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Theorising the Deaf Body: Using Lefebvre and Bourdieu to Understand Deaf Spatial Experience

Abstract.

In the field of Deaf Geographies, one neglected area is that of the individual deaf body and how individual deaf bodies can produce deaf space in isolation from one another. Much of the work published in the field talks about collectively or socially produced deaf spaces through interaction between two or more deaf people. However, with deaf children increasingly being educated in mainstream schools with individual provisions, and the old social networks and institutions of deaf communities coming under threat by the closure of deaf clubs and changing work practices, more research on the way in which individuals can produce their own deaf spaces and navigate those spaces is needed. In this paper, I outline two possible theoretical approaches, that of Lefebvre's productive gestures to produce social space, and Bourdieu's habitus, capital and hexis. I suggest that these theories can be productively utilised to better understand the individual basis of the production of deaf spaces.

Key words.

Deaf, Lefebvre, Bourdieu, body, habitus, hexis, space

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Introduction.

This paper examines two approaches to theorising the deaf body in Deaf Geographies. While there has been some discussion of the ontology of deaf people¹ there has been little attention paid to how the bodily experiences of deaf people, mediated by their sensory orientation, informs the creation of their social spaces (although recent exceptions are Cue et al.²; Graham and Tobin³). Most theories approach the subject of deaf space from a macro scale and have left the individual body relatively untheorized. This paper fills this gap in the literature through exploring two complementary theoretical frameworks. These are Bourdieu's habitus and capital⁴ and Lefebvre's gestural production of space⁵. An integration of those approaches has previously been suggested⁶, but this paper explores the intersection of Bourdieu and Lefebvre in relation to Deaf Geographies and deaf bodies. In this paper I focus on the body as a site at which the physical, social, cultural and spatial intersect, an 'embodied space' at which "human experience and consciousness take on material and spatial form"⁷ and at which the body can act as a protagonist/antagonist in its relationships to space and others⁸.

It must be emphasized at the beginning of this article that I am writing about sighted, signing deaf people, of which I am one. I do not pretend to write on behalf of DeafBlind people, who have their own experts on their own spaces⁹. I also do not pretend to write on behalf of signing hearing people (such as CODA whose first language and culture is deaf). Again, they have their own experts on their own spaces¹⁰. I write here about the visucentric nature of sighted deaf bodies (while acknowledging and respecting that different deaf bodies have different experiences based on disability, gender, sex, race, ethnicity and so on), and how the visual can mediate deaf people's bodily experience of the

world. The deaf sensory experience also includes the tactile and embodied elements of deaf people's lives. While it is not my intention to explore these in this article, it is worth contemplating how the approaches and theories explored below could be expanded to explore these aspects of the deaf spatial experience.

Many geographers have called for the field of cultural geographies to focus on 'more-than-White/Anglo geographies'¹¹. We could add 'more than abled/hearing geographies' as an area which is currently under explored in the field. While exploring these geographies, we must avoid the construction of 'static categories' of what it means to be deaf, by ensuring intimate connections to 'space and place... to the specific values and contexts of conduct... embodied experiences... and the temporal/spatial fluidity' of identities¹². Exploring the spaces of signing deaf people is particularly important because these spaces are not just produced through different sensory experiences, but also from different linguistic and cultural roots. Using an approach, like the one suggested in this paper, which is sensitive to all these aspects of the deaf experience avoids the creation of such static categories of what deaf space can mean. Widening the scope of the field to include those with different sensory experiences of the world is not just a political stance to make the field more inclusive, but also a sound theoretical move, as it affords different perspectives, challenging perspectives, on current understandings of bodies and/in space.

The foci of Deaf Geographies so far.

The formation of the field of Deaf Geographies can be traced to the work of a small number of people in the early 2000s, including Ember Kelly, Gill Valentine, Tracy Skelton, and Mike Gulliver. Their ideas developed in different directions, but largely the issue of the deaf body was left untheorized, apart from initial engagement with embodiment and technology by Kelly¹³. Subsequent work which engaged with the body in various ways is discussed below.

Most work in the field has focused on larger scale instances of deaf space, such as interactions between deaf people, design of buildings and interactions with technology as a way of staying connected with wider deaf communities. A common theme in these approaches is that they do not look at individual deaf bodies, but concentrate on interactions between people, buildings and communities, and how these interactions create deaf space. It appears that very few see the creation of deaf space as an individual action, instead framing it as a collaborative effort (for an exception, see Robinson¹⁴).

Some researchers have engaged with the action of deaf bodies, both individually and collectively, in producing deaf spaces. For example, the investigation of deaf ontologies, micro geographies of linguistic and other spaces¹⁵ and an increasing openness to the biological experience of deaf bodies as non-hearing bodies¹⁶ rather than simply the carriers of deaf cultures and languages have all been the subject of investigation in recent years.

However, there is still very little work published in this area. This may be due to the struggle to establish deaf communities and cultures as viable academic concepts apart from the focus on lack or impairment led by the medical model of deafness. However, following the geographical turn in Deaf Studies in the 2000s to 2010s¹⁷, and the concurrent focus on Deaf Gain over hearing loss¹⁸ there has been a move to recognizing the physicality of the deaf body in a way which is not rooted in the medical model, but sees the deaf experience as qualitatively different rather than lesser than the hearing experience.

The movement within Deaf Geographies and adjacent fields to recognise the corporality of the deaf body shows that it is necessary to theorise more concretely about how deaf spaces are produced. In

the following section, I have examined two different theories to see how they enable us to focus on the individual body and the production of space through and by these bodies.

Theoretical approaches.

Lefebvre.

Lefebvre's work (particularly that found in *The Production of Space*, henceforth *POS*), has been utilised in the field of Deaf Geographies, most notably by Gulliver¹⁹, but see also Kusters²⁰; Edwards²¹; Rosen²². However, these works have focused on the spatial triad Lefebvre postulated in *POS*, that of perceived, conceived and lived space and on his concept of rhythmanalysis. While these are important interventions and analyses of how space is produced in a collective, they stop short of analysing spatial production on an individual scale.

