The paper starts with signs that Cooper and I found in the Old City of Jerusalem. It describes how the term Linguistic Landscape was applied to the recollections of francophone high school students of the signs they had seen. It traces the many collections of photos employing digital cameras and cell-phones, and research that was derived from these collections, including published papers and books, a journal, and an annual workshop. The paper regrets the rarity of details of authorship (but reports who was responsible for the Jerusalem street signs), and the tendency to interpret signs without detailing authorship. Signs provide evidence of the state of literacy, but ignore the sociolinguistic make-up of the local community, missing that for earlier scholars “linguistic landscape” meant speech as well as writing. It regrets the paucity of efforts to provide a theory of public signage, arguing that this could be derived from the field of Semiotics.

**Keywords:** semiotics, public signage, authorship, sociolinguistic repertoire, theory

Robert Cooper and I hadn’t heard the term “linguistic landscape” or its French original “paysage linguistique” (Bourhis & Landry, 2002; Landry & Bourhis, 1997) when we wrote about the signs that we had found in the Old City of Jerusalem (B. Spolsky & Cooper, 1983, 1991), but our research interest had been sparked by some signs that we found walking through the narrow streets. The first was a carefully lettered sign outside a shop in the main market, with the text: “english, arabic & hebrew names in gold and silver”, and a tiny signature in Arabic script. The sign, though offering multilingualism to customers, was itself monolingual, suggesting that it was intended for people who knew English, presumably tourists, rather than for the Arabic- or Hebrew-speaking local residents. The language choice of the signwriter appeared to be determined by the expected literacy of potential customers.
The second was a puzzle set by two ceramic street signs opposite each other on a narrow lane around the corner from my apartment. Each was written in three languages; the top line was in Hebrew, the second in Arabic, and the third in English. Each was square, made up of nine tiles cemented together: there was a decorative frieze all around. Two features however differentiated them. The Hebrew and the modern clear Arabic was the same on both, but on one wall, the English read: “EL-MALAK RD” and on the opposite wall, it read “HA-MALAKH RD”. There was a second difference, not noticed at first by a literate reader concentrating on the words: on the El-Malak sign, a line of the frieze separated the Hebrew from the Arabic. Looking more closely, we realized that the Hebrew line was a later addition, while on the Ha-Malakh version, all tiles had been put up at once. This sign was intended to be trilingual: the first had originally been bilingual and was made trilingual later. EL-MALAK was a transliteration of the Arabic, while English HA-MALAKH was a transliteration of the Hebrew. The political history of the Old City offered a solution to this puzzle. The bilingual sign must have been prepared during the period between 1948 and 1967 during which the Old City was occupied by the Jordanians. When Israel took over after 1967, the same tile-maker added Hebrew to the bilingual signs and was also commissioned to prepare trilingual signs.

The challenge then was, what had been the practice before 1948, under the British Mandate? We later found a sign on the Jaffa Gate, with the three official languages of the Mandate, English on top, Arabic next, and Hebrew on the bottom. One other difference was that whereas the Arabic on the Jordanian and Israeli signs was in a modern easily readable script, that on the British sign was in the elegant traditional Qur‘anic script of Classical Arabic, bearing witness to the important literacy campaign adopted by the Jordanian government after the minimal Arabic education during the Mandate.

I was sensitive to public signs because of a study I had worked on some years earlier of the sociolinguistics of literacy (B. Spolsky, Englebrecht, & Ortiz, 1983). While I was at the University of New Mexico, I directed a project aimed at teaching Navajo children to read in their own language (B. Spolsky, 1974) and at the same time, I was studying Māori language regeneration (B. Spolsky, 1989b, 2003, 2009). It was natural to compare the two cases (B. Spolsky, 2001). One of the critical differences was the speed with which the Māori had accepted literacy in their own language shortly after the missionaries arrived in New Zealand about 1800, contrasted with the reluctance of the Navajo to adopt literacy in their own language. In the vernacular literacy study, we looked at five cases: Guarani in Paraguay, Spanish in Northern New Mexico, triliteracy in first century Palestine, biliteracy in Tonga, and the Navajo Nation. In Paraguay, while most people spoke Guarani, it only appeared in writing in the publication of popular songs
Engelbrecht & Ortiz, 1983). In New Mexico, there had been early attempts to establish Spanish literacy in church schools, but this ended when New Mexico was taken over by the United States. In first-century Palestine, there was oral and written trilingualism in Hebrew, Aramaic, and Greek (B. Spolsky, 1983). In Tonga, there had been a high level of vernacular literacy in the nineteenth century, and it was maintained as the language of the local newspaper; we also saw handwritten signs on stores in Tongan (B. Spolsky, Engelbrecht, & Ortiz, 1983). In contrast, the Navajo Nation carried on its oral business in the vernacular, but all written material was in English. We did find a Navajo sign on a supermarket and several on schools, but all were initiated by Anglos (B. Spolsky, 1975).

