# Getting a feel for signage: a linguistic landscape study of braille signs at Queen Mary University of London

Florent Zwiers
Queen Mary University of London

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**Abstract**

Linguistic landscape studies rest on the assumption that the choice of language and style on signs in the environment are reflective not only of the presence of speech communities but also of perceived status of the salient languages. This study explores whether this also holds for tactile writing systems such as braille. This was tested through a case study at Queen Mary University of London by means of two data sets: observation of braille signs on campus and semi-structured interviews with four braille users and an expert on accessible signage. This study concludes that braille signs, in addition to providing information, service the symbolic function of representing the community of blind and visually impaired individuals. Furthermore, theories by Bourdieu and Bakhtin can be useful tools to analyse the variation in information, codes used, and placement of braille signs, suggesting that this variation is driven by ideological choices.

**Keywords** Bakhtin, Bourdieu, linguistic landscapes, semiotics; braille, SEB, UEB

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# 1 Introduction

## 1.1 Rationale

The study of *linguistic landscapes* is an interdisciplinary field, with the term itself coming from the seminal study by Landry & Bourhis, who defined linguistic landscapes as "visibility and salience of languages on public and commercial signs in a given territory or region" (1997, 23). Several authors have since made adaptions and expansions on this definition. For example, Jaworski & Thurlow argued the term *semiotic landscapes* was more apt so as to include non-linguistic visual symbols and aspects and defined it as "any (public) space with visible inscription made through deliberate human intervention and meaning making" (2010, 2). However, even in this broader conception, the focus is explicitly on visual symbols and signs.

This project started with the observation that there was variation in the number and type of braille signs on the Mile End campus of Queen Mary University of London (hereafter; QMUL) and that there were different codes and messages used on these signs, which begged the question whether the theories and methods related to linguistic landscape studies could be applied to the tactile linguistic landscape. This is explored through two data collection methods; observations of the (tactile) linguistic landscape at QMUL and qualitative interviews with participants who are knowledgeable on braille.

## 1.2 Research objectives

The objectives of this dissertation are motivated in large part by the work of Englebretson et al. on the sighted-centric norms of reading research, who argued that researching braille is beneficial in two ways; it not only contributes to equity as it centres braille readers, but also can expand the diversity of perspectives in research which can "provide positive, fruitful insights into perception and cognition" (2023a, 403). The main objective is to contribute

*I am grateful to the Braillists Foundation and the members of its community discussion forum, who graciously let me observe their community. Some of the members were participants in this project, but many more responded to my post on the forum with advice, questions, or feedback; these messages were all appreciated.

I would also like to thank Leo Irvin and Dr Agnieszka Lyons, who both read and provided invaluable feedback on (partial) drafts of this dissertation.

to that diversity of perspectives, as this study aims to test if the frameworks and theories that underpin linguistic landscape studies can be used to analyse the *tactile landscape*, which will be done through a case study of the QMUL campuses. The secondary objective is related to the equity and centring of perspectives of people who read braille. This objective is to learn lessons that might inform future considerations about expanding or improving the tactile landscape at QMUL campuses.

### 1.3 Positionality of the author

Much of this dissertation deals with the semiotics of power and politics of language, but it is inevitable that the author is, as Saville-Troike (2003, 277) puts it, "inextricably part of the very social context that is being studied", so some notes on positionality are in order:

The author is sighted and learned to sight read Unified English Braille (hereafter; UEB) several years ago, which means that this dissertation is written from an outsiders perspective, ie. external to the community of blind and visually impaired people who are the main users of braille.

The participants in this study were not compensated for their participation, but mostly do belong to the blind community, which further highlights the importance of the secondary research objective.

### 1.4 Research questions

The main question in this paper is:
How suitable are Linguistic Landscape frameworks to analyse the variation of braille signs around QMUL campuses?

This question will be explored through three sub-questions:

1. What theories and assumptions underpin linguistic landscape frameworks?

2. What kind of variation in braille signage can be found on QMUL campuses?

3. How can these variations be explained within a linguistic landscape framework?

### 1.5 Structure of this paper

After this introduction, section 2 will discuss literature that is relevant to the first sub-question. In section 3, a background on braille, including a short historic synopsis, will be given. Methods for the case study are described in section 4 and the results presented in section 5, before these are discussed in section 6 with final conclusions in section 7.

Appendix A on page 44 gives a compilation of lessons learned about the tactile landscape at QMUL that may not be directly relevant to the research question, but will be relevant for discussions on how to improve braille signage at QMUL. This appendix will serve as a basis of further discussion by the author with the student union and other relevant stakeholders at the university.

There are some pictures in the dissertation, particularly in section 5; a full list of image descriptions can be found in Appendix B on page 47.

### 1.6 Notes on style and terminology

In this dissertation the term linguistic landscape is used in preference over semiotic landscape (see section 1.1), as the focus is on braille, which is writing system and thus inherently linguistic. Whether the term *braille*, when referring to the writing system, is capitalised or not varies a lot across publications. Even in academic literature it can be found uncapitalised (e.g. Englebretson et al. 2023a) or capitalised (e.g. Campsie 2021). The style guide by Garner (2022), recommends going with capitalisation as that is most common (by a ratio of 1.6:1) in a large corpus of print. However, I have chosen to deviate from the Garner in this instance and to write braille in lowercase (except where it is part of a name) as this follows guidance by the International Council on English Braille (hereafter; ICEB) and the UK Association for Accessible Formats (hereafter; UKAAF).

There are some glosses in this dissertation which will have printed (simulated) braille dots in the first line and the print in the bottom line, with an interlinear gloss in the middle. In these interlinear glosses, characters expressed by a single braille cell will be enclosed in parentheses while double or triple parentheses will indicate that the enclosed characters are expressed by two or three braille cells, respectively. The capital indicator prefix will be indicated as (C.I.) and the numeric indicator prefix as (N.I) in the interlinear gloss.

## 2 Literature review

### 2.1 Linguistic landscapes

Linguistic landscape studies look at distribution of the type and form of text in the spatial environment. The term comes from Landry & Bourhis (1997), who argued that the linguistic landscape (ie. the salience of languages in the public space) serves two functions; an informational one and a symbolic one. On the informational side, linguistic landscapes show that a language community or communities live in the area. Additionally, the presence of a language on signs indicates that services and transactions in the area can be conducted in that language. Symbolically, the salient languages are shown to have a certain status by being included on the signs; it shows both to members of the community and outsiders that the language, and by extension the community, has value and status. Many linguistic landscape studies consider areas where multiple language communities live (and influence the linguistic landscape). For example, Ben-Rafael et al. (2006) compared the presence of Hebrew, Arabic, and English in Jerusalem and in their analysis use the work of Bourdieu to explain how different fields of unequal power relations are reflected in the linguistic landscape. In his examination of the Welsh linguistic landscape, Coupland (2010) explores the ideology behind the inclusion (and ordering) of Welsh and English on signs and talks about *parallel text bilingualism* as an ideological practice, which is underpinned by several beliefs including that the languages are equal and equivalent and that they must be interpreted strictly separately and fully formed. The ideology thus "seeks to suppress variation within a code" (Coupland, 2010, 87) and is therefore a manifestation of standard language ideology, or the belief that there is a "correct" language, but applied to multiple languages rather than one. Even apart from the suppression of variation, the supposition underlying parallel text bilingualism, that the languages are equal and equivalent, can be questioned; Saville-Troike (2003) points out that languages spoken in the same geographical area would evolve under different social and political pressures to serve different functions.

Linguistic landscape analyses can also be useful outside of multi-lingual settings; Cotter & Vokes (2024) compared the style and messages on signage on businesses in East London during the COVID pandemic, drawing on theories of Mikhail Bakhtin to explain the *double-voicing*, or multiple (possibly conflicting) messages of some signs. Health warnings urging social distance

were sometimes utilised to also convey commercial motivations hoping to get more shoppers to a business.

In sum, linguistic landscapes serve two functions, an informational one and a symbolic one, and the selection of language, or the style within a language, can convey aspects of the socio-political forces in the area.

### 2.2 Informational function and speech communities

The informational side of the linguistic landscape, according to Landry & Bourhis (1997), is to mark the territory of a language community, which begs the question on how we would define a language community. Saville-Troike points out that one of the functions of language selection is a political one; selecting certain languages over others can be done to "unify speakers as members of a single speech community and to exclude outsiders from intragroup communication" (2003, 13). The term *speech community* is a somewhat nebulous one. It is not the same as a group of people who all share a language; Saville-Troike (2003) gives several examples where they diverge, including deaf signers and hearing interpreters, who both speak sign language, but would not be considered to be in the same speech community. She argues that the *speech* part of the term requires members to be using or valuing language in the same way, while the *community* part requires "some significant dimension of experience to be shared" (2003, 15). However, she also notes that the use of the concept is not without controversy as its use implies an acceptance of the social and political boundaries it draws.

Snook (1990) would criticise unquestioning acceptance of such boundaries. In his analysis of Bourdieu's work, he stresses that communities are not objective realities, but are socially constructed and maintained through symbolic power and symbolic violence. Symbolic power is the kind of power that is not recognised and thus tacitly accepted (Snook, 1990). Symbolic violence refers to a group or groups being mistreated, for example by being denied resources or access, without it being recognised by either party as all involved see it as the "natural order of things" (Webb et al., 2002, 25). In this view, inequalities are not simply the result of one community coercing another, but due to a system of symbolic violence that reinscribes the domination. As Bourdieu phrased it in conversation with Wacquant (Bourdieu & Wacquant, 1992, 167; emphasis in original):

> Symbolic violence, to put it as tersely and simply as possible, is

> the *violence which is exercised upon a social agent with his or her complicity*. (...) To say it more rigorously: social agents are knowing agents who, even when they are subjected to determinism, contribute to producing the efficacy of that which determines them insofar as they structure what determines them. And it is almost always in the "fit" between determinants and the categories of perception that constitute them as such that the effect of domination arises.

