. English held the highest status as the language of the colonial power at the time. Arabic was listed second, as it was the language of the majority population. Hebrew was included to acknowledge the language of the Jewish minority.

At this time, Hebrew served as the national and cultural foundation of the Zionist movement. Recognizing the need to establish Hebrew as the language of the Jewish community, Zionist leaders endeavored to promote its use in public spaces. In the early 1920s, the British governor of Jerusalem began the process of naming streets in the city. The ceramic signs for these streets followed the official language policy of the Mandate government, displaying English at the top, Arabic in the middle, and Hebrew at the bottom. Each language showed a different name for the streets, even though all the street names had identical meanings (Azaryahu, 2014).

However, as Azaryahu (2014) reports, the Municipal Corporations Ordinance of 1934 "invested municipalities with the statutory *obligation* to affix street names," but "did not specify which languages should appear on the signs" (p. 467). This indicates that local authorities in Israel had the exclusive authority to determine language preferences for street signs. While the municipalities of Jerusalem and Haifa adhered to the Mandate government policy, Tel Aviv, coined the 'First Hebrew City,' diverged from this practice. In Tel Aviv, Hebrew was prominently displayed at the top of street signs, with English in the center, and Arabic at the bottom. These streets were named in Hebrew, with the street designations then transliterated into English and Arabic. The same pattern was observed in Arab-Jewish Jaffa, where street signs featured Arabic at the top, followed by translations into English in the center and Hebrew at the bottom (Azaryahu, 2014).

Following the state's declaration of independence in 1948, the Law and Administration Ordinance eliminated the official status of English, thereby establishing Arabic and Hebrew as

the sole official languages. Israel's independence, coupled with the war fought for it, led to significant political, administrative, and demographic shifts. During this time, street signs in Jerusalem, Haifa, and Arab-Jewish Jaffa were modified to display the predominance of Hebrew.

The 1995-96 Policy for Language Education in Israel, the first formal statement of a language education policy in the country, introduced several significant provisions. Modern Standard Arabic instruction became mandatory from Grade 7 to Grade 10 in Jewish schools, with optional teaching in Grades 5, 6, 11, and 12. Some schools were able to offer French as an alternative. English was established as the primary foreign language, with instruction permitted from Grade 3, optional in Grades 3 and 4, and compulsory until Grade 12. In the Arab sector, Hebrew instruction was optional in Grade 1 but compulsory from Grades 2 to 12. Revised requirements for immigrants encouraged them to maintain their home languages while acquiring Hebrew. The policy also included revised requirements for new immigrants, encouraging them to maintain their native languages while acquiring Hebrew (Spolsky & Shohamy, 1999). Despite this, there have been numerous efforts by parents, schools, and municipalities to implement even earlier English language programs. For example, many schools have opted to teach English from the first grade or even earlier (Shohamy, 2014).

The next significant legal development regarding the LL of Tel Aviv was the Supreme Court Order of 2002, which shifted responsibility to the judicial branch. Adalah, an organization advocating for the rights of the Palestinian Arab minority in Israel, filed two petitions in 1999 and 2002. The Supreme Court issued an order in 1999, addressing the case of *Adalah, et al. v. The Ministry of Transportation, et al*. In this petition, Adalah sought the inclusion of Arabic on all national road signs (Adalah, p. 1). The court sided with Adalah, mandating that five Arab-Jewish cities, including Tel Aviv, needed to incorporate Arabic into all road signs within five years from the date of the ruling. The unanimous view of the three judges was that, while Hebrew was Israel's primary language, Arabic held the status of an official language. They

agreed that municipalities in cities with Arab minorities should include Arabic on public signs to promote "'dignified co-existence in the spirit of mutual tolerance and equality' and that this did not undermine the status of Hebrew." (Azaryahu, 2014, p. 473).

The final influential piece of language legislation was the 2018 Jewish Nation-State law. According to this law, Hebrew is designated the primary official language of the State of Israel, while Arabic maintains a 'special status.' The law specifies that the regulation of Arabic "in state institutions or in contacts with them shall be prescribed by law" (p. 2). However, it also says that Arabic can still be used in various official capacities, including in government, education, and the legal system.

Interestingly, the International Trade Administration mentions Israel's Country Commercial Guide, which outlines the strict marking and labeling requirements for products offered in the local market. In all instances, Hebrew must be used, and English may be added, provided the printed letters are no larger than those in Hebrew (*Israel's Country Commercial Guide: Labeling/Marking Requirements*, 2023).

Language laws and policies have played a pivotal role in shaping Israel's LL and the status of its languages. These decisions represent significant developments in addressing linguistic representation and inclusivity on national road signage in Tel Aviv. Initially, local municipalities determined the language preference for official multilingual signage, but this responsibility gradually shifted to national authorities.

Perceived Space

This section presents the results regarding the perceived space in the two localities, Tel Aviv and Ajami. It directly addresses each research question by quantifying the qualities of unofficial and official LL items found in Tel Aviv and Ajami. The data is organized into multiple

charts to effectively communicate the objectives per research question. Each data point is referenced first by its percentage and then by the number of items in parentheses.

RQ1: Does Hebrew, which is the language of the larger population group in Israel, play the predominant role in all LL sites investigated?

To address the research question concerning the predominant role of Hebrew in the LL of Tel Aviv and Ajami, this study conducted a comprehensive analysis of public language use along a 400-meter stretch of the two streets, King George Street and Yefet Street, as captured by Google Street View in summer 2022. The examination encompassed a comparison of Hebrew signage across official and unofficial contexts in both locations (Table 5) and a detailed exploration of code preference in multilingual signs in the same areas (Table 6). Furthermore, the study included a comparative analysis of the distribution of signage in the LL of the two localities, contrasting the current findings with those of Ben-Rafael et al.'s (2006) research (Table 7). Lastly, the research investigated the code preference of Hebrew-English signs in both official and unofficial contexts within Tel Aviv and Ajami.

Based on the data, Hebrew emerged as the dominant language in both localities. Table 5 indicates that Hebrew-only signs accounted for approximately half of all categorized signs: 44.5% of official and 45% of unofficial signage in Tel Aviv (official), and 40% of official and 51.9% of unofficial signage in Ajami. Furthermore, Table 5 indicates that Hebrew was present in a significant proportion of all types of signs in each locality. Specifically, when considering the total signage in each area, 65.3% of unofficial and 100% of official signage in Tel Aviv, and 73.5% of unofficial and 100% of official signage in Ajami included Hebrew.

Table 5. Total signage in both localities. (no. of items and %).

	Tel Aviv (unofficial)	**Tel Aviv (official)**	**Ajami (unofficial)**	**Ajami (official)**
Hebrew only	44.5 (*n*=77)	45 (*n*=18)	51.9 (*n*=81)	40 (*n*=12)

Arabic only	-	-	10.3 (*n*=16)	-
English only	28.3 (*n*=49)	-	11.5 (*n*=18)	-
Other only	4 (*n*=7)	-	1.3 (*n*=2)	-
Hebrew-English	20.8 (*n*=36)	7.5 (*n*=3)	9.6 (*n*=15)	6.7 (*n*=2)
Hebrew-Arabic	-	-	9 (*n*=14)	3.3 (*n*=1)
Hebrew-Other	0.6 (*n*=1)	-	-	-
Hebrew and Roman alphabet transliteration	1.2 (*n*=2)	2.5 (*n*=3)	0.6 (*n*=1)	-
Arabic-English	-	-	3.2 (*n*=5)	-
Other-English	0.6 (*n*=1)	-	-	-
Trilingual signs	-	45 (*n*=18)	2.6 (*n*=4)	50 (*n*=15)
Total # of signs	100 (*n*=173)	100 (*n*=40)	100 (*n*=156)	100 (*n*=30)

Whereas Table 5 presents the percentage of total signage in both localities, Table 6 displays the degree to which Hebrew was the preferred language on multilingual signs in the two localities (with visuals in Figures 4 and 5 in Appendix D). Following Scollon and Scollon's (2003) geosemiotic approach for analyzing code preference, the language placed highest on a sign was deemed most important, followed by others in descending order. On unofficial signage in Tel Aviv, Hebrew-English and English-Hebrew were equally prominent in the landscape, accounting together for 75% of all signs observed. On official signage in both Tel Aviv and Ajami, when languages were presented in hierarchical order (i.e., not side-by-side), Hebrew was positioned at the top in 100% (35/35) of the multilingual signs. Additionally, in unofficial Ajami signage that contained both Hebrew and Arabic, Hebrew was predominantly positioned at the top of the signs 78% (7/9) of the time; however, on unofficial English-Hebrew signage in Ajami, English took precedence over Hebrew, appearing in that order in 56% (5/9) of the time, compared to 44% (4/9) with Hebrew at the top. In sum, in both localities, Hebrew appeared as the preferred language 67% (61/91) of the time, regardless of sign type or the location. The role

and prominence of English in the LL will be discussed below when responding to Research Question 3.

Table 6. Code Preference (High to Low) of all Multilingual Signs in the two localities (% and no. of items).