Much of Lefebvre's own work focuses on the macro scale of space, the scale of urban areas, of buildings of the sacred and profane (for example, *POS*; *State, Space, World*²³; *The Urban Revolution*²⁴). Even his smaller scale works such as *Rhythmanalysis*²⁵ rarely took a truly individual approach to the production of space, preferring to take an overview of the rhythms of everyday life, the interaction of the milieu, to seek patterns and predictabilities in the quotidian.

However, looking deeper at *POS*, we see a clear focus on the individual body in the production of social spaces. Pursuing this focus, I suggest, could provide a novel use of his theory to build on what has already been achieved by Lefebvrian approaches in Deaf Geographies. Lefebvre claims that when examining the production of social space, an argument can be made to give precedence to 'organizing gestures' over language²⁶, and that "bodies themselves generate spaces, which are produced by and for their gestures"²⁷. This should not be surprising due to Lefebvre's Marxist commitments, which emphasise the individual, the worker, in producing space as a social product. Lefebvre continually brings the focus of his analysis in *POS* back to the individual, back to the materiality of spatial experience, back to the individual acts of production that such space requires and presupposes. These organising gestures may well be performed in common with other individuals, but the fact remains that without individuals each performing these productive gestures, space cannot be produced. Social space can therefore be seen as a product of individual repetitive acts and gestures²⁸. It is these gestures, or uses of the body, upon which I focus.

Lefebvre argues that, as with any product, the production of space occurs through the modification of raw material through the application of appropriate knowledge, technical procedures, effort and repeated gestures. This process of production is usually hidden or obscured²⁹. In fact, it is often the aim of such processes of production that the procedure followed is concealed so that the end product is misrecognised as a naturally occurring phenomena. This misrecognition is a key factor in the assumption of many people that the spaces and places in which we live are naturally occurring, and those who do not 'fit' or are not able to fully access them, are inadequate or insufficient as humans or citizens. Instead, I show that this lack of fit is due to different gestures of production producing different social spaces for different social needs.

Lefebvre argues that gesture is not just the movement of the limbs³⁰ but also the movement of the entire body³¹. Indeed, he writes that a whole-body movement such as turning around can be considered to be a gesture in that it modifies a person's orientation and points of reference for a specific reason. Spatial indicators (high, low, left, right) are also derived from the body in action, so whole-body movements and orientations can be gestures which, if repeated, produce specific forms of social space.

Such movements and orientations are vital for creating deaf spaces. Deaf people, even if they cannot modify their physical surroundings, will always attempt to modify their interaction with those surroundings to make them more accessible. These interactions may be bodily orientations through sitting with their backs to a wall in an area with a clear line of sight around the room so that they are not surprised by unheard people approaching from behind³², or orienting themselves so they are not looking directly at a light source. Smaller scale gestures which aim to make environments accessible would include removing items which obscure line of sight (such as flowers or menus on a table in a restaurant) or focusing on visual rather than auditory information when understanding the environment³³. Even a simple body movement or re-orientation to improve line of sight could be considered a gesture that produces a deaf space for the individual concerned³⁴. All of these are actions which deaf people do every day to make hearing environments (such as schools or workplaces) more accessible. These actions may well be the result of instinctive, affectual interactions with the world, rather than deliberate choices³⁵. However, they are the actions of individual bodies which produce specific types of space.

It can be seen from the above that individual actions do produce space. Micro orientations of the body to take in more visual information, or to make one's own gestures or language productions more visible to others are gestures which produce a certain kind of space. This allows for deaf space to be produced by individuals, rather than only through interaction with one another. It does not require control over the design and construction of buildings, but rather attunement to one's own gestural production of space. These gestures are repeated innumerable times every day, with every visually orientated gesture creating and maintaining a body-centred deaf space that exists synchronously with the hearing space of the majority perception.

However, such gestures do not simply produce space in unstructured, unfettered ways. Bodies and gestures do not just produce space but are also constrained by it: "Space commands bodies, prescribing or proscribing gestures, routes and distances to be covered"³⁶. Lefebvre outlines this interaction between body and society as follows:

*Bodies (each body) and interbodily space may be pictured as possessed of specific assets – the materials (hereditary, objects) which serve as their starting point, and the matériel which they have available to them (behaviour patterns, conditioning – what are sometimes called stereotypes). For these bodies, the natural space and the abstract space which confront and surround them are in no way separable, as they may be from an analytic perspective... the accomplishment of gestures, for which this matériel is the prerequisite, further implies the existence of affiliations, of groups (family, tribe, village, city etc.) and of activity.*³⁷

Each body, and thus its gestures, is constrained by the social bonds between individuals and societies that exist in the social space of which the body is a co-producer.

Lefebvre connects the ideas of gesture with the more widely referenced passages relating to the threefold dialectic of space he outlines elsewhere in *POS*³⁸. He states that spatial practice (perceived space) presupposes the use of the body, the use of the hands, members, and sensory organs in the everyday perception of social space. This is a materialistic, bodily experience of space.

Representations of space (conceived space) presuppose a knowledge how bodies experience space and how this relates to what they do in space so that plans and rules can be created that formalize this relationship. Finally, lived space is described as a meeting of culture and the body, something

complex and 'peculiar'. Such a delineation of the relationship between the body and social space should make clear that Lefebvre's concept of space is very much based on individual, small scale gestures of production and how they interact to produce social space in all its complexity. Pre-existing work in Deaf Geographies which looks at larger scale deaf spaces through this lens could productively look more closely at the gestural, bodily underpinning of such spaces, underpinnings which are informed by the ontology of being in the world of deaf people, their visucentrism and their visual-spatial languages.

Lefebvre claims that "organized gestures, which is to say ritualized and codified gestures, are not simply performed in 'physical' space, in the space of bodies"³⁹, but instead have more complex social and cultural meanings associated with them. He later posits that "social relations, which are concrete abstractions, have no real existence save in and through space. Their underpinning is spatial"⁴⁰. On a possibly more practical level, Lefebvre, in *POS*, describes his spatial project as something that can shed light on such behaviours as how rooms are organised and how furniture is designed and used. Lefebvre aimed to understand how gestures, space and social forces interact. This approach could be a useful way of exploring the visucentrism of deaf people and how they interact with their environment. It could also point to ways in which deaf people produce their own space and how existing environments (such as schools or workplaces) could be better adapted to be accessible for deaf people.