Paraphrasing Bourdieu, Snook (1990) argues one of the functions of language is to push people into certain language communities, which then determines their social worth. Language is not only a social practice, but an institutional one as well; "Bourdieu elaborates language into a theory of *ministerium* by which a representative (minister) represents a group and calls it into existence" (Snook, 1990, 174; emphasis in original).

Another perspective on (speech) communities is that of Santa Ana & Parodi (1998), who recognise the existence of these communities, but do not see them as monolithic; they propose a "nested" model of speech communities where people are classified into overlapping subsets of speakers and where linguistic variables reflect expanding fields of interaction. This nested model might help describe the group of braille users of relevance to the case study later in this dissertation. Braille is a writing system and encodes a language; those who use UEB (or other forms of English braille) would speak English and are part of that speech community together with sighted people. At the same time, they do value and use a particular aspect of (written) English that others do not, namely braille. As mentioned above, Saville-Troike (2003) stresses the need for shared dimension of experience or knowledge in order to qualify as a community; blind people and those with visual impairments certainly seem to qualify under that definition, with a well documented shared history of discrimination and marginalisation (e.g. see Koestler, 1976/2004) and several organisations representing the community (e.g. the Royal National Institute of Blind People, hereafter RNIB, in the UK). However, not all in those in that community use braille even if virtually all tactile braille readers are in the community, so again, a nested model of overlapping subsets makes sense to capture the group of braille users. Another grouping in this overlapping schematic that might be relevant is around the term *disability*. Traditionally, the dominant view of disability certainly would not be associated with community, in the words of Swain et al. (2003, 1):

> The dominant view of disability is individual and essentialist, that something is wrong with the individual. A disabled person is thought of as someone who cannot see, cannot hear, cannot walk, has Down syndrome, has mental illness and so on. The words 'cannot' and 'has' are crucial.

However, Swain et al. recognised a paradigm shift wherein a more positive identity was forged. In this shift, disability is a condition of society rather than the individual. In this new paradigm, *impairment* is defined as lacking (part of) a limb or having a defective limb or organ, but *disability* is the restrictions or disadvantages that society puts upon individuals with impairments. Building on the paradigm shift Swain et al. recognised, a diversity of critical perspectives have been developed, which Karlsson & Rydström (2023, 396) argue are partially indebted to feminism; "Just as feminists have shown that society is created by and for men, they have also shown that society is created by and for the able-bodied". While Karlsson & Rydström do not directly reference Bourdieu, the idea that oppression and inequality is created and maintained by a society rather than just the individuals within it fits well with the concepts of symbolic power and symbolic violence. Several critical theories have been developed that critique and challenge mainstream thinking and the dominant binary conception of disabled versus able-bodied. These theories are sometimes grouped under the umbrella *crip theory*, as they focus on questioning entrenched beliefs and discourse and "reclaiming" offensive words (e.g. crip) from external authorities to allow conceptualisation within the group (Karlsson & Rydström, 2023; Hou & Namboodiripad, 2025). Figure 1 depicts a way to model these nested communities[1]. This is not an exhaustive list of (sub)communities; many other communities and networks might be nested into this model that are not depicted.

In sum, braille does not simply represent a single speech community, but perhaps represents various nested communities to varying degrees.

### 2.3 Symbolic function

If the symbolic function has to do with the status or value of the group, it might be good to look at the power allotted by language.

Linguistic structuralists separated the form and structure of a language from its expression. Russian literary critic Bakhtin disagreed with sepa-

[1]The Euler diagram was created with software from R Core Team (2021)

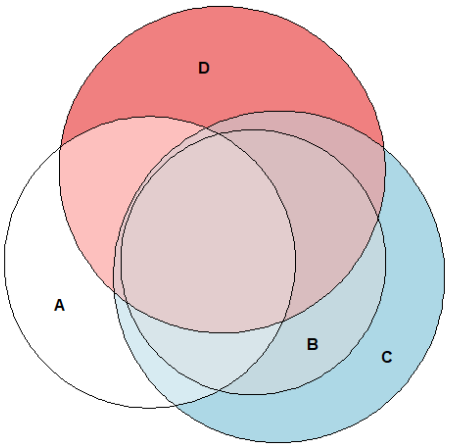



Figure 1: *Euler diagram showing a possible mapping of nested communities, wherein A = community of braille users, B = community of blind and visually impaired people, C = disability community, D = English language community (image description for this image in Appendix B on page 47)*

rating language systems from individual expression, as he saw individual consciousness as inherently semiotic and argued that "language is not a neutral medium that passes freely and easily into the private property of the speaker's intentions; it is populated—overpopulated— with the intentions of others" (Bakhtin, 1981, 294). When we use language, according to Bakhtin, we always draw on different voices, representing different ideologies and world views, in a process called *heteroglossia* or double-voicing (Baxter, 2014; Hirschkop, 2021). While he developed the term initially as a way to analyse literature, he was aware of its application to everyday speech too; this *social heteroglossia* takes places as languages are subdivided into multiple competing discourses, where linguistic norms towards a common unitary language are at odds with stratifying forces that divide different social groups. The forces pushing for linguistic norms, often from socio-political forces that wish to "create stability within a nation or a social group" (Baxter, 2014, 35), were called *centripetal* by Bakhtin. The other force, which he called *centrifugal*, drives language apart along socio-ideological lines; along lines of different social groups or different generations. These two forces are present at the same time and act upon every utterance; "every utterance participates in the 'unitary language' (in its centripetal forces and tendencies) and at the same time partakes of social and historical heteroglossia (the centrifugal,

stratifying forces)" (Bakhtin, 1981, 272). While Bourdieu similarly rejects the dichotomy of classic structuralist, in a way he went even further, as he saw language as inherently part of institutional power; "*linguistic relations are always relations of symbolic power*" (Bourdieu & Wacquant, 1992, 142; emphasis in original) Language is not just something to be understood, but is a symbolic good. In this view, language is part of a semiotic style and no different from dress or belongings; these are all means to obtain a symbolic profit in a marketplace of social power (Bourdieu, 1977). The regime of unquestionable truths created by language, which enables a system of social orthodoxy, is called *doxa* by Bourdieu, which Webb et al. (2002, 119) paraphrase that which "works to distinguish the thinkable from the unthinkable, so that certain courses of action, those that seriously challenge the established social relations, become literally unthinkable—or at least, inarticulable."

Finally, as linguistic landscapes are concerned with written, rather than spoken, language, it is useful to consider the impact of orthography and orthographic conventions. Writing, in contrast to the spoken word, gets some authority from the fact that it is static and can be read and confirmed by multiple people at different times, but "there is also a common acceptance of some intrinsic power in the written word."(Saville-Troike, 2003, 260). Saville-Troike (2003, 33) discusses the "pervasiveness of connections between orthography and politics" and gives several examples where orthographic choices reflect political structures, such as the choice between the Cyrillic and Roman alphabet in many former Soviet Union states (reflecting politically facing Russia or Western Europe) or the choice between traditional and simplified characters by Chinese businesses (reflecting economic influence of Hong Kong and Taiwan or political pressure from the People's Republic of China). There may also be a power dimension separate from (political) access; Saville-Troike (2003, 269) discusses how the Cherokee syllabary, developed in the nineteenth century, "was deliberately designed to be unlike the Roman alphabet in a statement of Indian identity and power which was distinct from the European colonizers".

### 2.4 Coversational maxims

So far, the literature review has focussed on at the (symbolic) meaning imbued by the selection of language or style, but there is (obviously) also a semantic and pragmatic aspect to written signage that is worth looking at. Saville-Troike (2003) argues that in ethnographic work and studying speech

communities, universal frameworks of communication such as that of conversational maxims are useful as working hypothesis against which observed language patterns can be tested. The idea of (universal) conversational maxims comes from Grice (1975), whose theories attempt to explain how the recipient of a linguistic message gets from the expressed meaning to the implied meaning. There can be a level of meaning that is different from the semantic meaning of the words in an utterance. This level of meaning is conveyed through *implicature*. Implicature is different from *inference*; the latter is deduced by the recipient (or "hearer") and may be based in linguistic or non-linguistic clues. By contrast, implicature is generated intentionally by the producer (or speaker) and may or may not be understood by the recipient (Thomas, 1995). Grice distinguished two different kinds of implicature; *conventional implicature* and *conversational implicature*. Conventional implicature is the kind of implicature that is always conveyed, regardless of context, and is introduced by certain words; Thomas (1995) lists *but*, *even*, *there*, *yet*, and some uses of *for*.

All implicature that is not conventional is conversational and these kind of implicatures are generated by the context. The mechanism through which conversational implicature is interpreted is, according to Grice (1975), the *Cooperative Principle* and four conversational maxims. The Cooperative principle states "make your contribution such as required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged" (Grice, 1975, 45). Note that, despite it being formulated in the imperative mood, it is not a rule that must be followed, but rather an assumption people make during linguistic interaction. The four maxims are:

- *the maxim of quantity*: an utterance should have enough (but not too much) information.
- *the maxim of quality*: an utterance should be truthful.
- *the maxim of relation*: an utterance should be relevant
- *the maxim of manner*: an utterance should be orderly and unambiguous.