We were not the first to count the language of public signs. Two counts were made as part of a study of the spread of English (Fishman, Cooper, & Conrad, 1977). In 1974, there was a study of signs on Jaffa Road, the main shopping street of Jerusalem (Nadel & Fishman, 1977: 163), and the second was of Keren Kayemeth Street, a central neighborhood (Rosenbaum, Nadel, Cooper, & Fishman, 1977). Both compared signs in Hebrew and Latin letters. We made a second count of signs on Jaffa Road in 1993, reported in B. Spolsky & Shohamy (1999: 16), finding an increase in Hebrew signs. But none of these early studies used the term “linguistic landscape”. And in each case, the study of signs was part of a sociolinguistic description of the neighborhood, supplementing evidence of the spoken language.

As Kimball (2015) wisely remarks opening a paper in which he proposes a field of cognitive economics, “Names matter.” In our studies, we spoke about public signs, but it was Landry and Bourhis (1997) who first applied the term “linguistic landscape” (in French, paysage linguistique) to the public signs of a neighborhood. Earlier, the term had been used for all the language practices of a community, spoken and written. Voegelin (1933) is one the earliest I have found using it in this sense; Collocott (1941) used it to refer to the speech of a multilingual neighborhood; Kouritzin (1944) narrowed it to personal linguistic repertoire (“my linguistic landscape did not include Russian”); Weinreich (1953) uses it in the wider sense as did Ivić (1962) who believed that calculations of density of dialect isoglosses would be “one of the central characteristics of any linguistic landscape”.

The term “linguistic landscape” was employed by Landry and Bourhis to label a statistical factor formed by a number of items in questionnaires used with 2000 francophone students in 11th and 12th grades in fifty Canadian schools in several studies in the early 1990s. Participants were asked to rate their overall access to French media; the factor had its highest loading on recollections of observation of government signs (road signs, place names, street names), private signs (commercial signs on stores), publicity inside stores, and advertising sent by mail. The
factor emerged as independent, but was significantly related to subjective francophone identity. It is important to note that these studies did not record or count signs, but collected the student’s impressions of their contact with signs, and thus were studies of attitudes rather than of signage.

But inspired by Landry and Bourhis, Elana Shohamy – who is an excellent photographer – started taking photos, especially of multilingual signs, and with colleagues, published a pioneering paper (Ben-Rafael, Shohamy, Amara, & Trumper-Hecht, 2006). As the approach spread, panels that included a number of papers using the title “Linguistic Landscape” took place in 2003 at the American Association for Applied Linguistics annual meeting in Portland, Oregon, and at the European Second Language Association at San Sebastian, Spain. The first Linguistic Landscape workshop was organized by Elana Shohamy at Tel Aviv University in 2008, and annual workshops and publications have followed since (Huebner, 2016). A version of this paper was given as a Special Lecture at the eleventh Linguistic Landscape Workshop in Bangkok in June 2019.

As Gorter (2006) pointed out in the first published collection of papers on the topic, the availability of digital cameras in cell-phones meant that it was easy and cheap to collect large numbers of photos of signs. Thus, a technological development helped the field expand rapidly, providing a means of collecting data without all the time and transcription that observation of the spoken language required. Gorter also remarked that “landscape” was perhaps not the best term for what were mainly urban studies. Other problems of methodology remained.

An early publication that tackled methodology was a doctoral dissertation studying signage in downtown Tokyo (Backhaus, 2005b), published as a book in (Backhaus, 2007) and as an article (Backhaus, 2005a). He limited his data to signs for tourists in an area of the central city, and explained the inclusion of English as a result of regulations issued by the municipal government. The next important publication on the LL was a collection by Gorter (2006) of five studies, followed by three journal articles (Ben-Rafael et al., 2006; Gorter, 2006; Huebner, 2006).