Fekete⁴¹ explores gestures which produce social space in her exploration of American Sign Language (ASL) through a geographical lens. Fekete outlines the way in which ASL (and by extension, other signed languages) produce linguistic, communicative space through harnessing the body's movements. Lefebvre does, however, draw a distinction between language and gesture, although he asserts that gestures can contain meaning as much as language does, "as coded – and decodable – entities"⁴². Indeed, there is an interesting overlap between auditory gesture and spoken language when deaf people have been 'trained' to speak, as with Azy D'Etavigny a French deaf man born in 1730, who, rather than learning the spoken modality of French language, simply learned to recite strings of sounds upon prompting from his tutor. He was able to do this so well that the listener would praise his spoken French, not realising that he was simply producing sound that was meaningless for him in his own deaf space⁴³. This is an example of how different expectations and assumptions and indeed spaces can co-exist spatially and temporally.

Increasingly, linguists are exploring and understanding the overlap between gestures and languages and the interplay of signed and spoken languages and gesture⁴⁴. Fekete suggests that signed languages could be a starting point to explore in more depth how linguistic spaces are produced; Lefebvre's theory of the role of gesture in the production of social space could be one possible path to do so.

The importance of bodily orientation and gestures in creating a visual deaf space has been investigated by, for example, Sangalang⁴⁵ and Thoutenhoofd⁴⁶, both of whom examined how the position of the body in social space can create feelings of exposure and vulnerability⁴⁷. For example, positioning oneself to be able to survey one's surroundings can create a feeling of command or control over the social space⁴⁸, while orienting oneself so that there is a degree of control over who can see you can create feeling of privacy by⁴⁹. Studies of this sort have touched upon the rich potential of exploring the role of gesture in the creation of deaf space and hinted at productive ways in which Lefebvre can be applied.

Finally, there would be scope to expand investigation into contexts already explored using Lefebvre's spatial triad (for example, Gulliver⁵⁰). Lefebvre saw lived space as a meeting of culture and the body.

While Gulliver mentions the body in his juxtaposition of deaf and hearing bodies within a teaching space in a university, there is less attention paid to the behaviour and gestures of those bodies, behaviours and gestures that actually produce the contested deaf/hearing space that Gulliver investigated. More in-depth analysis of such bodily gesture and behaviour would give a greater understanding of how and why these social spaces are produced.

Finally, Lefebvre claims that to be recognised (by themselves or others) as subjects, groups or classes must “generate (or produce) a space”⁵¹. Without making a social impact in this way, group actions will “become mere signs, resolve themselves into abstract descriptions, or mutate into fantasies”. The production of such spaces cannot simply be examined at a macro, social scale. We must also pay attention to the body, how our bodily experiences orientate us to the world, and how individual bodies can produce social space:

*The enigma of the body – its secret, at once banal and profound – is its ability, beyond ‘subject’ and ‘object’ (and the philosophical distinction between them), to produce differences ‘unconsciously’ out of repetitions – out of gestures (linear) or rhythms (cyclical). In the misapprehended space of the body, a space that is both close by and distant, this paradoxical junction of repetitive and differential – this most basic form of ‘production’ is forever occurring.*⁵²

One possible challenge to using Lefebvre’s work in this way is that Lefebvre consistently criticised the visual as a source of knowledge about the world, or a being in the world. Deaf bodily gestures are visually mediated. They are visually motivated, such as the organising of furniture for visual access and sensory reach⁵³; they are visually inspired, such as the use of white gloves and signed language flags to mark out deaf space⁵⁴; they are visually interpreted, such as darkness or bright light acting as edges or borders of deaf space⁵⁵. How do we incorporate the visually mediated gestures of deaf bodies into our theory using Lefebvre’s analytical lens? Lefebvre claims that any knowledge which relies primarily on the visual is lacking, is incomplete:

Take images, for example: photographs, advertisements, films. Can images of this kind really be expected to expose errors concerning space? Hardly. Where there is error or illusion, the image is more likely to secrete it and reinforce it rather than reveal it...

*Images fragment; they are themselves fragments of space...*⁵⁶

*It is very important from the outset to stress the destructive (because reductive) effects of the predominance of the readable and visible, of the absolute priority accorded to the visual realm, which in turn implies the priority of reading and writing.*⁵⁷

These protestations against the prioritization or fetishization of vision and the visual over other forms of experience continue throughout *POS*. However, this does not preclude deaf people from emphasising their own visual experience. Lefebvre is railing against the way the visual has come to stand for the abstract, has become the ‘totality’ rather than simply moments of our experience of space. He claims that this prioritizing of vision gives us a partial understanding of space, and that other senses such as “smell, taste and touch have been almost completely annexed and absorbed by sight”⁵⁸.

However, the 'visual' that Lefebvre is protesting is not the deaf visual experience of space. The vision that deaf people rely on, that we utilise, is not abstract; it is not disconnected from the world. Visucentrism is visceral: not only visual but embodied and tactile, made so through the embodiment of self and others in the visual-spatial modality of signed languages. If Lefebvre had an appreciation of how signed languages are used, how meaning is created through embodying and physically manipulating concepts, he may not have claimed that visucentrism and visual languages were reductive. In fact, I suggest that this understanding of the deaf experience as something which is visual, embodied and tactile in nature is something with which Deaf Geographies, and Geography more widely, has yet to engage.

Lefebvre claims that:

*The restoration of the body means, first and foremost, the restoration of the sensory-sensual – of speech, of the voice, of smell, of hearing. In short, of the non-visual.*⁵⁹

We can re-frame this in a way which makes it inclusive of deaf people. The 'voice' of speech does not have to mean a speaking voice but could mean a signed voice; visucentrism is not only about the visible but also senses other than hearing. We must make a clear division between Lefebvre's reductive concept of 'vision' and the 'visual' and the visucentrism of the deaf experience. Lefebvre does not, of course, advocate the rejection of the visual, but rather the 'restoration' of the non-visual, the democratizing of the hierarchy of sensory experiences. Deaf people have less access to sound, less access to the spoken voice, so any talk of 'restoration' of such audiologically mediated spatial elements is problematic. That is not to say, however, that deaf people do not have any access to those aspects of spatial experience. The deaf artist Christine Sun Kim has confrontational and thought-provoking approaches to exploring how sound impinges on deaf worlds and spaces⁶⁰. It is not that we do not experience sound, but that we experience it in ways that are different to hearing people. Thus, Lefebvre's objections do not strike home.