If the semantic meaning of an utterance violates one of the maxims, but we assume the cooperative principle to be in effect, we will start searching

for an implicature. When the speaker means to generate implicature and to indicate that by non-observance of a maxim, it is called *flouting* a maxim. However, there are other ways of non-observence, notably *infringing* which Thomas (1995, 74) summarises as "imperfect linguistic performance rather than from any desire on the part of the speakers to generate a conversational implicature".

In sum, there is meaning beyond the semantic meaning of words, which we look for through four conversational maxims if we assume that the producer of an utterance is being cooperative.

# 3 Braille background

## 3.1 History

While this dissertation is about contemporary braille, a few key historical developments are important to understand the current position of braille and those that use it. People who are blind or visually impaired had long been excluded from education (and many other areas of society) when the first formal institution for education for blind people in Europe was founded in Paris 1785 by Valentin Haüy, who initially taught blind people to read through touching embossed letters. This method, while convenient for sighted teachers, was not ideal as letters are designed to be visually distinguishable but much harder to tell apart by touch; in the words of Villey (1930, 30), "they were talking to the fingers in the language of the eyes." While more easily distinguishable font types were developed (e.g. moon type), these all operated from very sight-centric norms. A major development that departed from the existing systems was introduced by Charles Barbier, who visited the school and had developed a system based on phonics sounds represented by dots in a 5x5 grid. In addition to being purely tactile, Barbier's system allowed easy reproduction of the grid with a punch tool and grooved ruler, meaning students could write as well as read, which was not possible with embossed letters. The system was adapted by Louis Braille, a student at the school, who reduced the grid to six dots so that it could be easily felt by a single finger (Farrell, 1956; Koestler, 1976/2004; Leland, 2023; Englebretson et al., 2023a).

A key takeaway from this very brief synopsis of the development of braille, is that its invention centred the needs of blind and visually impaired people and was a departure from forcing them to operate in a system developed for sighted people. It also shows that braille is a system that was developed as an alternative to print and not as a subsidiary to it. A common misconception is that braille is a code for print; as is clear from the history above, it is its own orthographic system that encodes spoken languages and operates parallel to (and independently of) print. As Englebretson et al. (2023a, 408) put it:

> Furthermore, the claims that "Braille characters are abstract representations of letters" also missed the crucial point of the alphabetic principle: both braille letters and print letters are representations of phonemes, not representations of each other. For

example, the braille letter ⠞ represents the phoneme /t/ and the English print letter t also represents the phoneme /t/.

Another aspect of note is that the braille system as we know it today was not universally adopted; many varieties of dot based reading system sprung up in the USA during the nineteenth century in what is sometimes dubbed "The War of the Dots"; attempts to create a "standard dot" were mockingly called the "standard rot" by opponents. In Britain, things were less divided and Braille's original system was used there, albeit expanded with some contractions for common English words and patterns and with several local shorthands and specialised codes (Farrell, 1956; Koestler, 1976/2004; Leland, 2023). Several attempts were made during the twentieth century, to try and converge the different English braille codes, but these were not hugely successful until the 1990s. In 1991, Abraham Nemeth, who had developed an eponymous braille code for mathematics, and Tim Cranmer sent a memorandum to the Braille Authority of North America lamenting the "the complexity and disarray into which the Braille system has now evolved" (Cranmer & Nemeth, 1991), which they blamed for the perceived reduction in braille literacy rates. They argued a unified system needed to be created and set out nine demands of this unified code, including that would encompass both technical and literary codes, would be unified across English speaking countries, and would accurately represent printed text so that a blind person using braille would have access to the exact same information as their sighted peers. Standard language ideology, that is, the idea that there is a correct language that all speakers should confirm to, seems to have informed the argument the writers of the letter were making, e.g.: "the infrastructure of our society mandates a universal standard by which the proper use of written English is gauged, and the blind as well as the sighted must be held to that standard" (Cranmer & Nemeth, 1991). This letter set a process in motion that would eventually lead to the development of what is now known as UEB. In 1993, the ICEB greenlit the project and the first edition of the UEB rulebook was published in 2010. UEB was accepted as the official standard by the UKAAF in 2011 (Cryer et al., 2013). The key goal of UEB, other than unifying braille, was to bring braille more closely in line with print to make translation to and from print easier and more consistent.

This history of divergence and then convergence of different codes, with competing ideologies driving in different directions, is an example of the centripetal and centrifugal forces of Bakhtin recognised in social heteroglossia.

## 3.2 Braille codes

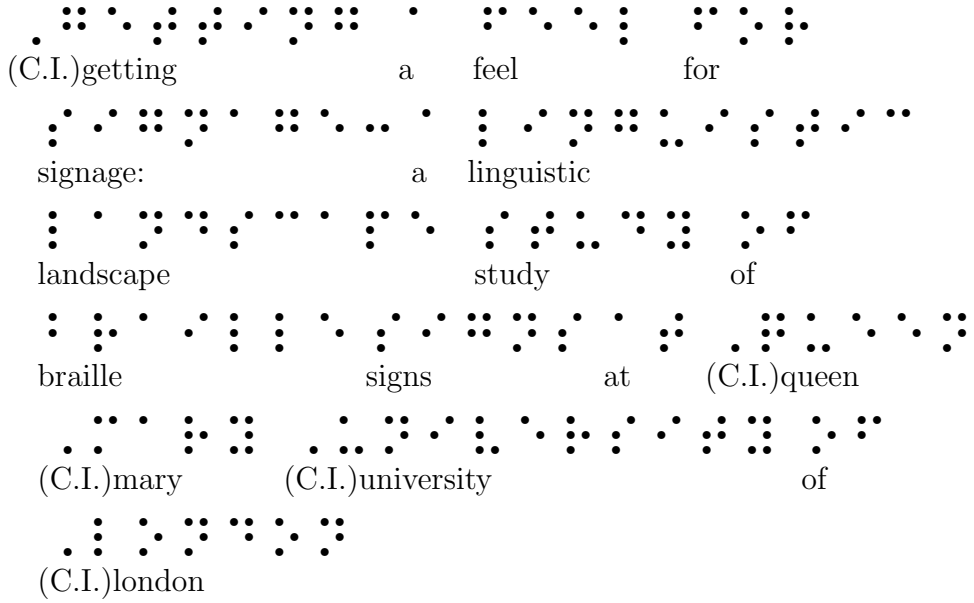
English braille used today consists of *cells* that can hold up to 6 dots in a 3x2 matrix. This means that there are a total of $2^6 = 64$ possible cells, including the completely empty cell. The 63 cells that contain at least one dot are known as characters. In UEB, 8 of these 63 character are reserved as prefixes, meaning that they modify the subsequent cell(s), with the remaining 55 being root characters.

### *3.2.1 Contracted and uncontracted braille*

Uncontracted (English) braille, also known as Grade I braille, uses characters to represent letters and some punctuation marks, much like print. This form of braille is mainly used by early learners or individuals who lose sight at a later age and only wish to use braille for labelling household goods. Fluent braille readers will often be use contracted (or Grade II) braille to read longer texts (Englebretson et al., 2023b). Contracted braille will use several contractions that represent words or common patterns in English.

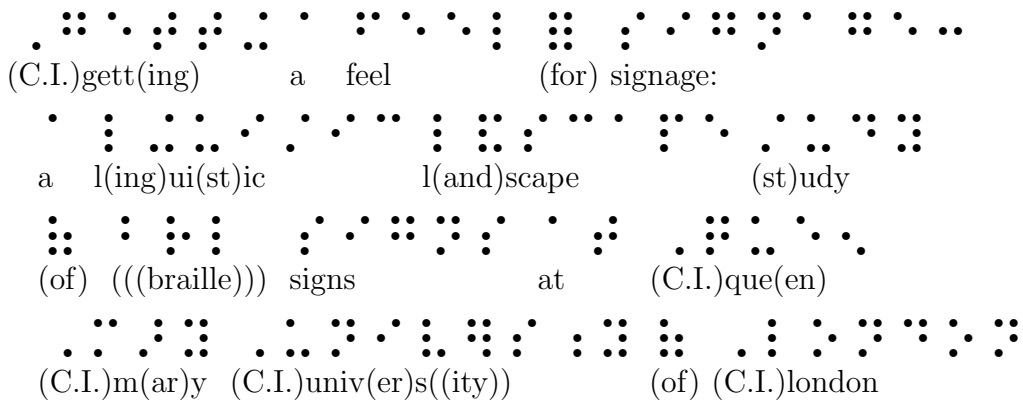
For example, the single cell character ⠯ represents *and*, both as the word on its own (ie. the conjunction in English) and as a pattern in longer words such as l*and*scape. To illustrate this further, the title of this dissertation is glossed out in contracted and uncontracted UEB below (see section 1.6 for glossing conventions used throughout this dissertation):

(1) a.



(C.I.)getting a feel for signage: a linguistic landscape study of braille signs at (C.I.)queen (C.I.)mary (C.I.)university of (C.I.)london

b.



(C.I.)gett(ing) a feel (for) signage: a l(ing)ui(st)ic l(and)scape (st)udy (of) (((braille))) signs at (C.I.)que(en) (C.I.)m(ar)y (C.I.)univ(er)s((ity)) (of) (C.I.)london

Getting a feel for signage: a linguistic landscape study of braille signs at Queen Mary University of London

In print, the title is 108 characters including spaces, while in uncontracted braille (example 1a) it takes up 113 cells. The discrepancy between print and uncontracted braille comes from the fact that there are five capital letters which are indicated with a prefix character in braille. In contracted braille (example 1b), only 76 braille cells are needed.