	Tel Aviv (Unofficial)	**Tel Aviv (Official)**	**Ajami (Unofficial)**	**Ajami (Official)**
All side-by-side	20 (*n*= 8)	13.6 (*n*= 3)	38.5 (*n*= 15)	11.1 (*n*= 2)
Hebrew-Arabic	-	-	17.9 (*n*= 7)	5.6 (*n*= 1)
Hebrew-English	37.5 (*n*= 15)	-	10.3 (*n*= 4)	-
Hebrew-Other	-	4.5 (*n*= 1)	-	-
Arabic-Hebrew	-	-	5.1 (*n*= 2)	-
Arabic-English	-	-	5.1 (*n*= 2)	-
English-Hebrew	37.5 (*n*= 15)	-	12.8 (*n*= 5)	-
English-Arabic	-	-	2.6 (*n*= 1)	-
Other-Hebrew	2.5 (*n*= 1)	-	-	-
Other-English	2.5 (*n*= 1)	-	-	-
Hebrew-English-Arabic	-	9.1 (*n*= 2)	-	16.7 (*n*= 3)
Hebrew-Arabic-English	-	63.6 (*n*= 14)	-	66.7 (*n*= 12)
Hebrew-English-Other	-	9.1 (*n*= 2)	-	-
English-Hebrew-Arabic	-	-	5.1 (*n*= 2)	-
Arabic-English-Hebrew	-	-	2.6 (*n*= 1)	-
Total	100 (*n*= 40)	100 (*n*= 22)	100 (*n*= 39)	100 (*n*= 18)

Furthermore, an analysis of the material of Hebrew-only LL items on unofficial signage reveals interesting patterns in both Tel Aviv and Ajami. In Tel Aviv, 46.8% of Hebrew-only signage were classified as permanent signs, with posters comprising 24.7% (followed by 13% being categorized as paper, 7.8% for graffiti, and 7.8% for stickers). Similarly, in Ajami, permanent signs accounted for 45.7% of Hebrew-only signage, with posters at 21% (followed by 14.8% being categorized as paper, 11.1% as stickers, 6.2% as moveable signage, and 1.2% as

graffiti). These findings indicate that a sizable number of Hebrew-only signage in both locations was not temporary.

Because of this study's focus on revisiting the LL of two of the locations in Ben-Rafael, et al. (2006) eighteen years later, Table 7 compares Ben-Rafael et al.'s (2006) results with this study according to the visible languages in the two localities. Unfortunately, it is not possible to make a further comparison between this study's and Ben-Rafael et al.'s (2006) top-down (official) and bottom-up (unofficial) signage because Ben-Rafael et al. (2006) did not provide specific locations for official and unofficial signage.

In Tel Aviv, this study's data identified a higher percentage of Hebrew-only signage (63.3%) compared to Ben-Rafael et al.'s (2006) study (52.1%). Nonetheless, in both studies, 100% of the signs in Tel Aviv contain Hebrew. Both datasets report that over half of all Tel Aviv signage is solely in Hebrew, and multilingual signs consistently place Hebrew at the top, indicating a strong preference for Hebrew in all Tel Aviv signage.

Table 7. LL items by languages in the two localities from Ben-Rafael et al. (2006) and current study (% and no. of items).[3]

LL languages	Ben-Rafael - Tel Aviv	Current data - Tel Aviv	Ben-Rafael - Ajami	Current data - Ajami
Hebrew only	52.1 (*n*= 172)	63.6 (*n*= 96)	74.1 (*n*= 40)	56.4 (*n*= 93)
Arabic only	-	-	-	9.7 (*n*= 16)
English only	-	28.3 (*n*=49)	-	11.6 (*n*=18)
Hebrew-Arabic	-	-	16.7 (*n*= 9)	9.1 (*n*=15)
Arabic-English	-	-	-	3.0 (*n*= 5)
Hebrew-English	46.1 (*n*= 152)	25.8 (*n*= 39)	-	10.3 (*n*= 17)
Hebrew-Arabic-English	1.8 (*n*= 6)	10.6 (*n*= 16)	9.3 (*n*= 5)	11.5 (*n*= 19)
Total	100.0 (*n*= 330)	100 (*n*= 151)	100.0 (*n*= 54)	100 (*n*= 165)

[3] Table 7 only includes categories that Ben-Rafael et al. (2006) included in their table, explaining why the totals in my current data for both localities are fewer than those in Table 5.

RQ2: In sites where members of the Arabic minority are numerous, does the Arabic signage challenge the overall predominance of Hebrew?

To respond to RQ2 on the presence of Arabic in the LL, the signage in Ajami, an Israeli-Palestinian neighborhood in Tel Aviv with a significant Arabic minority population, was investigated. As the categorization of signs by language in Ajami in Table 8 indicates, Arabic signage did not challenge the overall predominance of Hebrew in Ajami. Regardless of whether the signs were monolingual or multilingual, Hebrew dominated as the most prominent language. The majority of unofficial monolingual signage was Hebrew-only, accounting for 51.9%, followed by English-only at 11.5% and Arabic-only at 10.3%. On official signage in Ajami, whether mono- or multilingual, 100% of the signs contained Hebrew, either exclusively (40%) or in conjunction with Arabic and/or English.

While present in unofficial signage, Arabic appeared in only 25% of all signs (39/156 signs). In contrast, Hebrew was included in 74.2% of all signs (115/156 signs). Among unofficial multilingual signs in Ajami, Table 6 also shows that 87.2% included Hebrew (34/39), while only 58.9% (23/39) included Arabic; 61.5% (24/39) included English.

Table 6 provides a further analysis of code preferences observed in multilingual signs in Ajami. Excluding the 15 unofficial signs with side-by-side presentations, there remain 24 unofficial multilingual signs that display languages hierarchically. Among these, 45.8% (11/24) favored Hebrew, 33.3% (8/24) favored English, and 20.8% (5/24) favored Arabic. On the 18 official multilingual signs, Hebrew was the preferred code each time (100%); Arabic never appeared as the primary language on an official sign. Instead, languages were presented either side-by-side or Hebrew maintained its code preference.

Table 8. Signs categorized by language in Ajami (% and no. of items).

	Unofficial	**Official**
Hebrew	51.9 (*n*=81)	40 (*n*=12)

Arabic	10.3 (*n*=16)	-
English	11.5 (*n*=18)	-
Other	1.3 (*n*=2)	-
Hebrew-Arabic	9 (*n*=14)	3.3 (*n*=1)
Hebrew-English	9.6 (*n*=15)	6.7 (*n*=2)
Arabic-English	3.2 (*n*=5)	-
Hebrew and Roman alphabet transliteration	0.6 (*n*=1)	-
Hebrew-Arabic-English	2.6 (*n*=4)	50 (*n*=15)
Total	100 (*n*=156)	100 (*n*=30)

Table 9 presents the neighborhood context of Arabic-only signage in Ajami. The data shows that Arabic-only signs were primarily used in cultural contexts (56.3%) and religious contexts (25%). One notable example of this cultural practice was the custom of displaying paper memorials for recently deceased individuals, which typically included the names of the deceased and their family members. An example of such a memorial is depicted in Figure 6 (coded in the dataset as 80-Y-b). The data also indicates that Arabic-only signs were rarely used as the sole language on a sign for commercial purposes, especially when compared to Hebrew-only and English-only signs.

Figure 6

Arabic-only Cultural Context LL item.

Table 9. Neighborhood Context of Arabic-only signage in Ajami (% and no. of items).

Neighborhood Context	Ajami (Unofficial)

Commerce	6.3 (*n*=1)
Culture	56.3 (*n*=9)
Safety	6.3 (*n*=1)
Political	6.3 (*n*=1)
Religious	25 (*n*=4)
Unsure or N/A	6.3 (*n*=1)
Total	100 (*n*=16)

Interestingly, 68.8% (11/16) of the Arabic-only signs in Ajami were made of paper, and 100% (16/16) of the Arabic-only signs were temporary genres (stickers, graffiti, posters). In comparison, only 39.5% (32/81) of unofficial Hebrew-only signs in Ajami were paper, and 54.3% (44/81) of Hebrew-only signs were temporary genres. 85.7% (6/7) of bilingual Arabic-English or Arabic-Hebrew signs were either posters or signs, serving an advertising or commercial function. The text function of these signs was primarily for displaying the store name and providing store information.

Comparing this study's findings on the visible presence of Arabic with Ben-Rafael, et al.(2006) reveals interesting developments over the last eighteen years. As Table 7 indicates, whereas this study found that 9.7% of all signs in Ajami were Arabic-only, and 3% were Arabic-English, Ben-Rafael et al.'s (2006) study did not report any Arabic-only or Arabic-English signs. Moreover, only 26% (14/54) of the signs in Ajami for Ben-Rafael et al. (2006) contained any Arabic, whereas 33% (55/165) of the signs found in Ajami in this study contained some Arabic. In Tel Aviv, both studies found Arabic only on trilingual signs. While Ben-Rafael et al.'s (2006) study did not explicitly distinguish between official and unofficial signage, the current research reveals that Arabic exclusively appeared on official trilingual signs in Tel Aviv.

The study analyzed various data points to investigate whether Arabic signage challenges the overall dominance of Hebrew in areas with a significant Arab population. It was clear that Hebrew was the predominant language in all monolingual and multilingual signage in Ajami,

both in terms of quantity and code preference. Arabic appeared in only 25% of all unofficial signs in the area; on official signage, it only appeared in conjunction with or below Hebrew or English. Furthermore, while Hebrew and English signage were primarily found in commercial and advertising contexts, Arabic was most prevalent in cultural and religious contexts. Overall, the study indicates that Arabic, even in areas where members of the Arabic minority are numerous, does not challenge the overall predominance of Hebrew.

RQ3: What is the role of a nonlocal language like English in the LL?

Table 5 displays the inclusion of English in the total number of LL items in each locality. In Tel Aviv, English is included on 49.7% (86/173) of unofficial signs and on 52.5% (21/40) of official signs. In Ajami, English is included on 27.1% (42/155) of unofficial signs, and on 56.7% (17/30) of official signs. Additionally, when examining signage in both official and unofficial contexts in Ajami, a slightly higher percentage of signs included English (31.9%; 59/185), compared to Arabic (29.7%; 55/185).