Bourdieu.

Like Lefebvre, certain aspects of Bourdieu's work have been extensively used in wider academia, although not yet in great depth in the field of Deaf Geographies (although see Cue et al.⁶¹; Graham and Tobin⁶²). This may be due to the perception that Bourdieu, as a sociologist, may have little to say about the physicality of social experience and space. Indeed, his theoretical concepts are largely tied to social space rather than physical space. However, there are several of Bourdieu's so-called 'thinking tools' that can be utilized to explore and explain the bodily experience of deaf people. I believe that these ways of thinking about the body can complement the discussion of gesture as a means of producing space above.

One of Bourdieu's better-known concepts is habitus⁶³. This has been defined as a structured and structuring structure, a collection of generative principles embodied by individual agents. This definition of habitus has generally been interpreted as something which controls tastes, language use and social status⁶⁴. Habitus is formed in each person by their early experiences in the family, the school, and further foundational experiences such as work or assimilation of different cultures. At each stage, the habitus formed by previous experience is the raw material that is modified and restructured by exposure to new experiences. The restructured habitus then underpins the structuring of "...all subsequent experiences... and so on, from restructuring to restructuring"⁶⁵. Habitus, once formed, is highly durable and resistant to change, each previous iteration of a person's habitus steers and determines the direction in which further development can occur.

Social classes, according to Bourdieu, can be better understood as groupings of habitus. For any sort of class action to occur, or classes to be mobilized, any action required by such a group must:

...presuppose their mastery of a common code and since undertakings of collective mobilization cannot succeed without a minimum of concordance between the habitus of the mobilizing agents (e.g. prophet, party leader, etc.) and the dispositions of those whose aspirations and world-view they express.⁶⁶

This is a vital point – that shared habitus presupposes a shared experience and understanding of the world. This experience is mediated by a person's sensory access to and understanding of the world around them. Deaf people, with qualitatively different physical and sensory experiences of their environment must develop different habitus to those of their hearing peers, even if other aspects of their social standing are, at first glance, the same. For those whose language access is further distinguished from their hearing peers by their utilisation of visual-spatial signed languages (either as monolingual or plurilingual individuals) their habitus must be further differentiated. Therefore, they are not susceptible to the same 'mobilizing agents' or the same influences or inducements as their hearing peers and are not part of the same class or group.

Although often under-explored in the literature, the physical body and its exposure to the world is vital in the creation of habitus:

It is because the body is exposed and endangered in the world... and therefore obliged to take the world seriously (and nothing is more serious than emotion...) that it is able to acquire dispositions that are themselves an openness to the world.⁶⁷

Habitus, controlled by the environment, also controls bodily actions, how people communicate, how they stand and how they interact physically. Habitus can be physically enacted and is thus recognised by others:

In a society divided into classes, all the products of a given agent... speak inseparably and simultaneously of his/her class... and his/her body – or, more precisely, all of the properties, always socially qualified, of which he/she is the bearer... physical properties that are praised... or stigmatized.⁶⁸

Habitus is thus embodied; it is acted out and acted upon in everyday behaviours. For each person habitus is "inscribed in their bodies by past experiences. These systems of perception, appreciation and action enable them to perform acts of practical knowledge"⁶⁹. Bourdieu thus emphasises the bodily experience of agents, the way in which lessons learned are marked indelibly on their bodies through acquired stances and behaviours, and the way in which these bodily marks and behaviours are recognised and understood by others.

We can therefore talk about an embodied deaf habitus. Deaf people show their position in social space through their behaviours, through their stance, through the physical, visual spatial language that they use. Of course, since deaf people have different sensory experiences of the world, their habitus will be different to those of their hearing peers and families⁷⁰. The embodied habitus makes this visible. It etches people's life experiences on their bodies. Bourdieu introduces another concept which can be used to theorise the deaf body, to theorise how the body structures and is structured by our experience of space. This is bodily hexis, which Bourdieu defines as:

...political mythology realized, em-bodied, turned into a permanent disposition, a durable manner of standing, speaking, and thereby of feeling and thinking.⁷¹

Bodily hexis is not only “so many marks of social position”⁷², but is also a key element of transmitting and acquiring spatial and bodily practice:

Body hexis speaks directly to the motor function, in the form of a pattern of postures that is both individual and systematic, because linked to a whole system of techniques involving the body and tools, and charged with a host of social meanings and values; in all societies children are particularly attentive to the gestures and postures which, in their eyes, express everything that goes to make an accomplished adult – a way of walking, a tilt of the head, facial expressions, ways of sitting and of using implements...⁷³

Hexis is thus, similarly to habitus, not consciously learned. It is not something that is thought but is more affective in the way it is acquired and expressed. It is prior to thought; it bypasses conscious consideration and speaks instead to instinctive bodily action:

This practical, non-thetic intentionality, which has nothing on common with a cogitatio (or noesis) consciously oriented towards a cogitatum (a noema) is rooted in posture, a way of bearing the body (a hexis), a durable way of being of the durably modified body which is engendered and perpetuated, while constantly changing (within limits), in a twofold relationship, structured and structuring, to the environment.⁷⁴

Hexis is therefore structured by the social, environmental and spatial experience of deaf bodies. Living in a sensory world which is significantly different to that of hearing people results in a significantly different hexis. Deaf bodies are inscribed in different ways by the social order not just due to different sensory experiences, but different access to social meanings. A hearing person would pick up on the “secret code”⁷⁵ of a spoken discourse, the politeness or otherwise of a spoken instruction or comment, whereas a deaf person would have a different interpretation of such a discourse based on their different sensory understanding of the utterance. They may notice bodily politeness markers such as facial expression, body orientation or eye contact, or equally these physical markers may be too deeply rooted in hearing conventions that are not sufficiently accessible for deaf people to correctly interpret them. Deaf people, who will always have limited access to the ‘legitimate’⁷⁶ spoken language of the state, have very different experiences of socialization into the majority culture compared to those who have unproblematic access to such social discourses. This can cause difficulty in navigating majority spaces, such as mainstream schools or workplaces which are oriented to hearing bodies.