### *3.2.2 UEB and SEB*

Before the adoption of UEB, the standard in the UK was Standard English Braille (hereafter; SEB). There are some differences between the codes, particularly when contracted as some SEB contractions were dropped. Another key change is that UEB attempts to stay closely in line with print, so different characters were introduced to express various forms of emphasis (bold, underline, italics, etc.), while SEB did not differentiate between these. Older versions of SEB did not use capital letters either, with later versions making capitalisation optional, while UEB follows the same rules as print when it comes to capitalisation (Duffy, 1990; Cryer & Home, 2008).

## 3.3 The position of braille today

The drive for UEB, according to the memorandum by Nemeth and Cranmer, was dwindling braille literacy rates. However, hard data on braille literacy rates does not seem to exist. Sheffield et al. (2022) conducted a systematic literature review and found that all claims to braille prevalence rates (after 1970) in the USA can be traced back to two primary sources, both of which have very questionable external validity, meaning that estimates on how many people use braille in the USA are speculative. The picture is not any clearer in the UK; there is an absence of peer reviewed studies estimating the number of braille users. Several organisations (e.g. RNIB, Sensory Trust, Sight Savers) make claims on their website about the number of braille users in the UK, ranging from 12,000 to "over 30,000" braille users, but it is not clear how these numbers were obtained.

While the number of users might be unclear, it seems clear that braille is of importance to those that do use it. For many people who are blind or visually impaired, braille is the only path to both active and passive literacy. That is, it allows for both reading and writing in a way that many other accessible options (e.g. audio books) do not. Unsurprisingly then, braille literacy is correlated with higher educational achievement and lower rates of unemployment (Englebretson et al., 2023a; Tobin & Hill, 2015). Beyond these economic measures, it is also of cultural importance to its users, a significance which is recognised by several countries; in March of 2026, the governments of France and Germany sent a joint application to UNESCO to have the use of braille included in the Representative List of the Intangible Cultural Heritage of Humanity (Reiner Delgado).

As mentioned above, braille is "governed" in the sense that UEB is set as the standard in the UK by UKAAF, and that UEB as a code itself is maintained by ICEB; this makes braille different from most orthographies, which tend not to have a regulatory body to set standards (Englebretson et al., 2023b). In addition, there are several policy documents and guidelines that relate to braille signage in the UK:

- International standard **ISO 17049** from the year 2013, which related to accessible signage and states the requirements for the dimension and shape of the dots on raised braille signs.
- Building code **BS 8300-2** from the year 2018, which contains some rules about placement and locating (e.g. it recommends a notch on the left hand edge of a sign to help locate the braille) and also has some recommendations that uncontracted braille is to be used on short signs, while "signs incorporating a paragraph of text" should use contracted braille to reduce the length.
- The **Sign Design Guide** by Barker & Fraser (2000), which lays out the same dot shape and dimensions as in ISO 17049 above as well as the height at which signs should be placed (1400mm to 1700mm above the floor)
- The **Sign Design Guide Plus** by Barker et al. (2024), which is an updated version of the Sign Design Guide mentioned above and, in addition to the information in the old guide, also recommends using UEB (for English signs) and says that at a minimum the following things should be labelled in braille:
  - toilets
  - floor signs at stairs
  - lifts and buttons within lifts
  - other doors "where the public have access" (p. 143)

It seems the first two (ie. the standards) are based on, or at least in line with, the Style Design Guide, but not with its updated version, the Style Design Guide Plus.

## 4 Methods

### 4.1 Landscape data

Collection of landscape data was done by physically visiting the various campuses with a notebook, measuring tape, and camera and then recording all encountered braille signs and their location. Initial landscape data were collected in December 2025 as part of an assignment for the module Trends in Linguistic Research (LIN7027) and spanned seven of the buildings on the Mile End campus of the Queen Mary University of London (ArtsOne, ArtsTwo, Francis Bancroft, Graduate Centre, iQ East Court, Library, and Students' Union Hub). In June of 2026, I revisited the initial seven buildings, but also expanded the dataset by visiting four additional buildings on that campus (G.O. Jones building, Joseph Priestley building, Queens' building, and the Octagon) and the four other campuses of Queen Mary; Charterhouse, Lincoln's Inn Fields, West Smithfield, and Whitechapel. Unfortunately, none of these campuses seemed to have any braille signage. Additionally, data from the only other educational (ie. non-residential) building on the Mile End campus, the Hive, is missing as that building is currently closed until September 2026.

Table 1: Overview of QMUL campuses

| **campus** | **period(s) visited** | **notes** |
|---|---|---|
| Charter House | 8 June 2026 | no braille signs found |
| Lincoln's Inn Fields | 8 June 2026 | no braille signs found |
| Mile End | 4-18 December 2025 & 19 June 2026 | braille signs varied between buildings |
| West Smithfield | 8 June 2026 | no braille signs found |
| Whitechapel | 19 June 2026 | no braille signs found |

### 4.2 Interviews

Further data collection was conducted in the form of qualitative interviews with people one of two categories; people who were involved in the production of the braille signage or people who used braille regularly. Participants were found through email and internet forums. To find participants involved

in braille signage production, I emailed several individuals and departments within Queen Mary (the Estates and Facilities Directorate, the Disability and Dyslexia Service, and two individual administration staff members) and the Royal National Institute of Blind People (RNIB). This yielded one participant who is an Accessible Maps, Images and Signage Consultant. To recruit participants who used braille, I made a post on the community forum of The Braillists Foundation, which describes itself as a "grass-roots community group offering high quality training and support to emerging and established braille users". I received a lot of reactions on the this post and ended up interviewing four participants, who were all based in the UK.

The only inclusion criteria for participants were age (over 18), location (UK), and being either a braille user or have involvement in production of braille signage. To ensure the anonymity of the participants, codes are used to refer to them rather than names. The expert on accessible signage (ie. who knew about production of braille signage) is referred to as A1, while the four braille users are referred to as B2, B3, B4, and B5.

Interviews were semi-structured, meaning questions within a theme were asked with follow up questions dependent on their answers. Participants were asked about their relationship to braille, how much they used braille, and which braille code(s) they used in daily life. Then, participants were presented with some examples of braille signs shown at Queen Mary and asked for their opinion. Finally, participants were asked what they thought were good examples of braille signs. All interviews lasted between 40 minutes and an hour. Three interviews took place online and two in-person, but all participants signed a consent form online through "Docusign", which was a choice made as that allowed for the use of screen readers (or other technology) to read the consent form. Some procedural notes on the consent form will be made in section 6. For the four participants who gave prior approval, the interviews were audio recorded. During the other interview, pen and paper notes were taken. The recordings were then transcribed and the notes typed out. As the focus was on the content, rather than the form, these transcripts were edited lightly for readability, meaning punctuation was added and duplicate words (e.g. because of stutters or false starts to sentences) and non-semantic interjections (e.g. "ehm") were left out of the transcript. These transcripts/notes were analysed using *Taguette*, which is is a coding tool created by **?** that allows tagging codes onto chunks of text. This data analysis software was chosen because it was open-source, cost effective, and because it could run locally on a personal computer, which guaranteed par-

ticipant data was not shared anywhere. Data coding happened in two cycles. In the first cycle, four broad categories in line with the research question were created. In the second cycle, similarities and differences between the categories were identified with pattern coding techniques, creating several layers of sub-categories.




Figure 2: *A toilet sign in Francis Bancroft, with a notch to locate the braille on the left hand side; the braille simply reads "Toilet" (image description for this image in Appendix B on page 47)*

## 5 Results

### 5.1 Landscape results

After recording all the braille signs, they were categorised into seven groups:

- **navigation signs** did not relate to an individual door but rather described the layout of a floor or building,
- **doors signs** described what rooms/halls could be found on the other side of the door (not including toilets),
- **stair signs** to indicate stairwells,
- **lift signs** braille on or near the buttons to call the lift,
- **floor signs** to indicate what floor you are on outside lifts or stairwells,
- **toilet signs** on (or near) the toilet doors, and

- **safety signs** which indicated refuge points or emergency exits.

There was a qualitative difference in the kind of information conveyed, as can be seen in table 2. Even safety information was not consistent, with fire refuge points having braille instructions in some buildings, but not others. There was also inconsistency within some buildings; the Francis Bancroft

Table 2: Overview of braille signage on the Mile End campus

| **building** | **nav.** | **doors** | **stairs** | **lifts** | **floors** | **toilets** | **safety** |
|---|---|---|---|---|---|---|---|
| ArtsOne | No | GF only | Yes | N/A | No | GF only | No |
| ArtsTwo | No | No | No | Yes | No | Yes | No |
| Francis Bancroft | No | No | Mostly | No | No | Some | Yes |
| G.O. Jones | No | No | No | No | No | No | Yes |
| Graduate Centre | Yes | Yes | Yes | No | Yes | Yes | No |
| iQ East Court | No | No | No | No | No | No | No |
| Joseph Priestley | No | No | No | No | No | No | No |
| Library | No | No | No | No | No | No | No |
| Octagon | No | No | Mostly | N/A | No | Mostly | Yes |
| Queens' building | No | No | Yes | N/A | No | No | No |
| Students' Union Hub | No | Yes | No | Yes | No | Yes | No |

*nav. = navigation*

*GF = Ground Floor*

buildings labelled most (but not all) toilets doors (and information on the doors varied, see section 5.1.2), while in the ArtsOne building, braille signage was present on most doors on the ground floor, but were completely absent on the first floor.