Table 6 illustrates the extent to which English is the preferred language in multilingual signage. In unofficial LL items, English is the preferred language on 37.5% (15/40) of items in Tel Aviv and 20.5% (8/39) in Ajami. However, English is never the preferred language in official signage in either locality.

To investigate further the role that English plays in the LL of the two localities, the code preference of all Hebrew-English signs was analyzed, as shown in Table 11. On unofficial signage in both localities, there was nearly an equal number of Hebrew-English signs oriented with either Hebrew or English at the top as the preferred language. On official signage in both localities, in contrast, the prevailing layout for Hebrew-English signage was a side-by-side orientation. English-Arabic signs were excluded from this analysis because there were a total of only five such signs, all of which located in Ajami.

Table 10. Code Preference (High to Low) of Hebrew-English signs in the two localities (% and no. of items).

Orientation	Tel Aviv (Unofficial)	Tel Aviv (Official)	Ajami (Unofficial)	Ajami (Official)
All side-by-side	19.4 (*n*=7)	100 (*n*=3)	40 (*n*=6)	100 (*n*=2)
Hebrew-English	38.9 (*n*=14)	-	26.7 (*n*=4)	-
English-Hebrew	41.7 (*n*=15)	-	33.3 (*n*=5)	-
Total	100 (*n*=36)	100 (*n*=3)	100 (*n*=15)	100 (*n*=2)

Table 11 offers insights into the functions of the three languages, Hebrew, Arabic, and English. Only English referred to global brands on signage, representing 16.2% of the signs containing English in Tel Aviv and 41.7% in Ajami; no other language served this function. In contrast, among all signs featuring Arabic in Ajami, Arabic predominantly referenced titles (e.g., name of a storefront) (52.2%) and information (e.g., hours of operation) (47.8%). Hebrew appeared most frequently on multilingual signage overall and followed a similar pattern to Arabic, primarily referencing store names and information in both localities.

Table 11. Text function of LL languages on unofficial multilingual signage in the two localities (% and no. of items).

	Location	Title	Brand name	Information	Total
Arabic	Tel Aviv	-	-	-	-
	Ajami	52.2 (*n*=12)	-	47.8 (*n*=11)	100 (*n*=23)
English	Tel Aviv	51.4 (*n*=19)	16.2 (*n*=6)	32.4 (*n*=12)	100 (*n*=37)
	Ajami	41.7 (*n*=10)	41.7 (*n*=10)	16.7 (*n*=4)	100 (*n*=24)
Hebrew	Tel Aviv	56.4 (*n*=22)	-	43.6 (*n*=17)	100 (*n*=39)
	Ajami	53.7 (*n*=22)	-	46.3 (*n*=19)	100 (*n*=41)
Other	Tel Aviv	60 (*n*=3)	-	40 (*n*=2)	100 (*n*=5)
	Ajami	100 (*n*=1)	-	-	100 (*n*=1)

Regarding the purpose and use of English in the LL, it was primarily evident within commercial contexts and advertising. Table 12 shows that unofficial English-only signs in both Tel Aviv and Ajami were most prevalent in commercial contexts, accounting for 46.9% of all unofficial Tel Aviv signage and 66.7% of unofficial Ajami signage. Furthermore, Table 13 reveals that the majority of English-only signs served advertising purposes, accounting for 40.8% in Tel Aviv and 66.7% in Ajami of all such signs.

Table 12. Neighborhood Context of unofficial English-only LL items in the two localities (% and no. of items).

	Tel Aviv (Unofficial)	**Ajami (Unofficial)**
Commerce	46.9 (*n*=23)	66.7 (*n*=12)
Culture	-	11.1 (*n*=2)
Local	2.0 (*n*=1)	-
Political	2.0 (*n*=1)	-
Decorative	6.1 (*n*=3)	-
Unsure or N/A	42.9 (*n*=21)	22.2 (*n*=4)
Total	100 (*n*=49)	100 (*n*=18)

Table 13. Contexts of unofficial English-only signage in the two localities (% and no. of items).

	Tel Aviv	**Ajami**
Advertisement	40.8 (*n*=20)	66.7 (*n*=12)
Culture/Religion	-	-
Information	10.2 (*n*=5)	11.1 (*n*=2)
Politics	2.0 (*n*=1)	-
Service/Community	2.0 (*n*=1)	-
Unsure	44.9 (*n*=22)	22.2 (*n*=4)
Total	100 (*n*=49)	100 (*n*=18)

In comparison with Ben-Rafael et al. (2006) on the presence of English in the visible landscape, this study found 10.3% of the signs were Hebrew-English whereas Ben-Rafael, et al. (2006) found no Hebrew-English signs in Ajami. In both datasets, the prevalence of Hebrew-Arabic and Hebrew-Arabic-English signage in Ajami is comparable. Ben-Rafael et al. (2006) did not report finding any English-only LL items, which contrasts with the noticeable presence of

English-only signs in both locations in this study: As Table 7 indicates for the current study, 28.3% of total signage in Tel Aviv and 11.6% of total signage in Ajami were English-only.

To address the research question regarding the role of a nonlocal language like English in the LL, the study conducted a comprehensive analysis. First, the text function of LL languages on unofficial multilingual signage in the two localities was examined, revealing that English exclusively referred to international brand names and often as titles of storefronts. The study also investigated the code preference of Hebrew-English signs in the two localities, finding that in unofficial contexts, there was nearly an equal number of Hebrew-English signs oriented with either Hebrew or English at the top. Lastly, the study examined the neighborhood and overall contexts of English-only signs, revealing that English in the LL was predominantly present in commercial contexts and advertising.

Lived Space

To explore the subjective experiences and perceptions of residents in the Tel Aviv metropolitan area regarding their living environment, this study employed a combination of survey and optional semi-structured virtual interview questions. A total of eight residents participated in the survey, two of them then opted to participate in interviews. The study participants mainly reside in the Tel Aviv metropolitan area, which is predominantly Israeli-Jewish. It is important to note that the perceptions gathered in this study reflect this specific demographic perspective.

Survey

In the analysis of Hebrew's role in the public sphere, all survey participants unanimously reported that Hebrew consistently assumes a predominant role in their daily public activities. Figures 7-9 illustrate that participants consistently encounter Hebrew in various forms, while the presence of other languages in these contexts is subject to more debate and variability. In

addition, when participants were asked which language on public signs captured their attention the most, 75% indicated Hebrew, while 25% chose Arabic.

Figure 7

Surveyed Languages Seen in Public.

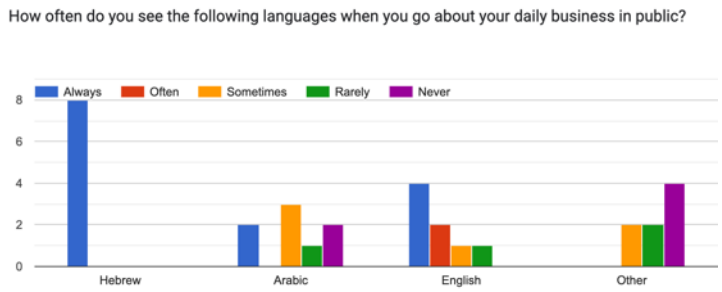


Figure 8

Surveyed Languages Heard in Public.

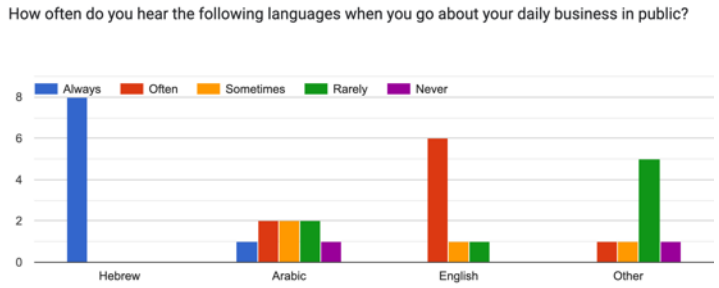
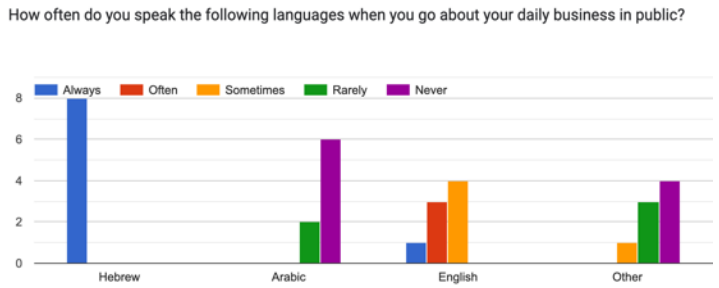


Figure 9

Surveyed Languages Spoken in Public.



Regarding Arabic's role in their lived experiences, participants were asked to report the frequency with which they encountered Arabic language in their daily lives, specifically in terms of how much they saw, heard, or spoke it per day. It is important to note that all participants indicated fluency in Hebrew and were either fluent or proficient in English. However, only one participant had basic knowledge of Arabic. Analysis of the responses revealed several key findings, which are illustrated in Table 14.

Table 14. Participant's Encounters with Arabic and English in their Daily Lives. (% and no. of items).