These different experiences embody themselves in different ways. Some deaf people will attempt to meld into hearing space and their bodies will be inscribed by that experience, being hyperaware of what is going on around them, being ground down and demoralized by the constant realisation that they will never live up to the hearing world’s expectations⁷⁷. Or there are those who reject the hearing world conventions, or who perhaps have never really learned them because they have been born and brought up in deaf communities, and instead embrace and embody the deaf hexis they have formed. There are some who acquire a deaf habitus without their knowledge or awareness, who are able to express this in a realisation of their deafhood through utilisation and exploitation of the visual experience of space:

The dispositions that it actualizes – ways of being that result from a durable modification of the body through its upbringing – remain unnoticed until they appear in action.⁷⁸

The orientation of deaf bodies in physical space may sometimes pass unremarked and unnoticed, such as those orientations of deaf children and adults who have been educated in mainstream, hearing schools or who have otherwise grown up in hearing environments. While on the surface they may appear to be ‘coping’ or ‘managing well’, these orientations may hide or cover up the labour the deaf individual is undertaking to maintain this façade of competence in hearing spaces. This is something that is well known and talked about in deaf circles as the duck or swan metaphor, serenely floating or gliding along on the surface, but propelled by desperate thrashing and expenditure of energy below the surface. It is only when this façade slips that the true dispositions of the individual are noticed.

Another of Bourdieu’s thinking tools is capital⁷⁹. Cultural capital can be embodied, it is shown by a durable physical disposition which reflects the amount of cultural capital a person can command. An example would be an accent or dialect as a physical marker of class or social position. Another would be the gym or yoga-toned physique of a tanned upper-class body. All require investment of time and energy in acquiring and embodying such social markers. A physical marker of deaf cultural capital may be in the visual acuity that learning signed languages bestows on people⁸⁰, the ability to interpret the world using visual rather than auditory cues⁸¹, the ability to express oneself physically through signed language or gesture, or having instinctive knowledge of how to orientate oneself to maximise sensory reach.

Physical capital, on the other hand, has been argued to refer to something other than simply embodied cultural capital, and refers to the worth of the body itself. This has been explored particularly in relation to disabled and sporting bodies⁸², in which physical capital is gained or lost through socially approved or abnegated physiques. Many deaf people have, on the surface, physically unremarkable bodies. If they are not wearing any obvious hearing aids or not conversing in signed language, they are undistinguishable to hearing people to the unpractised eye. Their physical capital in these contexts is thus no different to that of their hearing peers. However, once they are ‘outed’ as unable to hear or as visually oriented people (for example, obviously reacting to visual rather than auditory cues) their stock of physical capital, in the eyes of hearing peers, often drops. Deaf people can therefore simultaneously be seen by hearing people as bearers of, and lacking in, physical capital depending on whether the situation demands auditory orientation to the world or not.

Bourdieu draws many parallels between physical space and social space. He sees what happens in physical space as reflecting, or being a metaphor for, positions taken and held in social space:

Social space is an invisible set of relationships which tends to retranslate itself, in a more or less direct manner, into physical space in a form of a definite distributional arrangement of agents and properties.⁸³

While Bourdieu expanded on this statement by saying that such distributional arrangements can be analysed on urban scales “for example, opposition between downtown and suburbs”⁸⁴, it should also be considered that social space can be reflected in individual spatial orientation and location. The deaf habits of sitting near the front of an audience to see the signer, the speaker (if lipreading), or the interpreter (if one should be provided) are visible, physical distributions which reflect their embodied cultural capital, their embodied habitus and their hexis. The practice of sitting in circles or semi-circles to maximise visual reach is not only a demonstration of embodied habitus marked by

the importance of vision over hearing, but also of cultural capital in a culture which values the inclusion of others in communication. An individual positioning themselves in a seat so that they have a slightly better visual reach over the room, train carriage or park in which they are sitting again shows the embodiment of cultural capital, the appreciation that the visual is important, the embodiment of orientating tactics and gestures to maximise the visual gain their bodies bestow and minimise any disadvantage that an inability to hear might impose. These orienting tactics are not only seen in mainstream environments, but also in culturally deaf spaces such as deaf clubs or home environments where deaf space is collectively produced.

Bourdieu's work on habitus, capital and hexis are useful in understanding how social enculturation can mark and modify physical behaviours and complements Lefebvre's idea of gestures. While Bourdieu's focus on social space is more about relational clusters of distinction, or tastes, and his focus on physical space tends, like Lefebvre, to lean more towards the urban rather than the individual, adaptation of his approach could be valuable.

One such example of how hexis and habitus can be recognised and utilised by deaf people is illustrated in the work of deaf Professor and storyteller, Ben Bahan. Bahan's *Memoir Upon the Formation of a Visual Variety of the Human Race*⁸⁵, opens with a story that many deaf people will appreciate from personal experience, in which deaf people are able to recognise one another's bodily hexis and gestures, and utilise their visual habitus to catch each other's attention in a busy environment. Similarly, the embodiment of particularly deaf linguistic habitus and linguistic capital can result in observable behaviours (something that Robinson terms 'climbs'⁸⁶), which give an insight into ways of creating and positioning oneself within deaf spaces. The addition of an interrogation of hexis would add another level of analysis to Graham and Tobin's valuable investigation of the development of deaf bodily habitus in young children, allowing the authors to show how bodily behaviours can be expressed and absorbed separately from cultural and linguistic values.

Another productive use of Bourdieu's 'thinking tools' would be investigating the way in which hearing people fit into deaf space. As bodies marked by qualitatively different experiences to those of deaf bodies, their habitus and the expression of their hexis are different. How these differing embodiments of experience influence how hearing people interact with deaf space can be investigated and theorised using Bourdieu's concepts. One such example is the term 'good attitude', which is often deployed to describe hearing people who 'fit' into deaf spaces⁸⁷. This 'good attitude' does not necessarily coincide with the ability to sign⁸⁸, but shows an understanding of the doxa of the deaf space, a feel for the rules of the game, and a willingness to recognise deaf people and bodies as valid bearers of capital. On a similar note, the CODA body as bearer of capital valued by both deaf and hearing communities, as embodiment of habitus inscribed by access to both deaf and hearing fields could be an area ripe for exploration.