In addition to the qualitative differences, the presence, location, and style of braille signs varied greatly between (and occasionally within) the 11 buildings on the Mile End campus surveyed. The differences found on campus will be discussed in four sections below; 5.1.1 Codes used, 5.1.2 (Dis)parity with print, 5.1.3 Placement, and 5.1.4 Damage and mistakes.

### *5.1.1 Codes used*

Table 3 gives an overview of the codes used in buildings that contained at least some braille signage.[2] Some (but not all) toilets in the Francis Bancroft building used the capital indicator (e.g. figure 2 on page 20), but no other capitals were used anywhere else. The numbering in the Student Union Hub used some non-standard (that is, neither SEB nor UEB) system which uses only the bottom four dots of the cell (dots 2,3,5,6) and no numeric indicator. All other signs on campus used SEB, with buildings varying on whether or not contractions were used. The reasoning behind the choices for contractions was unclear; the building code guidelines (see section 3.3) recommend contracting longer signs only, but even one word signs used contractions in some buildings while other buildins did not use contractions at all.

Table 3: Braille forms and information

| **building** | **braille used** | **notes** |
|---|---|---|
| ArtsOne | SEB Grade I | SEB noticeable only by lack of capitals |
| ArtsTwo | SEB Grade II | limited braille signage present |
| Francis Bancroft | SEB & UEB Grade I | some signs capitalise, others do not |
| G.O. Jones | Grade I | only the refuge point has braille |
| Graduate Centre | SEB Grade II | no capitals used anywhere, always contracted |
| Octagon | Grade I | limited braille signage present |
| Queens' building | Grade I | limited braille signage present |
| Students' Union Hub | SEB Grade I and non-standard | door numbers a code other than SEB or UEB (and no numeric indicator) |

[2]The library did have braille on the soap dispensers in the toilet (saying "push" in grade I braille), but as this is presumably done by the soap manufacturer and no other braille was found in the building, it was left out of the table

### *5.1.2 (Dis)parity with print*

The information provided by braille in the Francis Bancroft building was very inconsistent. Not all toilets were labelled in braille, but even where they were some only mentioned gender (ie. "men" or "women") and some only mentioned the word toilet without mentioning gender (e.g. see figure 2 on page 20 which says "ladies" in print, but not in braille), but no toilet door included both, despite the fact that both pieces of information were provided in print.

By contrast, there were some examples where efforts towards more information parity were made:

In the Students' Union Hub, all doors had braille signage, including ones not meant for the public (e.g. "cleaners store"). No other building had braille signs for doors that did not lead to either sanitary facilities or educational rooms.

The Graduate Centre was the only building with navigational signs on each floor, in the hallways outside the stairwells and lifts. These signs had print and braille in alternating lines and ended with a line with just braille (see figure 3 below). This last braille only line included information that print readers could have gleaned from visual symbols on the sign (e.g. an icon of a shower). While these signs were not without problems (see section 5.1.4), they were the only examples where more information was presented in braille than in print alone.

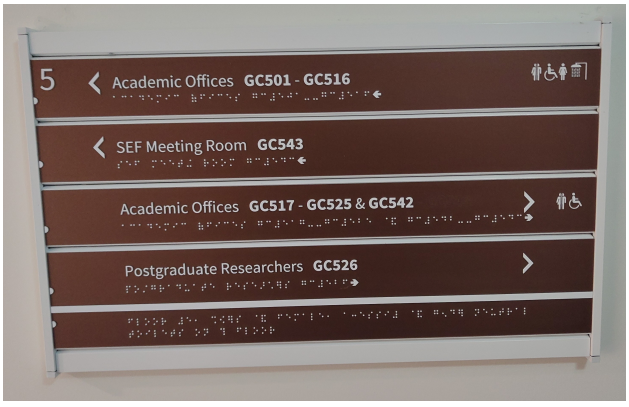



Figure 3: *A navigational sign on the 5th floor of the Graduate Centre with alternating print and braille (image description for this image in Appendix B on page 47)*

### *5.1.3 Placement*

All across campus, braille signs attached to walls were placed exactly 140 centimetres up from the floor. When braille signs were attached to doors, these were sometimes placed slightly higher, but always within the 1400-17000mm band recommended by the Sign Design Guide (see section 3.3).

Stairwell signs were usually found either on the wall near the tops and bottoms of stairs or on stairwell doors. The Francis Bancroft building was an exception in that sign placement there was more inconsistent. The most egregious example was the ground floor sign in the east stairwell (see figure 4); this sign was over two metres away from the door with several water and heating pipes (marked as such in print) running between it and the door and a radiator located under the sign. This sign would hard to locate and reach even for a sighted individual.

In the ArtsOne building, the doors opened into the hallway, meaning that reading a braille sign attached to the door could risk the door opening into you. The accessible toilet in that building has a motion sensor which automatically opens the door (towards you), which would make reading that door sign by touch nearly impossible.

Another thing to note with regards to placement and locating signs is that some (but not all) buildings have online accessibility guides, but even where they exist, they do not mention braille at all.

### *5.1.4 Damage and mistakes*

There were also quite a few errors in the braille, some as they were created with mistakes on them and some due to damage to the signs causing dots to come off.

The sign in figure 5a would at one time have read "men" in grade I braille, but is now illegible as four of the nine dots have dropped off. On the sign in figure 5b, several dots in the name Peston (or Preston) in Peston Lecture Theatre have fallen off as well. However, even without the dots falling off, the braille in figure 5b has a spelling mistake as it reads "preston lecture theatre" in braille. but "Peston Lecture Theatre" in print, which suggests the braille on the sign has not been proofread.

Other signs in the Graduate centre, where the P(r)eston Lecture Hall is also located, contain similar sloppy mistakes in braille. The navigation sign shown earlier (figure 3 on page 23) has several oddities, including usage




Figure 4: *A near impossible to find stairwell sign in Francis Bancroft; the braille is on the dark blue rectangle, which says "ground" in print and braille (image description for this image in Appendix B on page 48)*

of uncapitalised SEB (the building was constructed in 2015 and opened in 2018, while UEB was set as UK standard in 2011) and the usage of the ampersand. The lack of capitals is not only anachronistic, but also leads to some loss of information, as it is less clear that SEF (line 2) is an abbreviation in braille. Perhaps more troubling is the mistake in line 3; where room GC543 is mentioned again in braille, when it is not in print, making it unclear (in braille) if this room is to the left or the right.

The final line was mentioned earlier (in section 5.1.2); it is interesting in that it tried to convey information presented by symbols. However, the syntax of the sentence is strange and difficult to understand due to the mix of ampersands and commas. See the gloss 2 below[3] (note that the print translation does not appear on the sign):

[3]frustratingly, the typesetting software used does not include the dot 4 character, needed for the ampersand, in its braille font package, so these glosses include an embedded image, which might be slightly offset as the dimensions and placement were eyeballed by the author. It also means, for those who are reading this dissertation digitally, that selecting and copying the text in the glosses might not be possible.

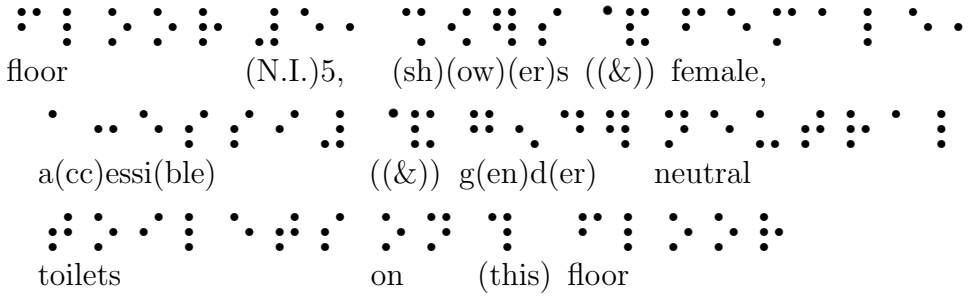



(a) *Damaged sign for men's toilet*




(b) *Peston (or Preston?) Lecture Theatre*

Figure 5: *Two damaged signs (image descriptions for these images in Appendix B on page 49)*

(2) 

floor (N.I.)5, (sh)(ow)(er)s ((&)) female,

a(cc)essi(ble) ((&)) g(en)d(er) neutral

toilets on (this) floor

floor 5, showers & female, accessible & gender neutral toilets on this floor

The use of the ampersand in that line, which has no print equivalent, is especially odd as the ampersand symbol in braille uses two cells; the dot 4 prefix and then the existing contraction *and*. It seems needlessly confusing to use the ampersand when braille already has a single cell character that has the exact same meaning; the contraction "and" on its own. It strongly suggests this text was typed out in print and machine translated without any proofreading. The punctuation also erroneously makes it seem like "floor 5, showers & female" should be read as a list, which makes the sentence difficult to parse. Unfortunately, this sign is not an exception; similar mistakes and odd syntax can be found on signs on nearly all floors of the Graduate Centre.

## 5.2 Interviews

To ensure anonymity, codes rather than names are used to refer to the participants. The participants were recruited from two different categories:

- **category A:** those with knowledge about braille sign production.
- **category B:** users of braille.

Codes were chosen to make it clear which category they came from: A1 is the participant from the first category (ie. braille sign expert), while B2, B3, B4, and B5 are braille users.