The field developed rapidly. There have been a large number of published studies, including some expanding the definition of “linguistic” to move into the wider field of semiotics, such as the collection by Shohamy & Gorter (2009) and the recent article by Correa & Shohamy (2018) which ignores language and deals with commodification of women’s breasts. Among recent innovations is the approach proposed by Blommaert & Maly (2019), which they call Ethnographic Linguistic Landscape Analysis (ELLA); this involves tracing the detailed background of a sign through an URL that connects a local sign to a wide global location; thus, a local sign in Antwerp advertising church services turned out to be connected to a pastor-entrepreneur conducting an international network located on YouTube. But this is not the place to carry out a review of this newly popu-
lar and productive field, but to raise some questions that I hope will be tackled in future studies.

The first is to deal with a fundamental problem, the common failure to produce evidence of the agents who commissioned or who produced the signs being discussed. Most reports of research on public signage satisfy themselves with the researcher’s interpretation of the signs (or the photographs of the signs), like Reader Response theory in literary criticism (E. Spolsky, 1990), and do not seek any further information about the sign maker or the language management agency which ordered it or chose its language. Two important exceptions are the study by Backhaus (2005b) of signs in central Tokyo which he notes were ordered by the city authorities, and research by Malinowski (2009) seeking to learn the authorship of signs in Korean shops in Oakland California. In my brief mention of signs on the Navajo nation, I drew attention to the fact that the signs we found written in Navajo were the initiative of Anglos encouraging bilingual education.

In the Old City study, we noted the Arabic signature on a sign in English, and the change in Arabic script on street signs under Jordanian rule, and we guessed that language choice and order of languages had to do with changes in political rule, but we did not, like Malinowski, ask for production details of the street signs.

In preparing this paper, I have now gathered more precise authorship data. The first ceramic street signs in Jerusalem were made at the request of Sir Richard Storrs, who was British Military Governor of Jerusalem from 1917 to 1921 and Civil Governor of Jerusalem and Judea until 1926. The tile maker was David Ohannessian, an Armenian born in Anatolia and deported during the Armenian Massacre to Aleppo. Sir David Sykes, a British politician and advisor to the Foreign Office, met him there and had him make tiles for the Turkish room in his home in England in 1911. In 1919, Sykes, being a friend of Storrs, arranged for Ohannessian and eight of his workers to come to Jerusalem to restore the Persian sixteenth century tiles of the Dome of the Rock. This commission had been proposed by the architect, Charles Ashbee, who was secretary of the Pro-Jerusalem Society which had been founded by Storrs. Though implementation was blocked by the Turkish consulting architect, Ahmed Kemalettin (Carswell, 2000), David Ohannessian established a studio that later made the tiles for the Rockefeller Museum and Government House in Jerusalem (Kennan-Kedar, 2003; Moughalian, 2016). Ohannessian also made some trilingual ceramic street signs at the request of the Governor. Other ceramic street signs, also initiated by the Pro-Jerusalem Society, including the Jaffa Gate sign referred to earlier, were designed and produced in the mid-1920s by the Ceramic Department of the Bezalel School of Art.

The formal language hierarchy of street names set by the British authorities was English first, Arabic second, and Hebrew third. This hierarchy was not followed strictly in some Jewish and Arab neighborhoods. When David Ohanness-
ian returned to Beirut in 1948, his workers established their own studio. In 1964, a year after one of the partners, Megerditch Karakashian passed away, Stepan Karakashian and his brother Berge split from the other partners, the Balians, and opened their own ceramic workshop and showroom on the Via Dolorosa in the Old City.

One of the first major commissions that Stepan and Berge worked on was the project of the street name tiles of the Old City of Jerusalem. This project was initiated and sanctioned by the Jordanian government, who ordered that all street names should be on ceramic tiles. The names in legible Arabic and transliterated English were painted in black on a white background, and there was a simple design surrounding the tiles, with a yellow background color (Moughalian, 2016). It was these signs to which the Israeli authorities had Hebrew added after 1967, and they also commissioned the preparation of trilingual signs, with Hebrew first and the English a transliteration of the Hebrew. This history of the changing authorship of the ceramic signs shows the importance of authorship to studies of the LL in making clearer important details that assist interpretation.