However, physical capital does not only benefit the individual bearer. We must also consider the markets in which the capital exists. Capital does not benefit the individual bearer alone but can also be appropriated by those who exploit those bearers⁸⁹. Some appropriation may be seen as relatively benign, such as institutions employing deaf signers at reasonable pay to make use of their physical and linguistic capital through signed language teaching or researching roles. Others may be less so, such as institutions deliberately employing deaf signers who can also speak over monolingual deaf signers in those roles, to minimise the cost of communication support they must offer⁹⁰. An understanding of deaf bodies as bearers of value must reveal "bodily capital as both an individual asset *and* a structurally unequal social product that yields greater profits to those in the position to appropriate it"⁹¹. One example of research with deaf people which could be further analysed using this approach is the way in which deaf people can be employed both as a way of signalling diversity

and social justice in corporations, but also as a way of taking advantage of deaf peoples' limited employment opportunities⁹². Scrutiny into the way in which medical and technological interests can mould policy makers and media views on the relative capital that deaf bodies can bear is essential to ensure that deaf views are understood and not exploited or misrepresented for moral outrage or impact⁹³.

One recurring criticism of Bourdieu's work is that many believe his theory to be overly deterministic. While it is true that habitus and hexis are frequently described as durable and resistant to change, change is not impossible. Different reserves of capital can be cultivated which allow a person to operate more effectively in different fields, although this requires extensive, intensive effort. The effort is such that "one cannot enter this magic circle by an instantaneous decision of the will, but only by birth or by a slow process of co-option and initiation which is equivalent to a second birth"⁹⁴. The habitus itself is not as deterministic as some have claimed. I have shown above that habitus is modified by social and physical experiences, rendering it and the orientations and behaviours it structures open to change. It is only in interaction with different fields that habitus results in dispositions which regulate a person's behaviour. It is this interaction between the objective (the field) and the subjective (the habitus) which opens choice and freedom in an individual's behaviour.

Conclusion

Increasingly in education, social, and employment contexts deaf people are navigating hearing spaces as individuals, without large deaf peer groups. This is different to the traditional collective deaf experience, which was defined by attendance in deaf schools, deaf clubs and often working together in manual jobs⁹⁵. There needs to be more attention paid to the individual deaf person, their individual bodily experiences and how these produce deaf spaces, which then engage with the spaces of a majority hearing world. I believe it does a disservice to these orientations to imply, as much recent geographical work in the field has done, that deaf spaces can only be created in collaboration between two or more deaf bodies. To support deaf people to navigate these spaces, particularly children who are physically and linguistically isolated from their peers, greater understanding of how deaf people successfully navigate these spaces as individuals is needed.

Deaf people have their own distinctive ways of sensorially and physically orientating themselves to and in the world. I have outlined in this paper two complementary approaches for exploring how deaf people produce and understand their own deaf spaces on an embodied individual scale. The approaches in this paper can be seen as being in productive tension with each other. Bourdieu's thinking tools of habitus and capital focus more on how each individual can be placed and located within social space. Lefebvre, on the other hand, focuses more on how this social space is produced. By combining the two, there is scope to see how a deaf individual can produce space through gestures motivated by sensory experience, language, and culture; and how a deaf individual can navigate and structure the resulting spaces based on the social, cultural and physical experiences they embody.

While it is true that Lefebvre emphasises collective action in producing space; without individual action, there is no collective. There is room within his framework to look at how individual actions can produce individual spaces. Similarly, Bourdieu lacks a theory of space in his work. However, his work on embodied habitus and hexis allows us to interpret the gestures of deaf individuals in new and productive ways. This approach will allow us to move beyond 'static categories'⁹⁶ of what deaf space means, and explore the 'myriad of coordinates, yet to be visited'⁹⁷ that such an investigation will reveal.

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- ¹ Robinson, K.E.F., Looking to Listen: Individual 'Turns' in Deaf Space and the Worlds They Conjure (Unpublished PhD thesis, University College London, 2018); Kusters, A., De Meulder, M. and O'Brien, D., eds., *Innovations in Deaf Studies: the Role of Deaf Scholars* (New York: Oxford University Press, 2017).
- ² Cue, K.R., Pudans-Smith, K.K., Wolsey, J.-L. A., Wright, S.J. and Clark, M.D., The Odyssey of Deaf Epistemology: A Search for Meaning-Making. *American Annals of the Deaf* 164, 3 (2019) p.395-422. DOI: <https://doi.org/10.1353/aad.2019.0017>.
- ³ Graham, P.J and Tobin, J.J., 'The Body as a Canvas: Developing a Deaf Bodily Habitus in Deaf Signing Preschools', in Leigh, A.W. and O'Brien, C.A. *Deaf Identities: Exploring New Frontiers* (Oxford University Press, 2020) 145-161.
- ⁴ Bourdieu, P., *Outline of a Theory of Practice* (Cambridge: Cambridge University Press, 1977); Bourdieu, P., *The Logic of Practice* (Cambridge: Polity Press, 1990); Bourdieu, P., 'The Forms of Capital'. In Halsey, A.H., Lauder, H., Brown, P., Wells, A.S. (Eds) *Education: Culture, Economy and Society* (Oxford: Oxford University Press, 1997).
- ⁵ Lefebvre, H., *The Production of Space* (Oxford: Basil Blackwell, 1991).
- ⁶ Simonsen, K. Bodies, sensations, space and time: the contributions from henri lefebvre. *Geografiska Annaler: Series B, Human Geography* 87 1 (2005) 1-14. DOI: 10.1111/j.0435-3684.2005.00174.x
- ⁷ Low, S.M., Embodied Space(s): Anthropological Theories of Body, Space and Culture. *Space and Culture*, 6 1 (2010) 9-18 DOI: 10.1177/1206331202238959. p.10.
- ⁸ Acarón, T., Shape-in(g) Space: Body, Boundaries and Violence. *Space and Culture* 19 2 (2016) 139-149. DOI: 10.1177/1206331215623208. p.141.
- ⁹ Clark, J.L., *Where I Stand: On the Signing Community and My Deafblind Experience* (Minneapolis: Handtype Press, 2014); Edwards, T., Re-Channeling Language: the mutual restructuring of language and infrastructure among DeafBlind people at Gallaudet University. *Journal of Linguistic Anthropology* 28 3 (2018) 273-92; Edwards, T., Sign-Creation in the Seattle DeafBlind Community: a Triumphant Story About the Regeneration of Obviousness. *Gesture* 16 2 (2017) 307-332; Edwards, T., Bridging the Gap Between DeafBlind Minds: Interactional and Social Foundations of Intention Attribution in the Seattle DeafBlind Community. *Frontiers in Psychology* 6 (2015) 1497; <https://poetryinternationalonline.com/roundtable-discussion-on-deaf-poetics/>
- ¹⁰ Bishop, M. and Hicks, S.L., *Hearing, mother father deaf: hearing people in deaf families* (Washington D.C.: Gallaudet University Press, 2009).
- ¹¹ Tolia-Kelly, D.P., The geographies of cultural geography I: identities, bodies and race. *Progress in Human Geography* 34(3) (2010) 358-367.
- ¹² Imrie, R. and Edwards, C., The Geographies of Disability: Reflections on the Development of a Sub-Discipline. *Geography Compass* 1(3) (2007) 623-640.
- ¹³ Kelly, E., *Embodying Difference: Hybrid Geographies of Deaf People's Technological Experience*. (Unpublished PhD thesis, University of Bristol, 2003).
- ¹⁴ Robinson, Looking to Listen.