	Never	**Rarely**	**Occasionally**	**Frequently**	**Always**	**Frequency Totals**
See Arabic	25 (*n*=2)	25 (*n*=2)	12.5 (*n*=1)	12.5 (*n*=1)	25 (*n*=2)	2.9 (23/8)
Hear Arabic	37.5 (*n*=3)	25 (*n*=2)	25 (*n*=2)	-		1.6 (13/8)
Speak Arabic	87.5 (*n*=7)	-	12.5 (*n*=1)	-	-	1.3 (10/8)
See English	-	-	25 (*n*=2)	50 (*n*=4)	25 (*n*=2)	4 (32/8)
Hear English	-	-	50 (*n*=4)	37.5 (*n*=3)	12.5 (*n*=1)	3.6 (29/8)
Speak English	-	25 (*n*=2)	25 (*n*=2)	37.5 (*n*=3)	12.5 (*n*=1)	3.4 (27/8)

Participants were also asked to indicate the frequency of their daily encounters with Arabic and English, including how often they saw, heard, or spoke it. To assess the frequency of Arabic language encounters in participants' daily lives, responses were quantified on a scale from 1 (never) to 5 (always). As Table 14 displays, Arabic was seen much more than it was heard or spoken by the participants (2.9 vs. 1.6 and 1.3). English was also seen more than it was heard or spoken by the participants (4 vs. 3.6 and 3.4) and to a much greater degree than Arabic.

Although the survey participants were not explicitly asked about the role of a nonlocal language like English, their responses underscore its prominence in public spaces. For instance, when discussing the most common languages featured on bilingual signage in their neighborhood, 75% cited Hebrew and English, with 12.5% noting Hebrew and Arabic, and a further 12.5% indicating a mix of all three languages (Figure 10 in Appendix D).

In responding to the question about the characteristics of their neighborhood, Participant 5 observed, “In smaller cities, there are fewer tourists, so there is less English.” In contrast, King George Street is situated in the heart of the metropolitan city of Tel Aviv, where tourism likely plays a role in the prevalence of English on its signage. This observation is supported by the Interview with Participant 2, who described Tel Aviv as a hub for various cultures and foreign individuals, as well as the economic and business center of Israel.

Interview

Much of the interview data corroborates the information from the conceived and perceived spaces. The interview focused on following up on the two participants’ survey responses to gather their perceptions and observations of the languages and neighborhoods being studied.

First, the two participants were asked to describe their initial thoughts regarding Tel Aviv, Ajami, and then, more specifically, King George Street and Yefet Street. Participant 1 described Tel Aviv as the hipster and modern city of Israel. Despite its small size, it is densely populated, with a close-knit community where everyone knows each other. Many tourists also reside in the city. The population is diverse, including Arabs, Jews, Christians, and others. In the northern part of the city, residents are predominantly of European descent, and the area is generally more affluent compared to the southern part. Participant 2 perceives Tel Aviv similarly, designating it as the “center for secular Israel” and describing it as a “cosmopolitan city” known for its diverse cultures and foreign residents, vibrant party scene, and excellent food. It is also seen as the economic and business center of Israel.

For Ajami, Participant 1 has visited the area a few times but not often. He described it as a “not-so-good area of Tel Aviv” and noted that many Arabic and Black people live there. Participant 2 also expressed limited familiarity with Ajami, describing it as a region in the south-

center of Jaffa where Palestinians from ‘48/Israeli-Arabs have settled, resulting in a sizable Arab population. He also noted the presence of a wealthy, predominantly Jewish population attracted by the area's proximity to the sea. Ajami is characterized by a mix of new and older buildings, reflecting a blend of Tel Aviv's culture and culinary offerings. He believes Ajami reflects a combination of the Tel Aviv area, as it resembles the culture and food experience.

Both participants mentioned that they frequent King George Street regularly. Participant 1 cited its proximity to their home as the primary reason, while Participant 2 mentioned teaching at a school located on the street and having many friends and family living in the area as factors. Participant 1 mentioned that King George Street is renowned for its lively nightlife, featuring bars and concerts, making it a popular destination. They visit this street frequently due to its popularity, the various amenities it offers, and its proximity to Dizengoff Center (a large and popular shopping destination in the center of Tel Aviv). Participant 2 described King George Street as the main commercial street that connects Sarona Market, Rabin Square, and Dizengoff Center. These locations are the main social and commercial hubs of the city. He noted that the heavy presence of Hebrew and less Arabic was due to its being “a central street in the Jewish Tel Aviv.” However, he did point out that every street sign has the three languages.

In contrast, Participants 1 and 2 were not as familiar with Yefet Street. Participant 1 referenced the street as beginning with a clock tower and extending southward but had yet to explore its entire length. He described the street as a “cute” area with “stone walls” and often visited to walk around and eat with friends. He noted that many stores there were “tourist traps” and mentioned the presence of smoke and liquor stores. Participant 2 mentioned that he rarely visited Ajami, estimating he had been there only a few times in the past few years. He noted that Ajami was divided into different sections based on its north-south orientation and highlighted its historical significance as the first street constructed outside the walls of the old city of Jaffa. According to him, the area’s “population is more Arabic, and there you probably see more like

shops and Mini markets, restaurants… that would have Arabic signs. They would have Arabic owners and the potential to see more Arabic at the more south area." Despite this, he emphasized that while "you would see more Arabic," there is "just as much Hebrew" present in the area as in the city of Tel Aviv, mainly due to commercial efforts to attract customers. For example, he referenced a famous restaurant in North Jaffa named *Haj Kahil,* which has an Arabic name but is spelled on its sign using Hebrew letters.

Participant 2 elaborated on his language experience. He has a basic knowledge of Arabic, having learned the formal version of the language in high school using formal grammar charts. However, he noted that the Arabic studied in school differs from the Arabic used daily by Palestinians in Israel. Regarding English, he is fluent. He began studying English in 4th grade, although Israeli children now start learning Hebrew much earlier. However, his primary method of learning English was through real-life immersion, such as music, TV, the internet, and culture. He recalled how his sisters would listen to George Michael in the late eighties or early nineties, and through these songs, he could understand the meaning. Overall, he emphasized that immersion in the language was much more effective for acquiring English than studying it in school.

The participants were then asked about their perceptions of signage in Tel Aviv. Both participants believed that formal municipal street signs in Tel Aviv, and by extension throughout Israel, display all three languages—Hebrew at the top, Arabic in the middle, and English at the bottom. Participant 1 further noted the presence of blue road signs in his neighborhood, written in Hebrew and English. He also mentioned that parking signs are usually only in Hebrew, whereas parking lots have signs in Hebrew and English, sometimes including Arabic. Participant 2 indicated that businesses typically display signage in Hebrew and English, with only a few including Arabic. Overall, he observed that the majority of signage in Tel Aviv is in Hebrew and English.

Regarding signage on religious buildings, both participants indicated that English is more likely to be present, typically appearing under Hebrew, in Conservative or Reform synagogues compared to Orthodox ones. Participant 2 suggested that this difference may stem from the former's desire to cater to a more international audience. Participant 1 expressed a lack of experience with mosques and churches, while Participant 2 suggested that churches and mosques are primarily found in the Jaffa area rather than in Tel Aviv. Although uncertain about the signage, Participant 2 speculated that English would likely be present on church signage. Furthermore, they believed that signage for each denomination (e.g., Greek or Russian churches) would feature the respective languages.

Both participants made observations regarding unofficial and temporary signage in their area. Participant 1 noted that bus stop advertisements primarily use Hebrew, occasionally incorporating a slogan or two in English for well-known brands. They also observed that large chain stores and independent businesses typically prominently display an English title sign, sometimes accompanied by Hebrew underneath. For example, stores popular in Israel and Europe, such as Pull&Bear and Zara, exclusively use English signage. Interestingly, Participant 1 also noted that “even like big Israeli brands like that prioritize like English on their signs.” He cited the example of the Israeli brand Aroma, which typically displays a large English sign with a potential Hebrew translation below. Additionally, Participant 1 noted that temporary signs, including stickers, graffiti, and posters, are predominantly in English, with some also in Hebrew. Building on this, Participant 2 believes that graffiti in metropolitan Tel Aviv is more commonly found in English and Hebrew, with less in Arabic. Participant 2 also mentioned that over the past 20 years, he believes Tel Aviv has undergone more economic changes than cultural ones.

Participant 1 reported significant changes in signage since the October 7th attack. Official posters and information related to the war were predominantly in Hebrew. In contrast, unofficial slogans and hashtags popularized online about the war were in both Hebrew and English. For

example, the phrase “Together we will win” appears in both languages, while “Bring the Hostages home now” is solely in English. He noted no “Free Palestine” posters or stickers in the Tel Aviv area. Participant 1 has not visited the Jaffa area or Ajami since the war began but suspects similar signage patterns there. Additionally, near his home, he mentioned graffiti in Hebrew depicting Bebe (referring to Benjamin Netanyahu, the current Israeli Prime Minister) with the translated message “it's all your fault/you're to blame.” The participants’ statements about political messaging sharply contrast with the findings from Table 9, which indicates that only 1 out of 16 unofficial local language items in Ajami had political context, as well as the GSV data, as shown in Tables 3 and 6 in Appendix E. Together, these tables suggest very little to no political messaging in the local language in either locality.

Participant 1 suggested that the majority of Israeli Arabs in the Ajami/Jaffa area support Israel, as indicated by the absence of riots or signage expressing dissent. However, he remains uncertain about the genuineness of this support, considering the potential legal consequences, as actively supporting Hamas, considered a terrorist organization by the government, can lead to arrest. Although Participant 2 did not specifically mention languages, he noted that yellow ribbons and large signs displaying the faces of hostages and the number remaining in Gaza were present. He noted that since October 7th, there has been a greater divide between Israeli Jews and Israeli Arabs. He expressed hope for greater unity in the future, emphasizing that harmonious coexistence between the two groups was essential for a stable and functional Israeli society.

In the second section of the survey, participants were asked to share their views on various aspects of signage in their neighborhood, drawing from their observations and experiences. Each participant was shown nine storefronts from either King George Street or Yefet Street and was asked to identify the street to which they believed each storefront belonged. Both participants accurately guessed the location of each storefront. While the area’s physical

characteristics undoubtedly influenced their responses, this analysis will primarily concentrate on their observations regarding LL features.