### *5.2.1 Attitudes towards braille*

As most participants were recruited through a forum for braille enthusiasts, it is unsurprising that all participants held overwhelmingly positive attitudes towards braille and all braille users mentioned braille as important in various aspects of their life. Work, social life, computer programming, reading to children, reading for pleasure, medication use, way finding, and organising personal and business finances were mentioned as areas in life where braille is important. All braille users credit braille with helping them access education, with one participant even arguing braille shaped their language use and vocabulary:

> **participant B2:** I was born blind, so I've never seen anything, but if you think about it, everything I perceive comes back to words. Like, you can't describe a beautiful sunset or a beautiful woman without using words; it all comes back to language for me. I tell people that when I was a kid, I used to play the old text adventure games, you know; you type commands into a computer and you get a sentence or two back. And literally, the mental pictures that those games conjured in my mind, even through a comparatively short piece of text, were vivid and astonishingly lifelike, or at least lifelike to my own sense of understanding, because all I've ever had was words and the power of a good vocabulary and the ability to understand and express yourself in language. In rich language.

The only negative attitudes that were mentioned involved lack of access in the past; the unavailability of books or reading materials (compared to print) or the absence of technical braille codes to access certain domains of knowledge. However, when participants mentioned these, they would hasten to add that new developments had reduced or taken away these past hurdles. Refreshable braille displays and new digital braille formats have increased the range and affordability of available reading materials in braille. And the recent development of a braille code for the International Phonetic Alphabet, by Englebretson (2008), was mentioned as an example of the continual development of braille; the lack of such code had in the past stopped one participant from taking linguistic courses at university, so this development was welcomed.

When the word "community" came up in any of the interviews, it was to indicate the community of people who are blind or have visual impairments. Various subsets of this community were mentioned; differences between those navigating with a guide dog and those using a white cane, as well as the difference between those who were blind since birth and those who lost sight later in life, came up in multiple interviews. It suggested that while there was a sense of community of blind and visual impaired people, there was also acknowledgement that it was a diverse and varied community.

Three of the participants mentioned how only a small subset of people who are blind or visually impaired use braille, but one participant also noted that there might be more users of braille than often assumed as people are sometimes reluctant to call themselves braille readers:

> **participant B5:** So you'll find that because you can write braille using the touch screen on your iPhone, there are many, many blind people who don't... Who would say, "I'm not a braille reader, blah, blah, blah, blah." But actually, it's far quicker than trying to type using the qwerty keyboard on the iPhone, and so they will write in braille screen input. And that's really an interesting thing, because you find that actually they're not big readers at all, but they write in braille every single day, and so there's that side of it too. The reading and the writing can be quite separate for blind people.

It did seem that all braille users did see braille as representing their community at least to some extent. Participant B2 mentioned that they thought

that "what braille truly means if done properly is literacy and inclusion", a sentiment that was echoed by participant B4 when discussing navigating places they had not been to before:

> **participant B4:** I, on purpose as well, look for braille. Every time I see it, I get a big boost because I feel included. I don't feel excluded. I feel welcomed, whether that's a hotel, a train, a university campus. (...)[4] And I think that's really important to me.

Another participant did recognise the representative function of braille, but cautioned about this function possibly opening up the existence of braille to political debate:

> **interviewer:** Is important to have braille visible in buildings and things? So as to remind people that it exists?
> **participant B3:** It may well be. I mean, it's a very good point, but, I mean, that that's stepping stepping away from the actual usability. It to some extent... it's a bit confrontational, because you might get people wandering about who say, "Hang on a minute, they've put that braille up there just to annoy me, so that I think they're very inclusive, and I think that's a total waste of time."

In sum, braille was seen as providing access to various domains of knowledge and aspects of life. The community of blind and visually impaired people was described as a diverse one and while braille was seen to be a visible representation of the community, participants felt differently about the importance of that representation.

### *5.2.2 Different codes*

All braille users (B2-B5) had learned braille in SEB, but now used UEB at least in some aspects of their life. There was a range in how much they adopted UEB; some accepting it fully as the new official code to be used for everything, others seeing UEB as suitable for certain formal settings, but

[4] the ellipses within parentheses indicates a short segment was left out of the transcript as the interview was briefly interrupted by external events

preferring SEB (or even other codes) for other uses. Several participants had experience with specialised codes such as British computer braille and two participants mentioned that they used a mix of codes and non-standard shorthands for personal note taking. Capital letters were not used in old SEB and were optional (but common) in later versions of SEB. In addition, SEB did have indicators for emphasis, but did not distinguish between the various forms (underline, bold, italics, etc.). However, UEB follows all the same conventions as print when it comes to capitalisation and emphasis. Two participants shared some points of dissatisfaction about this change:

> **participant B3:** I've been dragged kicking and screaming into UEB, though I... I think it was a real waste of money. I prefer SEB. I mean, you probably wouldn't notice the difference, but there are crucial differences between Standard English Braille as it used to be and UEB now, in that there's a huge number of signs that didn't used to exist in Standard English Braille. That you tended to have, you know, one symbol, which would mean the following text is either italicised or bold or whatever. And you don't, in most cases, you don't need to know which. Whereas UEB is much more concerned with telling you what kind of, you know, what kind of emphasis you're putting on the following characters.

A different participant noted that UEB had its uses, but was not useful in all contexts:

> **participant B4:** the UEB has got all the signs, for bold, for italics, and all that font, that font stuff. You don't want font stuff on signage. You just actually you want... the message is more important than the font and all that kind of information. So, that's why I don't like UEB.

By contrast, other participants did see the value of UEB following print closely. Participants B2 and B5 made aspirational arguments in that standardisation with print could lead to more information parity in future, but they also made practical arguments about the standardisations facilitating things like wifi passwords (which can require capitalisation and/or symbols not present in SEB), computer programming, and legal documents. It should be noted that while participants had very different feelings and opinions on

SEB and UEB, they all seemed to agree that different codes were useful in different settings. Even those who expressed a dislike towards UEB said they used it in formal settings and saw the value of standardisation in some settings. One participant compared it to code switching in spoken language, where each code has its value within certain contexts.

Participant A1, who is an expert on accessible signage, stressed that uncontracted (grade I) braille was best for signage, as it meant everybody who knows braille can then access the information. In their words; "some grade two readers might grumble, but if I had to choose between annoying some or excluding many, I'd choose to annoy some grade two readers." The braille users (B2-B5) all seemed to agree with this sentiment and would put up with uncontracted braille in those contexts. One participant noted the importance especially as contractions are different in different languages:

> **participant B5:** In general, grade one braille drives me mad, because it's slower. Once you read contracted braille, it's slow. But I think in the case of signage, it's really important because also, you know, if I, let's say, I go to Sweden. It's a good example, because I don't speak any Swedish whatsoever, and there is a sign in grade one, I can put that into, like, Google Translate. I can type that exact sign in, right? And then get the translation, as a sighted person might do. But if it's in grade two, I can't do that because don't actually know what it's saying to be able to translate it.

In sum, while there seemed to be agreement on the use cases for contracted and uncontracted braille, there was a split in opinions on UEB and SEB. This sections can perhaps be best summed up in the words of participant B5: "I think people don't realise there's so much politics in braille, that it is so politically fraught."

### *5.2.3 (Dis)parity with print*

All participants mentioned the financial cost of braille at various points in the interview. Sometimes the cost of braille was made very explicit, with one participant saying they did not want the cost of braille signs to hamper other important educational expenditure. Whenever criticisms or frustrations about braille or braille signage were mentioned, these were usually followed up by reassurances that the braille that was present was appreciated.

For example, after voicing frustration about outdated signs in public areas and how changing station signs had been added to toilets in print but not braille, participant B2 said (emphasis added to highlight the reassurance):

> **participant B2:** I used to carry [my daughter][5] around in a sling like a harness when she was much younger and being able to find changing facilities was always tricky because they were never signposted in braille and it's even hard to read a braille sign when you've got a baby sticking out of your chest as well; little arms like a Tyrannosaurus that can't quite reach the braille, because there's a baby in the way. **But yeah it wouldn't bother me that the signs hadn't been updated because I'd be grateful because people had bothered to put them up at all**

And participant B3, after discussing the confusion caused by inconsistency of codes and grades used on public signs, quickly added "but basically any braille is better than no braille. That's the main point." The same participant was very explicit about being wary of being too critical about braille in public as they feared it might lead to political pressures taking away rights already obtained, like braille on all medicine packaging in the UK (achievement of that right was brought up positively by three participants independently). Participant B2 was aware of this tendency not to be too critical of the status of braille and brought it up later in the interview when discussing lack of maintenance or updating of braille signs:

> **participant B2:** I think in Braille we settle for less, we settle for different, because people have made some effort and that doesn't sit right with me sometimes. I think if you're going to bother changing something, change it for everybody, you know?

Another example of the explicit awareness of the difference in attitude towards print and braille came from B4:

> **Participant B4:** I would prefer [print and braille to be separated on signs] because it's easier to find. I prefer the signs when you've got like this half is print and that half is braille, or vice versa,

[5] the contents in the square brackets within quotes have been added by the author for clarity; in this case to replace a pronoun with its antecedent

and it's sometimes nice to have the braille at the top.
**interviewer:** How so?
**Participant B4:** because normally the print is privileged by being the first thing and the braille is the second thought. So, isn't it nice to have it the other way round?