-
- ¹⁵ Kitzel, M-B., Introduction to Deaf Spaces, University of Rochester, Rochester, NY on 14 November 2019. Gulliver, M., DEAF space, a history: The production of DEAF spaces Emergent, Autonomous, Located and Disabled in 18th and 19th century France. (Unpublished PhD Thesis – University of Bristol, 2009).
- ¹⁶ Hualand, H., 'Sound and Belonging: What Is A Community?' in: Bauman, H-D L. (ed.) Open Your Eyes: Deaf Studies Talking (Minneapolis, University of Minnesota Press, 2008) 111-123; Padden, C. and Humphries, T., Inside Deaf Culture (Cambridge, Harvard University Press, 2005).
- ¹⁷ See <https://deafgeographies.com/resources/> for a list of Deaf Geographies resources.
- ¹⁸ Bauman, H.-D.L. and Murray, J.J., Deaf Gain: Raising the Stakes for Human Diversity. (Minneapolis: University of Minneapolis Press, 2014).
- ¹⁹ Gulliver, DEAF space, p.90.
- ²⁰ Kusters, A., Deaf on the Lifeline of Mumbai. Sign Language Studies, 10 1 (2009) 36-68; Kusters, A., Deaf space in Adamorobe: an ethnographic study in a village in Ghana. (Washington: Gallaudet University Press, 2015).
- ²¹ Edwards, T., Sensing the Rhythms of Everyday Life: Temporal Integration and Tactile Translation in the Seattle Deaf-Blind Community. Language in Society 41 (2012) 29-71
doi:10.1017/S004740451100090X.
- ²² Rosen, R.S., Geographies in the American DeafWorld as institutional constructions of the deaf body in space: the sensescape model. Disability & Society 33 1 (2018) 59-77.
- ²³ Lefebvre, H., State, Space, World. (Minneapolis: University of Minnesota Press, 2009).
- ²⁴ Lefebvre, H., The Urban Revolution. (Minneapolis: The University of Minnesota Press, 2003).
- ²⁵ Lefebvre, H., Rhythmanalysis. (London: Continuum, 2004).
- ²⁶ Lefebvre, Production, p.17.
- ²⁷ Lefebvre, Production, p.216.
- ²⁸ Lefebvre, Production, p.70.
- ²⁹ Lefebvre, Production, p.113.
- ³⁰ Lefebvre, Production, p.213.
- ³¹ Lefebvre, Production, p.174.
- ³² Sangalang, J., What is Privacy in Deaf Space? (Unpublished MA Thesis, Gallaudet University, 2012) p.24; O'Brien, D., Negotiating Academic Environments: Using Lefebvre to Conceptualise Deaf Spaces and Disabling/Enabling Environments. Journal of Cultural Geography 37:1 (2019) 26-45 DOI: 10.1080/08873631.2019.1677293
- ³³ Kusters et al., Innovations.
- ³⁴ Thanks to Adrian Bailey for discussion on this insight; Mathews, Elizabeth. S., Place, Space and Identity – Using Geography in Deaf Studies. In Deaf Studies Today! 2006: Simply Complex (Conference Proceedings) (Oram, Utah: Utah Valley University, 2007).

-
- ³⁵ Macpherson, H., Non-Representational Approaches to Body–Landscape Relations. *Geography Compass* 4 1 (2010) 1-13 DOI: 10.1111/j.1749-8198.2009.00276.x
- ³⁶ Lefebvre, Production, p.143.
- ³⁷ Lefebvre, Production, p.213.
- ³⁸ Lefebvre, Production, p.40.
- ³⁹ Lefebvre, Production, p.216.
- ⁴⁰ Lefebvre, Production, p.404.
- ⁴¹ Fekete, E., Embodiment, Linguistics, Space: American Sign Language Meets Geography. *Journal of Cultural Geography* 34 2 (2017) 131-148.
- ⁴² Lefebvre, Production, p.214.
- ⁴³ Gulliver, DEAF space, p.71-78.
- ⁴⁴ Casey, S. and Emmorey, K., Co-speech Gesture in Bimodal Bilinguals. *Language, Cognition and Processing* 24 2 (2008) 290-312 DOI: 10.1080/01690960801916188; Brenatari, D., Nadolske, M.A. and Wolford, G., Can experience with co-speech gesture influence the prosody of a sign language? *Sign language prosodic cues in bimodal bilinguals. Bilingualism: Language and Cognition*, 15 2 (2012), 402–412 doi:10.1017/S1366728911000587; Casey, S., Emmorey, K. and Larrabee, H., The effects of learning American Sign Language on co-speech gesture. *Bilingualism: Language and Cognition*, 15 4 (2012) 677–686. doi:10.1017/S1366728911000575.
- ⁴⁵ Sangalang, Privacy.
- ⁴⁶ Thoutenhoofd, E., See Deaf: On Sight in Deafness. (Published as open access PDF in 2011, 1999)
- ⁴⁷ Sangalang, Privacy, p.24.
- ⁴⁸ Sangalang, Privacy, p.24-33; Thoutenhoofd, See Deaf, p.209-214.
- ⁴⁹ Sangalang, Privacy, p.131; Leibergesell, N.P., Vermeerch P.-W. and Heylighen, A., Through the eyes of a deaf architect: reconsidering conventional critiques of vision-centered architecture, *The Senses and Society*, 14 1 (2019) 46-62, DOI: 10.1080/17458927.2019.1569349.
- ⁵⁰ Gulliver, M., ‘Seeking Lefebvre’s vécu in a “Deaf space” classroom’. In N. Ares, E. Buendía and R. Helfenbein, eds. *Deterritorializing/Reterritorializing: Critical Geography of Educational Reform* (Rotterdam: Sense Publishers, 2017) p.99-108.
- ⁵¹ Lefebvre, Production, p.416.
- ⁵² Lefebvre, Production, p.395.
- ⁵³ Sangalang, Privacy; Thoutenhoofd, See Deaf.
- ⁵⁴ O’Brien, Negotiating.
- ⁵⁵ A signing deaf cultural behaviour that is cited in the name of popular deaf television shows such as Under the Lamp (BSL Zone) and The Daily Moth YouTube channel.
- ⁵⁶ Lefebvre, Production, p.96.