In the first storefront (Figure 1), Participant 1 identified it as being in the Ajami area due to the handmade, worn-down appearance of the blue sign at the bottom. They noted that signs in the metropolitan area of Tel Aviv typically do not exhibit these characteristics. Participant 2 recognized the Arabic surname "Waseem" on the sign.

Figure 1

73 Yefet St.

For the second storefront (Figure 2 in Appendix C), Participant 2 identified it as metropolitan Tel Aviv due to the prevalence of Hebrew and graffiti. He speculated that English might be used to cater to tourists dining at the restaurant and getting their shoes repaired.

Figure 2

74 King George St.

For the third storefront in Tel Aviv (Figure 3 in Appendix C), Participant 1 highlighted the use of English at the top, with Hebrew in smaller print at the bottom. He noted that despite the bedding and home store primarily targeting locals, the signage is in English because

"American culture is so strong." Participant 2 indicated that English signage could be present due to the large English-speaking population. He also noted an economic incentive: "there's also economic reason for naming places in English names. So there would be more like international like even for Israeli eyes, that would be more appealing."

Figure 3

75 King George St.

For the fourth storefront in Ajami (Figure 4 in Appendix C), Participant 2 observed that signs were exclusively in Hebrew and English, speculating that there might be more Arabic signage further south. He found nothing remarkable about the Coca-Cola signs, noting their ubiquitous presence in both neighborhoods. However, Participant 1 highlighted that including Coca-Cola in signage could be intended to entice people to purchase products, a strategy that can appeal to locals and tourists.

Figure 4

89 Yefet St.

Participants did not provide extensive comments on the LL items in the fifth storefront in Tel Aviv (Figure 5 in Appendix C), except for Participant 1, who noted that the graffiti is in Hebrew and English.

Figure 5

81 King George St.

In the sixth storefront in Ajami (Figure 6 in Appendix C), the restaurant prominently displays its name in English, with smaller transcriptions in Hebrew at the top and Arabic below it. Participant 1 suggested that including English makes the restaurant more approachable and not "scary" for tourists. Participant 2 found the order and font of the Hebrew and Arabic scripts unimportant but emphasized the significance of the English signage due to its size and repetition throughout the sign.

Figure 6

88 Yefet St.

In the seventh storefront in Ajami (Figure 7 in Appendix C), Participant 1 observed a blue road sign featuring the three languages, contrasting this with his neighborhood where white signs are trilingual and blue signs are bilingual in Hebrew and English. He also noted Arabic graffiti and graffiti on a trash can, which he believed would not be present in Tel Aviv.

Participant 2 noticed a tarp and a garage sign in monolingual Hebrew. When asked about a monolingual Hebrew street sign, he was surprised, admitting he had not noticed it. He explained that as a Hebrew speaker in a society that prioritizes Hebrew, he does not often notice monolingual Hebrew signs but understands that Arabs likely notice this due to their language not being prioritized.

Figure 7

74 Yefet St.

The eighth storefront (Figure 8 in Appendix C) is a flower shop located in Tel Aviv. Participant 1 noted that the use of English and French in the signage makes the store appear "more attractive" and "sophisticated." Participant 2 noticed the small Hebrew sign and mentioned that he thought there was a rule requiring at least one Hebrew sign to be displayed (although no such rule was found for Tel Aviv; however, the municipality of Jerusalem mandates all stores in the city to have signs in Hebrew).

Figure 8

95 King George St.

The ninth picture in Tel Aviv (Figure 9 in Appendix C) features a wall of graffiti and a storefront sign. Participant 1 noted that most of the graffiti is in Hebrew, with some in English. Although the sign was not captured in the picture, Participant 2 recognized the awning as a well-known toy store. The store is named *Toysim*, a combination of the English word "toy" with the Hebrew plural ending "-im."

Figure 9

76 King George St.

Chapter 5: Discussion

This study had three main objectives. First, this study aimed to revisit Ben-Rafael's (2006) findings to determine if Hebrew continues to hold a dominant position across all LL sites under investigation or whether the presence of a significant Arabic-speaking minority challenges the overall predominance of Hebrew on signs. Additionally, this project explored the influence of English, a non-local language, in these localities. Second, following Malinowski's (2015) triadic approach to LL analysis, two of the six locations examined in Ben-Rafael et al. (2006), Tel Aviv (an Israeli-Jewish location) and Ajami (a Palestinian-Israeli locality), were analyzed for their conceived space, perceived space, and lived space. Third, in conjunction with the findings of Ben-Rafael et al. (2006), this study provides a longitudinal view of the LL in Tel Aviv, shedding light on the evolving socio-political dynamics within Israel today. This section is divided into four parts: addressing each RQ, comparing findings with Ben-Rafael et al. (2006)'s results, the VLL, and future directions.

General Conclusions

RQ1: Does Hebrew, which is the language of the larger population group in Israel, play the predominant role in all LL sites investigated?

The results from the conceived space, perceived space, and lived space analyses collectively reinforce Hebrew's dominant presence in both localities. In both areas, over half of all categorized signs were exclusively in Hebrew, and Hebrew consistently appeared on all official signs. Even when Hebrew was used alongside another language, it was the preferred code regardless of the sign's type or location. Furthermore, the majority of Hebrew-only signage in Tel Aviv and Ajami was printed on durable materials, such as metal or glass. These findings align with Israel's language policies and the experiences of participants. All participants noted that Hebrew plays a predominant role in their daily public activities. Government actions, both

locally and nationally, have collectively established Hebrew as the privileged language within the state. The 1995-96 language education policy and the 2018 Jewish Nation-State Law further solidified Hebrew's dominance, making it the primary language of instruction and Israel's primary official language, respectively. With the Supreme Court's mandate for the inclusion of Arabic on national road signs in mixed cities, the code preference for trilingual road signs has been ordered as Hebrew-Arabic-English. Figures 11 and 12 in Appendix D show examples of current trilingual street signs captured through Google Street View on both King George Street and Yefet Street. However, this trilingual policy was not consistently observed in all signs along the road, as some signs, such as those related to parking regulations and pedestrian safety, continued to be in monolingual Hebrew. Examples of such signs are depicted in Figures 13 and 14 (coded in the dataset as 71-KG-D and 72-Y-F) in Appendix D.

RQ2: In sites where members of the Arabic minority are numerous, does the Arabic signage challenge the overall predominance of Hebrew?

The study demonstrates that, despite being in the area of a substantial Arabic-speaking population, Hebrew maintained its dominance over Arabic. In Ajami, Hebrew was the predominant language in all monolingual and multilingual signage, both in terms of quantity and code preference, as well as material quality. Arabic was present in only a quarter of unofficial signs, predominantly on temporary materials like stickers and graffiti. Pennycook (2009) suggests that stickers and graffiti are often considered transgressive demonstrations representing underrepresented voices within a community. On official signs, Arabic never took precedence, always appearing beside or below Hebrew or English.

Arabic signage was predominantly found in cultural and religious contexts, in contrast to Hebrew and English, which were more prevalent in commercial and advertising contexts. This observation is consistent with existing literature indicating that Arabic is predominantly used in

familial and community settings, while Hebrew and English are considered the languages of business in Israel. Participant 2's comments also support this observation, indicating that despite the higher prevalence of Arabic signage (in comparison to Tel Aviv), there is a comparable presence of Hebrew signs aimed at attracting customers.

Language policy also enables Hebrew to hold a higher standing over Arabic. In educational settings, Arabic is offered later in the curriculum, and is taught in Modern Standard Arabic rather than the spoken vernacular. Participant 2 confirmed that he learned the formal version of Arabic in school; however, he was not as immersed into the language as he was when learning English, which is a contributing factor to why he is not as proficient in Arabic. In 2002, the Supreme Court Order mandated the inclusion of Arabic on national road signs in mixed cities, including Tel Aviv, due to its status of Arabic as an official language. The prevalence of this ordering is underscored by the perceived space, with 77.8% of trilingual official signs in Tel Aviv and 80% of official signs in Ajami following this pattern. It is worth noting that while official trilingual street signs adhere to these policies, unofficial signs in both localities present a different narrative.

Regarding the second half of the interview, it is intriguing that both participants could accurately identify each storefront’s location even though they claimed not to frequent the Ajami area. Despite the two streets’ being in the same city only 2.5 miles apart and both having a strong presence of Hebrew, which would indicate commonalities, the participants were 100% accurate in distinguishing the neighborhoods. This suggests that the meaning of a place is perhaps determined by more than just the visible language; other factors, such as architecture, urban density and design, contribute to a place’s identity and recognizable qualities.

Most recently, the Jewish Nation-State Law of 2018 designated Hebrew as Israel’s only official language, relegating Arabic to a “special status.” This law clearly demonstrates Hebrew's dominance in the public space, with Arabic holding a subservient role to it. This causes concern

for the status of Arabic in Israel's LL, as the Supreme Court's ruling was based on Arabic having an official language status equal to Hebrew. The future standing of this ruling is now uncertain. The Arabic language is fundamental to the identity, heritage, and culture of the Arab minority in Israel. Recognizing Arabic as an official language symbolizes the acknowledgment of the rights and equal status of Arabs in the state of Israel. However, now that this recognition has been taken away, the status of Arabic is at risk of being marginalized. At the same time, when compared with Ben-Rafael, et al.'s (2006) findings from 18 years ago, the use of Arabic in the visible landscape has increased.

RQ3: What is the role of a nonlocal language like English in the LL?

Despite lacking official status, English significantly influences contemporary Israel due to its global importance. It is viewed as a vital communication tool with the world and serves as a status marker and a symbol of prestige. Despite the removal of English as an official language upon Israel's independence, its presence in the public arena has endured. Language policies support this idea by obligating children to learn it early on in their schooling, as well as including it with official road sign policies.