In addition to the awareness expressed here that print is privileged spatially, the separating of braille and print was a points brought up by participant A1 as well. Alternating print and braille, rather than separating them, might look visually appealing, but makes it harder to locate the braille and provides a perverse incentive to use contractions in order to fit braille within the layout.

### *5.2.4 Braille signage in general*

The interviewed braille users had different methods of navigation, with one saying they preferred to be led around and thus rarely used braille signs. However, all participants agreed braille signage could be useful (to some or in some contexts) for independent navigation. The omission of braille in the accessibility guides of QMUL did not come as a surprise to the brille users, with one placing it in the context of a wider problem:

> **Participant B5:** I think there is very little consideration that totally blind people navigate independently, and I do think there are a lot of prevailing assumptions that underscore why information that's useful for totally blind people isn't in access information [guides], because often there is a perception—even within the wider disability movement—that we will have someone with us, and it is interesting because yeah, even, you know, information on how to get to buildings; it's all very geared towards sighted people and operating in a very sighted way.

In three separate interviews, the selective use of braille signs even in places that had them was criticised, as in effect a choice had been made on what information they should have access to.

> **Interviewer:** Some buildings [at QMUL] actually do list out all the all the doors, so they'll say, you know, lecture hall so and so...

> **Participant B4:** Yeah, that's good. That's cool if they've got that. Yeah, that, I would have really found that useful, especially when you first start at uni and you kind of can get to the corridor, but especially if it's, like, the fourth or the fifth door and there's seven of them. How many have I counted? Have I lost count? Am I going to put my nose in the wrong one and embarrass myself yet again?

And similarly:

> **participant B5:** You know, and there are signs on doors for sighted readers basically saying, "Don't open this door", and then there isn't for braille readers. And it's like, well, I'm probably gonna... I, more than anyone, am probably gonna open this door to be like, "what's in here?", because, you know, as a blind person, you really do have to explore by opening doors and going in and "oh, excuse me, what's this?" when you're learning your way around. So, I think there's a real argument to have those signs if you don't want us going in somewhere.

In addition to the information deprivation due to lack of signs, placement of the signs was an often mentioned issue. Three participants said they sometimes wondered how many braille signs are out there that they were not able to locate. Lack of maintenance and damaged signs also came up a few times and was a source of frustration.

### *5.2.5 Braille signs at QMUL*

None of the interviews took place at QMUL, but the interviewer had brailled out some examples of signs and described the situation to all participants. The mix of codes and mistakes on signs at QMUL, as far as the interviewer presented these, were usually not seen as giant hurdles, but it should be noted that all braille users were very proficient braille users and familiar with both UEB and SEB. Participant A1, the accessible sign expert, was more explicit in voicing frustration with bad braille signage. When the interviewer described the signage at QMUL, participant A1 indicated that they could make an "educated guess" at which companies were used to produce the signage. Participant A1 suggested companies producing braille signs were

wilfully resisting improvement by not letting anyone proofread the signs and only showing placeholder text in design plans.

All braille users (B2-B5) mentioned that most of the toilets signs described to them do not actually say "toilets"; they simply indicate gender or accessibility, but presume that people would know it is a toilet from other information, which is not necessarily the case. Especially the toilets in the Graduate Centre, which read "for all" and "accessible" were seen as confusing as these do not explain they are toilets.

The signs in the Francis Bancroft building that indicate gender in print but not in braille (see figure 2 on page 20 for an example) are obviously missing information in braille. Participants said they would either assume these toilets are gender neutral or would not use them at all as they were unsure.

The navigation sign in the Graduate Centre (see figure 3 on page 23) was seen as equally confusing and two participants indicated they would be wary of using any facilities in that building at all.

Participant A1 mentioned that more than just marking toilets it would be useful to provide a tactile map of toilets and similar facilities, as these can be difficult to navigate on touch once inside. The desire to have more information on toilet and wash facilities was brought up by three of the braille users as well. For example:

> **Participant B3:** There's a lot of different technology in accessible toilets now, and sometimes it isn't clear at all how it works. Like, some of the, you know, the devices in an accessible loo really, you know, you wander past the towel... the dryer, and it goes off. They're not very good for blind people, really, because by the time you've found the tap, it's turned itself off.

Overall, the braille users seemed pretty pleased with the fact that there was braille and seemed to suggest that they would be able to cope with the variation and inaccuracies presented to them about QMUL braille signage, but stressed that they were experienced (English) braille users and that others might find the signs more confusing.

# 6 Discussion

The two objectives of this dissertation (see section 1.2) were to gauge the applicability of linguistic landscape theories to the tactile landscape and to learn some lessons about braille signage the QMUL campuses. The results will be discussed with these objectives in mind, before some limitations will be discussed.

## 6.1 Applicability of theories

The rationale of this study was that braille could be seen as part of the linguistic landscape. Braille is a system with variation, with several cultural dimensions and a rich history (see section 3). Much of the literature reviewed in this dissertation was concerned with how language can represent speech communities, which is tied to the informational function of linguistic landscapes. This provoked the question of what kind of community is represented by braille users.

Virtually all braille users are members of the blind and visually impairment community. Reliable data on how many in this community use braille is lacking. While it is often estimated to be a small subset, one participant in this study pointed out that many people might be using braille even if they would not call themselves braille users, making existing estimates even more uncertain. Using the model of nested communities seems a sensible approach, not only because of the intersection of braille users and the community of blind and visually impaired people, but also because the latter community is a diverse one.

Applying Bourdieusian theories, which frame the language as an integral part of systems of power where one (group) dominates others, adds a dimension that might help explain some of the patterns found in interviews. In this framework, symbolic violence keeps power relations in place. And example of this was the fact that the financial cost of braille was brought up regularly, with participants being very aware of the resources needed to produce braille signs. Making such resource arguments about print signs would seem nonsensical, which mirrors the power relations described by Bourdieu where fewer resources and aspirations are provided to non-dominant languages (or writing system, as the case may be). This is kept in place by the doxa, or accepted natural order and permissible discourse. The unspoken underlying assumption to much of the attitudes seemed to be that print is the ever

present standard, while braille has to be granted by some authority in order to be present.

Signage in the Graduate Centre at QMUL did seem to be driven by an ideology of parallel parallel text bilingualism, which posits languages to be equal and parallel, with signs having alternating print and braille. However, participant B4, who pointed out that print is privileged even in its physical placement (see page 32), echoed criticisms of parallel text bilingualism made by Coupland (2010) about the impossibility of having languages be truly equal. This parallel text bilingualism may be part of the reason the navigation signs alternate text and print, while acknowledging the two are separate medium with separate functions might mean choosing to put them on separate signs. Moreover, the multitude of mistakes and confusing syntax on the signs, strongly suggest these were never written or proofread by a human. This points to what Bourdieu called a strategy of condescension, aimed at reproducing fields of power rather than at communicating earnestly; "by temporarily but ostentatiously abdicating his dominant position in order to 'reach down' to his interlocutor, the dominant profits from this relation of domination, which continues to exist, by denying it" (Bourdieu & Wacquant, 1992, 143).

In addition, the social heteroglossia as described by Bakhtin is clearly present in braille too, with unifying forces aiming for standardisation pulling against stratifying forces. The ICEB, who in Bourdieusan terms would be the *minister* of braille users, aimed not just for standardisation between braille codes, but also for standardisation with print. However, as the criticisms by several respondents show, there is a desire to make it clear that braille is its own independent system; a force perhaps not too dissimilar to the one Saville-Troike (2003) described driving the development of Cherokee syllabary. In this way UEB represents a Bakhtin centripetal force these opposes forces that drive braille away from print and from a unitary standard.

### 6.2 Lessons from the case study

From a pragmatics standpoint, there were some troubling signs. For example, the one that says only "Toilet" in braille (see figure 2 on page 20); this seems to have violated the quantity maxim ("give as much information as required"). If someone reading the signs assumes the cooperation principle is still in effect, they might assume no more information can be given, therefore the toilets must be non-gendered. As this is a case of incorrectly generated

implicature, it seems the maxim of quality is not flouted, but rather infringed upon; it seems evident that the linguistic performance of whoever made these signs is not adequate. However, in the interviews with the braille users, only some indicated they thought this implicature was generated, while others were more doubtful and said they would not use the toilet at all as they were unsure. This suggests these participants did not assume the cooperative principle was still in effect (ie. they did not think whoever put up the sign was generally cooperative). One thing to note about implicature is that it can easily be taken away by adding information, in this case by including the gender designation in braille too.

The Graduate Centre was an interesting building in that it had a lot of braille, including navigation signs and names of lecture halls, but he multitude of mistakes and confusing syntax suggests this was machine generated text that was not proofread. Again, participants (including A1, the accessible sign expert) seemed to readily accept that this was a case of imperfect linguistic performance, suggesting they were not assuming the producer was operating cooperatively.

The other building to highlight is the Students' Union Hub, as it is the only building that labelled doors that were not necessarily meant for the public (e.g. custodial storage rooms). While the Sign Design Guide, parts of which seem to have been followed throughout the QMUL campus, does limit the necessity to doors "where the public have access", participants made it clear that full information parity is desirable; not only to take away negative assumptions (about what blind and visually impaired people can and cannot know or do), but also because it is directly practical for navigation to know which doors one should not enter.

### 6.3 Limitations and future research

As this was an explorative study based on qualitative data, only a small number of participants was included. Furthermore, as all braille users who participants were recruited through a forum for braille enthusiast, it is not clear if the opinions and conclusions would hold for all braille users. Further, quantitative, research would be beneficial also to map out how many people actually use braille and in what manner, as that seems to be unclear at present.