My second concern about much current work is perhaps more serious. Public signs present a distorted picture of the nature of the sociolinguistic situation of their environment, ignoring that their language choice is mediated by literacy. As Fishman (1991:162) noted, the mandated increase in road and other public signage in the Basque region did not deal with the needed increase of home language use or lead to intergenerational transmission of the language. In the Navajo Nation, there was a kind of diglossia, where the spoken language of the people was Navajo but writing (public and most private) was mainly in English. In the 1970s, the Tribal Council still conducted its business in Navajo, with oral translation provided for Bureau of Indian Affairs officials present, but wrote its minutes and published its laws in English; the Navajo courts heard evidence in Navajo, but kept records in English; the tribal newspaper was printed in English, but local radio stations used Navajo for news, sports results, and announcing the country and western music that they played; they kept a written log in English. Even in those schools where there were bilingual programs, teachers regularly wrote homework assignments on the blackboard in English, and principals communicated in writing with staff in the same language. It is true that Protestant churches had a Navajo Bible, but traditional religious ceremonies continued in Navajo. Thus, to base an account of the Navajo sociolinguistic situation in the 1970s on the public signs would miss the fact that most speech was then still in Navajo.

Much the same was true of the Old City of Jerusalem and other Arab neighborhoods until the 1970s. There was evidence of the existence of Jordanian literacy programs in the switch from decorative to legible script, but generally Arabic literacy was not yet established. In 1947, the British director of education reported
on the failures of education for Arabs, and predicted that half of all Arab children would be permanently illiterate (Miller, 1985). In the Arab markets of the Old City, there were some Hebrew and international English advertisements, but no attempt was made to label items or list prices in Arabic. As Ben-Rafael et al. (2006) noted, public space in Arab villages and towns was still dominated by Hebrew and English signs, but this was a reflection of the state of literacy and not of language use. In time, this has changed; Amara (2018b) reports that Arabic is now the most prominent language used in Palestinian shop names, followed by English and other foreign languages, with Hebrew far behind. Amara interprets this as an attempt to maintain Palestinian-Arabic identity in the face of cultural and linguistic Hebraization (Amara, 2018a).

Similar differences between oral and written language use are common. For instance, in a study of spoken and written multilingualism in West Africa, Lüpke (2018) points out that each gives a radically different view of the language situation: there is some diversity on the language of signs, but it is much smaller than the oral domain. Signs tend to be in former colonial and official languages. This is supported by studies of Gambia by Juffermans (2015) and of North Mali (a country with 68 languages) by McLaughlin (2015) where the choice of script (Latin for French, Arabic, and Tifinagh for Tamasheq) is associated with ideological stance. The inclusion of some signs in other than colonial languages, Lüpke believes, is evidence of the power of these societies to maintain diversity, but the public signage needs to be contrasted to the greater diversity of the spoken languages.

There are many other such cases where the LL illustrates public literacy but misrepresents the sociolinguistic environment. Encouraged by the ease of collecting photographic evidence, those who ignore the authorship of the sign or the spoken repertoire of the community – data much harder to collect – might easily be misled into assuming that their work reveals the language policy of the area. There is important work to be done in the semiotics of public signage and in the wider field of human production of cityscape and landscape, including signs and graffiti and gardens and architecture, which have a role as evidence of one component of a community sociolinguistic repertoire, but it needs to acknowledge the limitations when it is restricted to signs.

I have used the term “Semiotics”, the name of a field reinvigorated by Charles Sanders Peirce in the late nineteenth century to include the study of linguistic and non-linguistic signs. As I read a new book on expanding the LL (Pütz & Mundt, 2019), with a sub-title that includes the words “Multimodality and the use of space as a semiotic resource”, it seems that some in the field are starting to recognize its connection to the larger and better-established field. By some called semiology, Semiotics has a distinguished past and a strong theoretical base. Peirce, born in 1839 in Massachusetts, published a large number of papers in mathematics, logic,
and the sciences, and is considered a founding theorist in logic, pragmatics, and the philosophy of science. His theory of signs distinguishes a sign or representation, an object that is represented, and an interpretation. A second major theorist in the field was Saussure (1915) whose classic concept of signifier (sign) and signified (object) was basic in the development of structural linguistics and to Semiotics (which he called semiology). Many other scholars helped develop the field, including Morris (1938), Morris’ student Sebeok (1968) who added animal communication, and Eco (1976). There are a whole slew of other books and papers: the close tie to an expanded LL is a recent paper dealing with brands of perfume (Zhang, 2019).

Looking at a recent issue of the journal *Linguistic Landscape* and at the program for the eleventh workshop, I was struck by the way that most contributions are descriptions of new examples, some following the expanded definition in Shohamy & Waksman (2009) and adding non-linguistic signs. There are few that explore the underlying theory of the field, although it is noteworthy that half a dozen abstracts include the word “semiotic”, usually as an adjective. Only one, by Mohammed Sadek Fodil, actually refers to the field of Semiotics, citing Peirce’s triadic theory. Others refer to geosemiotics, a term used by Scollon & Scollon (2003) to refer to discourse in place. When papers are purely descriptive and simply list and interpret signs without authorship, reference to the full sociolinguistic situation, and acknowledgement of the theoretical background, *Linguistic Landscape* becomes a game like insect-collecting or Pokémon.