The LL items from this study support this idea that English holds prestige. Firstly, English-only LL items were predominantly found in commercial and advertising contexts. Additionally, the textual function of English in unofficial multilingual signs was exclusively related to international brand names and often served as storefront titles. This reflects the apparent demand for English brands. This demonstrates English's symbolic function. In contrast, Hebrew and Arabic served more of an informative function, providing practical information on the signs, such as hours of operation. This finding is consistent with the interview data, where Participant 2 highlighted that large chain stores and independent businesses usually prominently displayed an English brand name on its storefront sign. This is exemplified by Figures 15 and 16

(coded in the dataset as 85-KG-H and 94-Y-D). Figure 15 displays English as the name of the establishment with further information listed in Hebrew below, while Figure 16 exhibits an international brand on the sign and then lists the shop name and additional information in Hebrew.

Figure 15

English as a Title - 85 King George St.

Figure 16

International Brand in English - 94 Yefet St.

Moreover, tourism likely plays a significant role in the prevalence of English on signage. While Ben-Rafael et al. (2006) suggested that English on signs primarily served as a means of communication between tourists and locals, interviews in this study revealed that perception continues to contribute to its prevalence today. Participant 1 highlighted that incorporating internationally recognized brands like Coca-Cola, spelled out in English on signage, could be a strategy aimed at enticing people to purchase products. Additionally, he suggested that including English in signage makes a storefront more inviting and less intimidating for tourists.

The increased presence of English raises intriguing questions. Is this shift related to the relegated status of Arabic? Are inhabitants consciously introducing another language into the

landscape to compete with Hebrew, or is it simply a result of English's growing prominence due to new technologies and globalization?

Expanding upon Ben-Rafael et al. (2006)

Compared with the findings of Ben-Rafael et al. (2006), this study's observations regarding Hebrew indicate that its presence has remained relatively consistent. Both studies indicate that in Tel Aviv, all LL items include Hebrew, with more than half of them being monolingual in Hebrew. Notably, this study identified a slightly higher prevalence of Hebrew-only signage than Ben-Rafael et al.'s (2006) study. Furthermore, multilingual signs consistently prioritized Hebrew at the top of signage. Overall, these analyses collectively underscore Hebrew's predominant and enduring presence in the LL of these localities.

Interestingly, compared to Ben-Rafael et al.'s (2006) data, this study reveals an increased presence of Arabic in Ajami. In Ben-Rafael et al.'s (2006) study, only 26% of the LL items in Ajami contained any Arabic, whereas this study found 33%. Furthermore, Ben-Rafael et al. (2006) did not report any Arabic-only or Arabic-English signs, whereas this study found that 12.7% of all signs in Ajami were either Arabic-only or Arabic-English. In unofficial multilingual signs in Ajami, Hebrew remains the most preferred language at 45.8%; however, the combined presence of English and Arabic constitutes a significant proportion at 54.1%. This raises questions about whether this increase reflects a potential challenge by Ajami's Arabic-speaking inhabitants regarding the 2018 Law. Overall, Hebrew still predominates, but even with the 2018 policy, the prevalence of Arabic in Ajami has grown within the past 18 years.

Comparing the current study with Ben-Rafael et al.'s (2006) findings reveals that English now competes with Hebrew and Arabic in Ajami's LL. Firstly, Ben-Rafael et al.'s (2006) study found no Hebrew-English signs in Ajami, whereas 10.3% of the signs in the current study were Hebrew-English. Regarding the code preference between unofficial Hebrew-English signs in the

two localities in this study, there was an almost equal number of Hebrew-English signs, with either Hebrew or English at the top in the preferred position. Additionally, it is noteworthy that in both localities' unofficial contexts, the current study identified English-only signs, while Ben-Rafael et al. seemingly found none. This study aligns with the first part of Ben-Rafael et al.'s (2006) findings, which state that the Israeli-Jewish LL tends to neglect Arabic and emphasize English. However, this study yielded different results regarding Ben-Rafael et al.'s claim that the Israeli-Palestinian LL neglects English and emphasizes Arabic. Specifically, 31.7% (59/186) of the signs in Ajami include English, while 30.6% include Arabic. This suggests that English has a slightly higher prevalence in Ajami than Arabic.

Ben-Rafael et al. (2006) noted the surprising frequency of Hebrew in Israeli-Palestinian areas, as "one could have expected some resistance to the majority language as a result of ongoing Jewish-Palestinian tensions within and outside of Israel." (p. 22). While Hebrew's predominance in the Israeli-Palestinian area of Ajami appears to persist, the discernible increase in the use of Arabic and English in Ajami, as well as English in Tel Aviv, indicates a shift in the LL over the past 18 years. At the same time, Arabic, while experiencing a slight increase in its presence in the LL, is primarily seen on temporary signage and thus does not have the status of Hebrew. The growing presence of English, particularly in commercial and advertising contexts, may be attributed to globalization and perhaps its identity as a neutral sociopolitical language in Israel. This suggests a potential upward trajectory in the prevalence of English in the LL of Tel Aviv. Conducting another LL analysis in these localities when it is safe to do so would offer valuable insights into how the linguistic dynamics have evolved amidst the ongoing conflict.

This study examined the varying prominence and functions of Hebrew, Arabic, and English in distinct ethno-linguistic neighborhoods within a single city. Building upon Ben-Rafael et al.'s (2006) research, it established a longitudinal perspective of the LL in Tel Aviv. While

Ben-Rafael et al. (2006) focused solely on perceived space, this study expanded the scope to include conceived and lived spaces, enhancing the findings uncovered in the LL.

Virtual Linguistic Landscape (VLL)

Although not an official research question, this study also aimed to investigate the validity of conducting Virtual Linguistic Landscape (VLL) studies as a method of examining LLs. The VLL played a crucial role in this project, as conducting the research in person was not feasible. Moreover, the ability to access the landscape anytime and anywhere proved to be highly beneficial.

Despite Malinowski's (2010) concerns regarding the potential misinterpretation of the VLL when taken out of its original context, this study found no significant issues in this regard. Before the study began, the localities were initially classified as either Israeli-Jewish or Israeli-Palestinian. Utilizing the Street View function enabled a comprehensive survey of the entire street, providing context for each screenshot. Additionally, integrating the perspectives of conceived and lived space provided further contextualization for the examined images.

However, the use of the VLL revealed several notable drawbacks. When initially selecting two out of the six localities from Ben-Rafael et al.'s (2006) study to investigate, it became apparent that some locations had not been updated in over a decade. For individuals relying solely on the VLL for information about a place, Google Street View (GSV) essentially controls the narrative of that space. The question arises: who controls this aspect, Google, the national government, or local municipalities? This issue is particularly relevant given the significant changes in the geopolitical landscape since the last GSV update. To present the most comprehensive view possible of the LL, VLL studies need to include not just the perceived space from GSV but also the lived and conceived space.

Another limitation was the intentional blurring by GSV. Figures 16 and 17 (coded in the dataset as 56-KG-C and 112-Y-C) depict examples from Tel Aviv and Ajami. The rationale for the blurring of these texts remains unclear; however, it has the potential to impact how the LL is perceived by outsiders.

Figure 16

Blurring on 56 King George St.

Figure 17

Blurring on 112 Yefet St.

Based on these observations, utilizing GSV for investigating the VLL is valid under specific circumstances (e.g., political unrest, disease) that prevent researchers from traveling to the research area. However, to achieve the best results, conducting LL research on-site stands as the optimal approach.

Future Directions

In order to enhance the comprehensiveness and generalizability of this type of LL research, there are several aspects that could be addressed. First, analyzing commercial thoroughfares offers valuable insights into how an area aims to present itself to the world;

juxtaposing this data with observations from residential areas could offer a more comprehensive understanding of each language's role within the broader community.

Building on this point, future studies should adjust the data categorization scheme to the specific areas under examination. For instance, distinct classifications may be needed for commercial thoroughfares versus residential areas, and differentiations may also be necessary for various regions and communities worldwide.

Due to time and resource limitations, this study focused on only one street per locality in a specific time period. However, the findings could have been more generalizable had it examined multiple streets in each locality. Additionally, while the study did not explore the diachronic development of King George St. and Yefet St. in GSV, such an analysis would have offered valuable insights regarding the evolution of LL on these specific streets over the years.

One limitation encountered in this study was the illegibility of some of the smaller posters and stickers. The data showed that Arabic appeared predominantly on these smaller items; the inability to discern the information on these signs might have led to an undercount of Arabic. If the images were clearer, more valuable insights could have been attained. To address this limitation, conducting future research in person would be beneficial.

The insights gained from both the survey and interview participants proved invaluable in supporting the data gathered from Tel Aviv and Ajami. However, the majority of participants resided in the Tel Aviv metropolitan area, which is predominantly Israeli-Jewish. A more diverse sample with an equal representation from the Ajami area would have enhanced the study. Unfortunately, due to the virtual nature of this study, achieving such diversity was not possible. Nonetheless, for future LL studies, diversifying the participant sample would be beneficial.

In addition, when conducting interviews, it would have been interesting to follow up on the comments regarding the support for Israel in both localities following the attacks on October 7th during the interviews. For future studies, investigating the influence of the current situation

on LL and whether it has led to any changes in the prevalence of each language or political messaging would be particularly intriguing. Moreover, it would have been valuable to ask about the participants' views on Aravrit, a design style and script that combines Arabic and Hebrew to promote coexistence between Arabic and Hebrew speakers, and whether they believe it should be incorporated into signage. Overall, this study serves as a reminder of how quickly the LL of a place can change, underscoring the importance of continued analysis to understand how policies and conflicts can impact communities.