Finally, a note of consideration for further research on participation consent: For this dissertation, electronical signatures were used on consent forms,

to allow participants to use screen readers or other electronic accessibility technology. However, signing, even electronically, is an inherently visual medium. While all participants signed, one noted they would have much preferred the option to submit a typed statement rather than a signature.

## 7 Conclusion

The main research question was about the suitability of linguistic landscape frameworks to analyse the variation of braille signs around QMUL campuses. Several of the theories did prove useful, even if braille users are not a separate language community, they may be part of a speech community. The variation in signs on campus was not just in the information provided, but also in the codes used. From interviews it became clear that many ideological forces drive the choice for one braille code over another. Bourdieusan theories on fields of power and the Bakhtin's theory of social heteroglossia can contribute to the understanding of the variation of braille and its relation to print.

As the case study took place at the campus of QMUL, a secondary research objective was to learn lessons that might improve the tactile landscape at the university. In the interviews, many suggestions were given on how to improve accessibility at Queen Mary; most of these related to braille signage, but there were also some more general accessiblity suggestions. A summary of these suggestions will be provided in Appendix A (page 44), the author plans to present these suggestions to both the student council and the Dyslexia and Disability Service of QMUL.

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## A Recommendation regarding braille at QMUL

### Background

Braille is a tactile writing system that is primarily used by people who are blind or visually impaired. There are several different braille codes, in the same way that there are many different print scripts to express language. Of note is that in English braille, there are two grades:

- grade I uses characters to represent letters and some punctuation marks, much like in print.
- grade II uses various contractions to represent words or common patterns in English.

Reading in grade II can be much faster, but requires learning the contractions (which are specific to English). All braille users who can read grade II are also able to read grade I, so grade I is more widely accessible.

### Situation at Queen Mary

Of the five campuses of Queen Mary, only the Mile End campus seems to have any braille signage at all. Within the Mile End campus there is little consistency; there is great variation between buildings (and sometimes within buildings) on how many braille signs there are, what kind of information is given, and what kind of codes are used. The table below gives a brief overview of the type of braille signs that can be found on campus:

It should also be noted that the kind of braille used differs greatly; grade I and grade II are used seemingly at random and most buildings use an outdated version of braille that newer braille users would not be familiar with.

The signs in the Graduate Centre are shockingly bad. The building opened in 2018, but uses an outdated version of braille. Even worse is that nearly all signs are rife with spelling mistakes or very odd syntax seemingly stemming from (bad) machine translation. Navigation signs point braille readers in the wrong direction and lecture hall names are misspelled.

Table 4: Overview of braille signage on the Mile End campus

| **building** | **nav.** | **doors** | **stairs** | **lifts** | **floors** | **toilets** | **safety** |
|---|---|---|---|---|---|---|---|
| ArtsOne | No | GF only | Yes | N/A | No | GF only | No |
| ArtsTwo | No | No | No | Yes | No | Yes | No |
| Francis Bancroft | No | No | Mostly | No | No | Some | Yes |
| G.O. Jones | No | No | No | No | No | No | Yes |
| Graduate Centre | Yes | Yes | Yes | No | Yes | Yes | No |
| iQ East Court | No | No | No | No | No | No | No |
| Joseph Priestley | No | No | No | No | No | No | No |
| Library | No | No | No | No | No | No | No |
| Octagon | No | No | Mostly | N/A | No | Mostly | Yes |
| Queens' building | No | No | Yes | N/A | No | No | No |
| Students' Union Hub | No | Yes | No | Yes | No | Yes | No |

*nav. = navigation*

*GF = Ground Floor*

**Recommendations**

In my dissertation I interviewed an expert on accessible signage as well as four braille users. Below is a brief summary of some of the recommendations based on the interview:

- Consistency in placement of braille signs is important so braille users can find them. While many signs at QMUL are consistently place (same heigh and distance from the doors), there is a lot of inconsistency in the Francis Bancroft building. In addition, in ArtsOne some of the signs are on doors that open inwards, meaning the door might hit you in the face if someone opens it while you try to read the braille.

- Maintenance is important too; there are quite a lot of damaged braille signs (mainly in Francis Bancroft) that are no longer legible.

- Several buildings have online accessibility guides, but none of them

mention braille. All participants I spoke to said that is a missed opportunity; it would be helpful for people to know the braille signs exist and where to find them.

- All participants agreed that grade I is preferable for signs where possible, as more people would be able to read it, including international students who might not know the English contractions.
- Almost all signs have print and braille together and are designed to be visually appealing, which might explain the use of grade II. It can be helpful to separate the two on different signs so that braille can be the right size/height without worrying about impeding on the print.
- All participants highlighted the potential difficulty of operating toilets as a blind person, especially when there are a lot of automated things (e.g. hand dryers or taps with motion sensors); braille instructions or even a tactile maps of the toilets would be useful.
- Tactile maps in general are considered useful and the RNIB has many examples on how these can be done. These could either be permanent signs/boards somewhere near the campus entrance, or handheld tactile maps that can be given to visitors on request.

Finally, my main recommendation would be to involve an accessibility expert and/or braille user when future decisions on braille signage are made. The current situation strongly suggests that at least in some buildings, the braille was placed as a tick box exercise without really considering the end users.

## B Image descriptions

### Figure 1

Figure 1 on page 8 shows an Euler diagram of (partially) overlapping circles labelled A, B, C, and D. Circles A, C, and D all have a part that is not overlapping with any other circle, while circle B is completely enclosed within circle C. Circle A and circle D intersect with circle B, circle C, and each other, creating a total of 8 different overlapping areas:

- A & C
- A & D
- B & C
- C & D
- A, C & D
- A, B & C
- B, C & D
- A, B, C & D

### Figure 2

Figure 2 on 20 shows a close up picture of a toilet sign on a wooden door. The sign has two parts; the top half is grey and has white letters reading "Toilet" in the centre. In the bottom left of this top half there is a semicircular notch followed by braille also reading "Toilet" (with a capital T). The bottom part of the sign looks older, is brass coloured with black letters, and reads "Ladies" in print only.

### Figure 3

Figure 3 on 23 shows a rectangular sign made up of five strips. These are all brown with white letters, symbols, and dots. There is a big white number 5 in the top left. The contents of each line, separated by print, braille, and symbols, are outlined in table 5 on the next page:

Table 5: Symbols, print, and braille on Graduate Centre floor 5 navigation sign

| | |
|---|---|
| line 1 symbols | two arrows pointing left (one next to the print and one next to the braille), a half male and half female stick figure, a wheelchair user symbol, a male stick figure, a symbolic depiction of a shower head. |
| line 1 print | Academic offices GC501-GC516 |
| line 1 braille | academic offices gc501—gc516 |
| line 2 symbols | two arrows pointing left (one next to the print and one next to the braille) |
| line 2 print | SEF Meeting Room GC543 |
| line 2 braille | sef meeting room gc543 |
| line 3 symbols | two arrows pointing right (one next to the print and one next to the braille), a half male and half female stick figure, a wheelchair user symbol |
| line 3 print | Academic Offices GC517 - GC525 & GC542 |
| line 3 braille | academic offices gc517—gc525 & gc542–gc543 |
| line 4 symbols | two arrows pointing right (one next to the print and one next to the braille) |
| line 4 print | Postgraduate Researchers GC526 |
| line 4 braille | postgraduate researchers gc526 |
| line 5 (braille only) | floor 5, showers & female, accessible & gender neutral toilets on this floor |

**Figure 4**

Figure 4 on 25 shows a hallway. On the left of the picture is a grey door, then on a wall next to (and perpendicular to) this door we can see from left to right:

1. a green fire alarm box (with arrows pointing to the centre for the button for the fire alarm)

2. an unlabelled white pipe running vertically (ie. from the floor to the ceiling).

3. a white pipe running vertically, with a dark red sign saying "heating flow" in print inside an arrow pointing down.

4. a white pipe running vertically, with a dark red sign saying "heating flow" in print inside an arrow pointing up.

5. a white box near the floow that encases these hot water pipes and sticks out further to the right

6. a small plasic box with a small dome in the middle; looks like a light censor

7. some old (ie. disused) electricity cables running down from the ceiling that stop halfway down the wall with a hole where some electrical outlet presumably used to be.

8. a very thick metal pipe running in an upside down L-shape

9. a very large painted (ie. not tactile) letter G in blue

10. a radiator about half a metre high and 1.5 metres wide with the bottom just above the floor

11. a blue rectangular sign, about a meter above the radiator, with the word "ground" in white print. While it is not clear from the photo, there is also braille (in the same colour as the background, so not easily visible) on this sign.

There is also a chair positioned in front of the radiator right below the sign that contains braille.

**Figure 5**

Figure 5 on 26 has two parts; 5a and 5b.

The sign in figure 5a says "men" in print and would at one time have read the same in grade I braille, but dor 4 in the first cell, dot 1 in the second cell, and dots 1 and 4 in the third cell have falled off (a little residue remains visible). In UEB, the remaining dots would read "k*".

In figure 5b, It says “GCG10” in very big print letters at the top and then in slightly smaller (but still about three times the height of the braille text) says “Peston Lecture Theatre”. At the bottom it has two lines of (contracted) SEB braille. The first line reads “gcg10”, the second line would in the past have read “preston lecture theatre”, but dot 3 of the fourth cell and dot 1 of the fifth cell have fallen off (the holes are still visible). In UEB, the remaining dots would read “pre∼n lecture theatre”.