We did tackle theory in B. Spolsky & Cooper (1991). First, we presented some taxonomies to classify the hundred signs we had observed in the Old City of Jerusalem. One taxonomy was of form, which included the following types:

1. Written with a marker or brush on any surface.
2. Typed or written on paper.
3. Printed on a poster.
4. Painted on a board.
5. Painted on glass or plastic
6. Painted on a ceramic tile.
7. Engraved or cut out on bronze of metal.
8. Chiseled or embossed on stone.

We found examples of each, and listed them in order of the increasing difficulty to make them.

A second obvious taxonomy was the number and choice of languages and script. In Jerusalem, the most common languages were Hebrew, Arabic, and English, but there were a dozen languages represented: in a study of spoken languages,
we had found some thirty languages spoken by residents, which shows the gap between the LL and sociolinguistic repertoire of a community.

A third taxonomy referred to content and function. In the Old City, we distinguished eight major types of signs:

A. Street signs. Most were on tile, varied for language by date of production.
B. Advertising signs. They could be local, national, or international.
C. Warning notices and prohibitions. Some were official, other local (“Please ring the bell”).
D. Building signs stating ownership or function: official (“Police”), institutional (“Christian Information Center”), commercial (“Petra Hotel”, “Abu Seif Restaurant”), Home (block number or family name).
E. Informative: directions (“To the Western Wall”), seasonal posters of events.
F. Commemorative plaques: on the former Austrian Post Office.
G. Labels on objects: “Police call-box”.
H. Graffiti: anti-Turkish signs appearing on the anniversary of the Armenian massacres, effacement of one language on a street sign.

Another taxonomy was sign ownership (or maker of the sign), or the intended or probable reader (tourist, resident). Taxonomies do not explain, but simply classify descriptions. We proposed therefore a number of rules, using the preference model developed by Jackendoff (1983). The preference model presented in Jackendoff (1983) and applied in B. Spolsky (1989a), was suggested to us by Ellen Spolsky (E. Spolsky & Schauber, 1986).

The first preference rule that we proposed was what we labeled the “sign-writer’s skill” condition, a necessary and graded condition: “Write signs in a language you know.” This rule explains the fact that signs for tourists in the Old City were normally in English. It also accounts for the many errors found in English menus for tourists.

The second rule we called the “presumed reader” condition: “Prefer to write signs in a language that the intended reader can read.” This rule has an economic motivation. It also depends on and reflects the presumed literacy of the potential readers.

The third rule we labeled “symbolic value”: “Prefer to write signs in your own language or in a language with which you wish to be identified.” This rule explains why Landry and Bourhis interpreted the language of signs as showing the values attributed to the language. These three rules, we argued, helped account for the choice of the language of public and private signs in the Old City of Jerusalem. Of course, the theoretical model would have been strengthened by actually interviewing the authors or writers of the signs.
There are of course other relevant theoretical models that come from semiotics and sociolinguistics. Peirce distinguished between the signans (the material sign) and the interpretant (the object it refers to): he classified signs as icon (like pictures), index (factually connected like smoke and fire), or symbol (a learned relation). Roman Jakobson (1987) proposed six functions in a communicative act: emotive (referring to the addressee), referential (the content), conative (the addressee), metalingual (the code), phatic (the contact), and poetic (the message). Hymes (1972) proposed a sixteen-component model: message form, message content, setting (physical), scene (psychological setting), speaker, addressee, audience, addressee, purposes (outcomes and goals), key or tone, channels, forms or varieties, norms of behavior and of interpretation, and genres. There are, I suggest, a good number of theoretical semiotic and linguistic models that can be used to build a theory of public signage.

If I were asked to suggest the directions I’d like to see in future work in linguistic landscape and public signage, I would first argue that it be seen as a branch of Semiotics, and that it be balanced by reference to the spoken languages of the community. Second, I would hope that researchers would not just rely on Reader’s Response theory (E. Spolsky, 1991), satisfied with their own interpretation of the motivation for a sign, but seek evidence of authorship. Finally, I suggest that we need researchers to propose and explore theoretical models that can capture the fascinating examples of public signs, linguistic and non-linguistic that many are collecting with their cellphone cameras. There is no question that it is an attractive field, but it can be developed into a serious component of Semiotic theory.

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