This study has contributed significantly to LL studies in three key ways. It stands as one of the first works to apply VLL methodologies within this specific context. Revisiting and replicating an earlier study have enabled the tracing of developments in the societal multilingualism of Tel Aviv, providing valuable insights into the evolving linguistic dynamics of the area. Finally, by employing the triadic approach, this study offers a more nuanced and comprehensive description of the LL in Tel Aviv than previously achieved.

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Appendix A: Tables

Appendix B: Survey Questions

Category	Questions
Demographic Information	1. Please indicate your age: □ 18-24 years old □ 25-34 years old □ 35-44 years old □ 45-54 years old □ 54-74 years old □ 74 years old and beyond 2. What is your gender? □ Male □ Female □ Nonbinary/gender-non-conforming 3. Choose one or more that you consider yourself to be: □ Caucasian □ Arab □ Ethiopian □ Mizrahi or Ashkenazi □ Russian □ Do not wish to disclose 4. What is the highest degree or level of school you have completed? □ Less than a high school diploma □ High school degree or equivalent (e.g. GED) □ Some college, no degree □ Associate degree (e.g. AA, AS) □ Bachelor's degree (e.g. BA, BS) □ Master's degree (e.g. MA, MS, MEd) □ Professional degree (e.g. MD, DDS, DVM) □ Doctorate (e.g. PhD, EdD)
Geographical/Language Information	1. Where do you currently live in Israel? 2. Have you lived anywhere else in Israel? If so, where? 3. Have you lived anywhere outside of Israel? 4. What languages do you speak, and to what degree? (Scale: Basic, conversational, proficient, fluent) 5. What is the main commercial street in your neighborhood? 6. On that street, what are the languages seen/spoken/heard there? Please rank them in order of prevalence from most to least common. 7. How many hours, on average, are you typically away from your home each day? □ 0-5 hours □ 5-10 hours □ 10-15 hours □ 15-20 hours 8. Please indicate typical streets/routes that you take on a regular basis. Feel free to be as specific as you'd like (For example, please list specific neighborhoods, street names, landmarks)

Language in Daily Life Never = 0 Rarely = 1 Occasionally = 2 Frequently = 3 Always = 4	1. How often do you **see** the following languages when you go about your daily business in public? □ Hebrew □ Arabic □ English □ Other 2. How often do you **hear** the following languages when you go about your daily business in public? □ Hebrew □ Arabic □ English □ Other 3. How often do you **speak** the following languages when you go about your daily business in public? □ Hebrew □ Arabic □ English □ Other 4. How much English do you **see** per day? 5. How much Arabic do you **see** per day? 6. How much Hebrew do you **see** per day? 7. How much of another language do you **see** per day? 8. How much English do you **hear** per day? 9. How much Arabic do you **hear** per day? 10. How much Hebrew do you **hear** per day? 11. How much of another language do you **hear** per day? 12. How much English do you **speak** per day? 13. How much Arabic do you **speak** per day? 14. How much Hebrew do you **speak** per day? 15. How much of another language do you **speak** per day?
Perceptions	1. Where do you feel the boundaries of your neighborhood are, and how are those marked? 2. In your neighborhood, how many signs are bilingual? (Bilingual = 2 languages) □ None □ Few □ Half □ Most □ All 3. In your neighborhood, how many signs are multilingual? (Multilingual = 3 or more languages) □ None □ Few □ Half □ Most □ All 4. Throughout the time you've lived in your community, what changes have you noticed regarding language use around you? 5. Which language on public signs captures your attention the most?

	□ Hebrew □ Arabic □ English □ Other 6. Which language on public signs captures your attention the least? □ Hebrew □ Arabic □ English □ Other

Appendix C: Interview Questions

The interview process was not overly scripted. Instead, it was designed to be flexible and tailored to each participant. Those who expressed interest in elaborating on their choices in the survey had the opportunity to do so. The interview consisted of two parts. In Part One, the questions aimed to explore participants' responses in more detail, discussing specific examples from the survey and focusing on their perceptions of each language, particularly focusing on their perceptions of each language. Part Two involved presenting participants with a selection of signs from both localities. Participants were encouraged to share their thoughts on the signs' origins and the intended audience behind them.

Part One:

1. Which exact neighborhood do you live in in Tel Aviv?

1.1 When you think of the Tel-Aviv (the metropolitan area), what thoughts come to mind about it?

2. Do you ever go to the Ajami neighborhood? Why or why not?

2.1 When you think of the neighborhood Ajami, what thoughts come to mind about it?

3. How often do you leave your particular neighborhood go to other neighborhoods?
4. Are you familiar with King George and Yefet Street?

4.1 If yes (for one or the other): Do you believe that the characterization of these areas as predominantly Hebrew or Arabic-speaking is accurate?

5. I see you indicated that you see Hebrew, Arabic, and English very often in the visual landscape of your neighborhood. Could you please elaborate on the types of signs or stores where each language is most commonly found?
6. When you see religious buildings in your area, is the signage usually bilingual or trilingual?
7. Do you notice unofficial signage like graffiti? If yes, which language(s) is it typically written in?

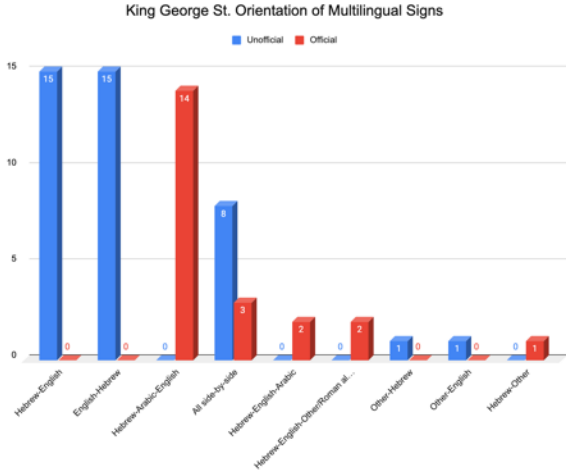
7.1 Do you see other temporary signage in your area? (e.g. stickers, posters, etc.)

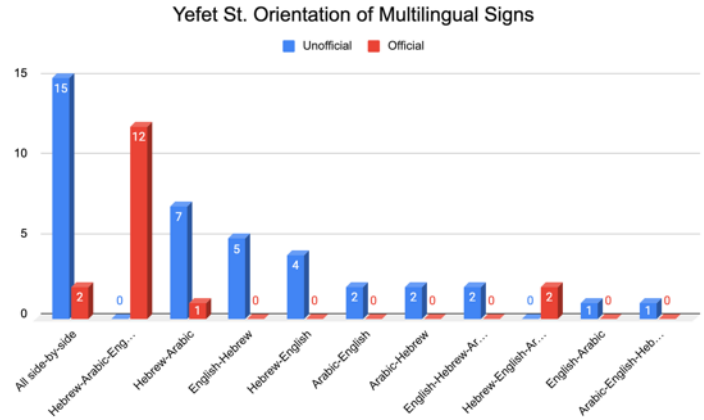
7.2 Does the visual landscape change often, or does it generally stay the same?

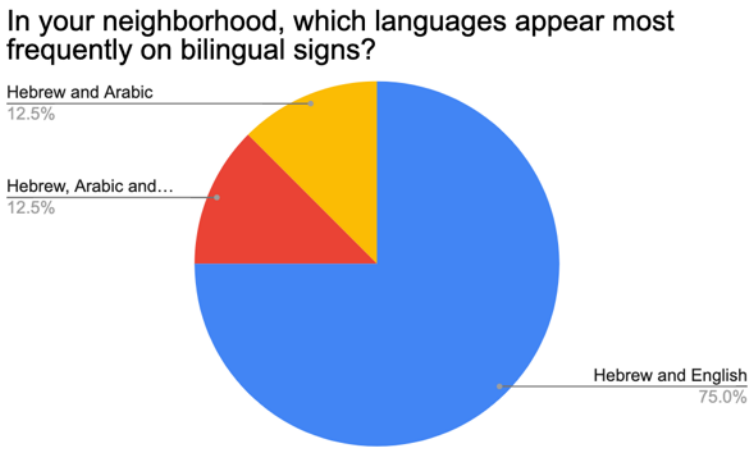
8. How has signage or other things changed since October 7th?

Part Two: In addition to elaborating on survey questions, participants were shown nine selected signs (Figures 1-9) from Tel Aviv and Ajami and were asked to provide insights into their origins and intended audience.

Appendix D: Figures







Appendix E: Google Street View Data

Table 1. King George Street (Tel Aviv) Language-related LL data.