-
- ⁵⁷ Lefebvre, Production, p.146.
- ⁵⁸ Lefebvre, Production, p.139.
- ⁵⁹ Lefebvre, Production p.363.
- ⁶⁰ <http://christinesunkim.com/>
- ⁶¹ Cue et al., Odyssey.
- ⁶² Graham and Tobin, Body as a Canvas.
- ⁶³ Bourdieu, Outline; Bourdieu, Logic.
- ⁶⁴ Maton, K., 'Habitus'. In Michael Grenfel (Ed) Pierre Bourdieu: Key Concepts (Durham: Acumen, 2008) p.49-65.
- ⁶⁵ Bourdieu, Outline, p.87.
- ⁶⁶ Bourdieu, Outline, p.81.
- ⁶⁷ Bourdieu, P., Pascalian Meditations. (Cambridge: Polity Press, 2000). P.140.
- ⁶⁸ Bourdieu, Logic, p.79.
- ⁶⁹ Bourdieu, Meditations, p.138.
- ⁷⁰ Graham and Tobin, Body as a Canvas.
- ⁷¹ Bourdieu, Outline, p.93.
- ⁷² Bourdieu, Outline, p.82.
- ⁷³ Bourdieu, Outline, p.87.
- ⁷⁴ Bourdieu (2000) Meditations, p.143-144.
- ⁷⁵ Bourdieu, P., Language and Symbolic Power. (Cambridge: Polity Press, 1992). P.51.
- ⁷⁶ Bourdieu, Language.
- ⁷⁷ DEX: Deaf Ex-Mainstreamers Group, Between a Rock and a Hard Place. (Wakefield: Deaf Ex-Mainstreamers Group, 2003); Valentine, G. and Skelton, T., Living on the edge: the marginalisation and 'resistance' of D/deaf youth. Environment and Planning A 35 (2003) 301-321; Robinson, Looking to Listen.
- ⁷⁸ Bourdieu, Meditations, p.139.
- ⁷⁹ Bourdieu, Forms of Capital.
- ⁸⁰ Codina, C. J., Pascalis, O., Baseler, H.A., Levine, A.T. and Buckley, D., Peripheral Visual Reaction Time is Faster in Deaf Adults and British Sign Language Interpreters than in Hearing Adults. Frontiers in Psychology, 8 (2017) 50.
- ⁸¹ Bahan, B., Memoir Upon the Formation of a Visual Variety of the Human Race. In Bauman H.-D.L. (Ed) Open Your Eyes: Deaf Studies Talking. (Minneapolis: University of Minnesota Press, 2008); Kusters et al., Innovations.

-
- ⁸² Shilling, C., Educating the Body: Physical Capital and the Production of Social Inequalities. *Sociology* 25 4 (1991) 653-672; Shilling, C., Physical capital and situated action: a new direction for corporeal sociology. *British Journal of Sociology of Education*, 25 4 (2004) 473-487.
- ⁸³ Bourdieu, P., *Physical Space, Social Space and Habitus*. (Oslo: Universitetet i Oslo, 1996) p.11.
- ⁸⁴ Bourdieu, *Physical Space*, p.11.
- ⁸⁵ Bahan, *Memoir*.
- ⁸⁶ Robinson, *Looking to Listen*.
- ⁸⁷ Napier, J., Consumer Perceptions of Sign Language Interpreting. In Judith Mole (Ed) *International Perspectives on Interpreting: Selected proceedings from the Supporting Deaf People online conferences 2001 – 2005* (Shropshire: Direct Learn Services Ltd, 2008) 30-52.
- ⁸⁸ O'Brien, D. Mapping Deaf Academic Spaces. *Higher Education* 80 (2020) 739–755.
<https://doi.org/10.1007/s10734-020-00512-7>.
- ⁸⁹ Connell, C. and Mears, A., Bourdieu and the Body. In Medvetz, T. and Sallaz, J.J. (Eds) *The Oxford Handbook of Pierre Bourdieu*. (Oxford: Oxford University Press, 2018).
- ⁹⁰ Robinson, O. and Henner, J., Authentic Voices, Authentic Encounters: Crippling the University Through American Sign Language. *Disability Studies Quarterly* 38 4 (2018) DOI:
<http://dx.doi.org/10.18061/dsq.v38i4.6111>.
- ⁹¹ Connell and Mears, Bourdieu.
- ⁹² Friedner, M., Producing “Silent Brewmasters”: Deaf Workers and Added Value in India’s Coffee Cafes. *Anthropology of Work Review* 34 1 (2013).
- ⁹³ Middleton, A., Emery, S. and Turner, G., Views, Knowledge and Beliefs about Genetics and Genetic Counselling amongst Deaf people. *Sign Language Studies*, 10 2 (2010) 170 - 196.
- ⁹⁴ Bourdieu, *Logic*, p.68.
- ⁹⁵ Ladd, P. *Understanding Deaf Culture: In Search for Deafhood*. (Clevedon: Multilingual Matters, 2003).
- ⁹⁶ Imrie and Edwards, *Geographies of Disability*.
- ⁹⁷ Tolia-Kelly, *Geographies of Cultural Geography*.