		Unofficial	**Official**
Monolingual	Hebrew	77	19
	Arabic	0	0
	English	49	0
	Other	7	0
Bilingual	Hebrew-Arabic	0	0
	Hebrew-English	36	3
	Arabic-Hebrew	0	0
	Arabic-English	0	0
	Hebrew and Roman alphabet transliteration	2	1
	Other-English	1	0
	Hebrew-Other	1	0
Trilingual	Hebrew-Arabic-English	0	16
	Hebrew-Arabic-Other/Roman alphabet transliteration	0	2
Hebrew Text Size	Small	52	31
	Medium	43	9
	Large	24	0
Arabic Text Size	Small	0	11
	Medium	0	7
	Large	0	0
English Text Size	Small	24	14
	Medium	45	5

	Large	16	0
Other Text Size	Small	6	1
	Medium	2	2
	Large	2	0
Hebrew Text Font	Colored	36	3
	Bold	27	5
	Italics/script	0	0
	Underline	0	0
	Basic font	76	35
	All caps	2	0
	No caps	0	0
Arabic Text Font	Colored	1	0
	Bold	0	0
	Italics/script	1	0
	Underline	0	0
	Basic font	0	18
	All caps	0	0
	No caps	0	0
English Text Font	Colored	28	0
	Bold	14	0
	Italics/script	1	0
	Underline	0	0
	Basic font	46	20
	All caps	19	5
	No caps	7	0
Other Text Font	Colored	2	0
	Bold	1	0
	Italics/script	1	0
	Underline	0	0
	Basic font	8	2

	All caps	3	2
	No caps	0	0
Orientation of Multilingual Signs (High to Low)	All side-by-side	8	3
	Hebrew-English	15	0
	Hebrew-Arabic	0	0
	English-Arabic	0	0
	English-Hebrew	15	0
	Arabic-English	0	0
	Arabic-Hebrew	0	0
	Other-Hebrew	1	0
	Other-English	1	0
	Hebrew-Other	0	1
	Hebrew-Arabic-English	0	14
	Hebrew-English-Arabic	0	2
	Hebrew-English-Other/Roman alphabet transcription	0	2
	English-Hebrew-Arabic	0	0
	Arabic-English-Hebrew	0	0
Hebrew text function (multilingual sign)	Title/Name of storefront	22	-
	Brand name	0	-
	Information (hours, job openings, etc.)	17	-
Arabic text function (multilingual sign)	Title/Name of storefront	0	-
	Brand name	0	-
	Information (hours, job openings, etc.)	0	-
English text function (multilingual sign)	Title/Name of storefront	19	-
	Brand name	6	-
	Information (hours, job openings, etc.)	12	-

Other text function (multilingual sign)	Title/Name of storefront	3	-
	Brand name	0	-
	Information (hours, job openings, etc.)	2	-
Multilingual signs: Do the languages refer to the same word or mean different things?	Yes	18	-
	No	20	-

Table 2. King George Street (Tel Aviv) Social-space related LL data.

		Unofficial	**Official**
Sign Size	Small	33	58
	Medium	6	67
	Large	0	47
Height	High	66	33
	Medium	94	5
	Low	10	2
Material	Metal/Aluminum	38	39
	Plastic	24	1
	Fabric (e.g. coated polyesters)	28	0
	Tile	4	0
	Glass	0	0
	Wood	1	0
	Paint	29	0
	Paper	36	0
	Paper laminated in glass	13	0
Textual Genre	Leaflet	0	0

	Moveable sign	6	0
	Paper	13	0
	Poster	32	0
	Sign	82	40
	Graffiti	28	0
	Sticker	11	0
External Position	Bin	0	1
	Door	0	10
	Ground	0	0
	Light post	2	0
	Signpost	10	2
	Wall	19	84
	Projecting (e.g., Awning)	0	26
	Freestanding	10	8
	Window	0	41
Type of Writing	Printed	125	40
	Written	31	0
	Carved	0	0
	Chalked	0	0
	Constructed	16	0

Table 3. King George Street (Tel Aviv) Sociolinguistic-related LL data.

		Unofficial	**Official**
Context	Advertisement	102	0
	Culture/Religion	1	0
	Information	34	40
	Politics	1	0

	Service/Community	3	0
	Unsure	31	0
Material	Awareness/Warning	10	10
	Guide/Street signs	1	26
	Local	2	3
	National	14	0
	Development	4	1
	Initiative	1	0
	Commercial/Magazine	109	0
	Social Service	1	0
	Support	0	0
	N/A	32	0
Political Context	Activism	2	0
	Anti-racism	0	0
	Demand	0	0
	Refugee Rights	0	0
	Environment	0	0
	Naturalization	0	0
	Notice	0	0
	Political Figure	0	0
	Rent	0	0
	Unsure	14	0
	N/A	153	40
Neighborhood Context	Commerce	114	0
	Regulatory	8	9
	Culture	1	0
	Transportation Services	0	3

	Education	1	0
	Health	1	0
	Safety	0	2
	Job Offer	4	0
	Local	4	26
	Political	1	0
	Religious	0	0
	Social	2	0
	Decorative	6	0
	Unsure or N/A	30	0
Commercial function	Clothing	9	-
	Beauty/nail/hair salon	7	-
	Pharmacy/drug store	3	-
	Food	24	-
	House-ware	5	-
	Private Offices (and banks)	2	-
	Independent services (laundromat, tailor, etc.)	24	-
	Other (e.g., ads, graffiti, information)	97	-

Table 4. Yefet Street (Ajami) Language-related LL data.

		Unofficial	**Official**
Monoligual	Hebrew	81	12
	Arabic	16	0
	English	18	0
	Other	2	0
Bilingual	Hebrew-Arabic	12	1

	Hebrew-English	15	2
	Arabic-Hebrew	2	0
	Arabic-English	5	0
	Hebrew and Roman alphabet transliteration	1	0
	Other-English	0	0
	Hebrew-Other	0	0
Trilingual	Hebrew-Arabic-English	4	15
	Hebrew-Arabic-Other/Roman alphabet transliteration	0	0
Hebrew Text Size	Small	64	25
	Medium	23	5
	Large	28	0
Arabic Text Size	Small	26	12
	Medium	10	4
	Large	3	0
English Text Size	Small	22	13
	Medium	17	4
	Large	3	0
Other Text Size	Small	0	0
	Medium	1	0
	Large	2	0
Hebrew Text Font	Colored	37	0
	Bold	13	1
	Italics/script	6	0
	Underline	0	0
	Basic font	64	29
	All caps	0	0

	No caps	0	0
Arabic Text Font	Colored	6	0
	Bold	2	1
	Italics/script	1	0
	Underline	0	0
	Basic font	30	15
	All caps	0	0
	No caps	0	0
English Text Font	Colored	9	0
	Bold	4	1
	Italics/script	8	0
	Underline	0	0
	Basic font	16	16
	All caps	15	3
	No caps	0	0
Other Text Font	Colored	1	0
	Bold	2	0
	Italics/script	0	0
	Underline	0	0
	Basic font	0	0
	All caps	1	0
	No caps	0	0
Orientation of Multilingual Signs (High to Low)	All side-by-side	15	2
	Hebrew-English	4	0
	Hebrew-Arabic	7	1
	English-Arabic	1	0
	English-Hebrew	5	0
	Arabic-English	2	0
	Arabic-Hebrew	2	0
	Other-Hebrew	0	0

	Other-English	0	0
	Hebrew-Other	0	0
	Hebrew-Arabic-English	0	12
	Hebrew-English-Arabic	0	3
	Hebrew-English-Other/Roman alphabet transcription	0	0
	English-Hebrew-Arabic	2	0
	Arabic-English-Hebrew	1	0
Hebrew text function (multilingual sign)	Title/Name of storefront	22	-
	Brand name	0	-
	Information (hours, job openings, etc.)	19	-
Arabic text function (multilingual sign)	Title/Name of storefront	12	-
	Brand name	0	-
	Information (hours, job openings, etc.)	11	-
English text function (multilingual sign)	Title/Name of storefront	10	-
	Brand name	10	-
	Information (hours, job openings, etc.)	4	-
Other text function (multilingual sign)	Title/Name of storefront	1	-
	Brand name	0	-
	Information (hours, job openings, etc.)	0	-
Multilingual signs: Do the languages refer to the same word or mean different things?	Yes	21	-
	No	18	-

Table 5. Yefet Street (Ajami) Social-space related LL data.

		Unofficial	**Official**

Sign Size	Small	63	22
	Medium	61	6
	Large	32	2
Height	High	58	21
	Medium	80	7
	Low	16	2
Material	Metal/Aluminum	41	26
	Plastic	20	2
	Fabric (e.g. coated polyesters)	18	0
	Tile	3	0
	Glass	0	0
	Wood	0	0
	Paint	11	0
	Paper	59	1
	Paper laminated in glass	4	1
Textual Genre	Leaflet	0	0
	Moveable sign	10	0
	Paper	15	0
	Poster	44	1
	Sign	64	29
	Graffiti	10	0
	Sticker	13	0
External Position	Bin	4	0
	Door	10	2
	Ground	0	0
	Light post	0	2

	Signpost	1	2
	Wall	84	17
	Projecting (e.g., Awning)	18	0
	Freestanding	11	7
	Window	28	0
Type of Writing	Printed	127	30
	Written	13	0
	Carved	1	0
	Chalked	1	0
	Constructed	14	0

Table 6. Yefet Street (Ajami) Sociolinguistic-related LL data.

		Unofficial	**Official**
Context	Advertisement	84	0
	Culture/Religion	13	0
	Information	36	30
	Politics	4	0
	Service/Community	4	0
	Unsure	15	0
Material	Awareness/Warning	8	9
	Guide/Street signs	0	18
	Local	21	3
	National	9	0
	Development	1	0
	Initiative	6	0

	Commercial/Magazine	89	0
	Social Service	6	0
	Support	0	0
	N/A	16	0
Political Context	Activism	3	0
	Anti-racism	0	0
	Demand	0	0
	Refugee Rights	0	0
	Environment	1	0
	Naturalization	0	0
	Notice	0	0
	Political Figure	0	0
	Rent	2	0
	Unsure	16	0
	N/A	134	30
Neighborhood Context	Commerce	97	0
	Regulatory	4	4
	Culture	18	0
	Transportation Services	0	3
	Education	2	0
	Health	3	0
	Safety	5	5
	Job Offer	1	0
	Local	5	18
	Political	4	0
	Religious	4	0
	Social	2	0
	Decorative	0	0
	Unsure or N/A	13	0

Commercial function	Clothing	5	-
	Beauty/nail/hair salon	1	-
	Pharmacy/drug store	2	-
	Food	27	-
	House-ware	1	-
	Private Offices (and banks)	3	-
	Independent services (laundromat, tailor, etc.)	30	-
	Other (e.g. ads, graffiti, information)	86	-