

Ruth Swanwick*, Sue Wright and Jackie Salter

Investigating deaf children's plural and diverse use of sign and spoken languages in a super diverse context

DOI 10.1515/applirev-2016-0009

Abstract: This paper examines the meaning of plurality and diversity with respect to deaf children's sign and spoken language exposure and repertoire within a super diverse context. Data is drawn from a small-scale project that took place in the North of England in a Local Authority (LA) site for deaf education. The project documented the language landscape of this site and gathered five individual case studies of deaf children to examine their plural and diverse language practices at home and at school. Analysis of the language landscape and case studies from this context is undertaken in order to define and exemplify deaf children's language plurality and diversity in terms of context and individual experience. Concepts of repertoire are explored with particular reference to the unique type of translanguaging that the plural use of sign and spoken languages affords. Implications of these preliminary insights are discussed in terms of the development of methodologies that are sensitive to the particular translanguaging practices of deaf children, and approaches to pedagogy that are appropriately nuanced and responsive to deaf children's language plurality and diversity.

Keywords: deaf, bimodal, bilingual, plurality, diversity, translanguaging, repertoire

1 Introduction

The aim of this paper is to explore language plurality and diversity in deaf children's lives and to develop an understanding of how deaf children deploy their sign and spoken language repertoires for meaning-making at home and at school. The intention is to examine how the concept of plurilingualism, that is, the individual use and experience of multiple languages, applies in the context of deaf children, focusing on linguistic repertory and communicative competence in

*Corresponding author: Ruth Swanwick, School of Education, University of Leeds, Leeds LS2 9JT, UK, E-mail: r.a.swanwick@leeds.ac.uk

Sue Wright: E-mail: eduswr@leeds.ac.uk, Jackie Salter: E-mail: j.m.salter@leeds.ac.uk, School of Education, University of Leeds, Leeds LS2 9JT, UK

its broadest sense (Garcia 2009). This exploratory piece of work aims to open up discussion and suggest directions for this new area of research.

This paper draws on findings from a small-scale project that took place in the North of England in a super diverse Local Authority (LA) site for deaf education. The project documented the language demographic for this site and developed five individual case studies of deaf children's plural and diverse language practices at home and at school. The site is not named in order to preserve school, service, and individual anonymity. The findings are presented as a language demographic and five case studies that exemplify plurality and diversity in terms of context and individual experience.

1.1 Terminology

In this paper, the term *deaf* is used to include any level of hearing loss significant enough to impact on language development. Specific audiological information is given where needed. This is the term most usually used in the United Kingdom (UK) to include all types and levels of hearing loss. This term is used by national organisations such as the National Deaf Children's Society (NDCS), the British Deaf Association (BDA), and the British Association for Teachers of the Deaf (BATOD).

The languages referred to in this paper include a number of spoken languages (English, Urdu, Punjabi, Lithuanian, Latvian) and sign languages (British Sign Language, Latvian Sign Language, Lithuanian Sign Language). The generic terms *sign* and *sign language* are used to refer to these natural sign languages where this information is known.

1.2 Repertoire

The use of the term repertoire in this paper encompasses the constellation of linguist and cultural resources that individuals bring to communicative acts, and the diverse ways in which these are deployed in meaning-making (Blackledge and Creese 2010; Blommaert and Backus 2012; Garcia and Wei 2014).

This holistic view of repertoire provides a framework to explore linguistic practices in a way that does not "imagine languages as clear cut entities" (Busch 2012: 507). This involves understanding the whole ecology of a communicative context and "the complexes of resources people actually possess and deploy" (Blommaert 2010: 102). This necessarily includes a focus on the observable ways in which individuals use language in different spheres of life.

Individual repertoire in this context is not marked by a geographical, community or cultural boundaries but is the result of diverse language experience and learning that can range from formal (classroom) learning to the informal ways in which we 'brush with' languages in our everyday lives. In the context of deaf children, repertoire thus comprises ways of knowing and using sign and spoken languages that are shaped by personal biographies, and that are constantly in flux. A bimodal bilingual repertoire does not imply complete or finished knowledge of a sign and/or spoken language but a changing "patchwork of competencies and skills" (Blommaert and Backus 2012: 1). Repertoire is both cognitive and emotional and as such, an individual, fluid and dynamic expression of different ways of being in the world.

Describing repertoire entails talking about language knowledge and use. To achieve this, *language mixing* will be used as a term the over-arching term to encompass all of the different ways in which features of sign and spoken languages can be used together, either simultaneously or sequentially. The term *language switching* will be used to refer to ways in which individuals switch from one language to another, between sentences, or mid-sentence. The use of this term is synonymous with code switching. In the context of deaf and hearing communication this involves stopping signing and starting speaking (Hauser 2000; Napier 2006).

The term *language blending* will be used to refer to ways in which features of two different languages are used simultaneously. This is synonymous with code blending. Although it is not possible to use a sign and spoken language fluently at the same time, certain features of sign language (more usually verbs and nouns) can be used alongside spoken, mouthed, or fingerspelt words (Lucas and Valli 1992). In the UK this type of language blending is called Sign Supported English (SSE) and is recognised as a natural and spontaneous feature of contact among deaf and hearing children and adults (Pfau et al. 2012; Sutton-Spence and Woll 1999). SSE is also a form of visual language used in the educational context to provide a through the air experience of spoken English (Knoors and Marschark 2012; Mayer and Akamatsu 2000).

The distinction between switching and blending is made in order to disambiguate the type of language mixing that we normally associate with two spoken languages, from the particular simultaneous language blending that the use of a sign and spoken modality affords. In the bimodal bilingual context, it is possible to switch between using a sign or spoken language, and using a blend of a sign and spoken language. The terms *switch* and *blend* are therefore both useful in this context. This distinction provides a starting point for understanding and describing mixed sign and spoken language use, and for analysing the meaning of translanguaging in this context.

1.3 Translanguaging

The term translanguaging originally came into being to describe a pedagogical approach to the use of two languages in the classroom. Its ideological roots are located in a positive view of bilingualism and bilingual language use in education and an emancipatory approach to dual language use in education (Baker 2011). Although originally used to conceptualise bilingual pedagogy, translanguaging also refers to ways that bilingual children flexibly use all of their language resources for communication and understanding. Bilingual and multilingual children translanguage all the time as they learn through language, learn language, and act socially.

Li Wei (2011) suggests that there is more to translanguaging than these practices, in which bilingual and multilingual speakers are routinely engaged. He argues that translanguaging also requires decision-making and choosing, and thus represents a “critical and creative” use of individual repertoire. (Li Wei 2011: 371). As a working definition for this paper, translanguaging refers to the dynamic and fluid use of sign and spoken languages. The use of this term encompasses, but is not synonymous with, language switching and blending and embraces a critical approach to language use (Otheguy et al. 2015).

2 The research context

This study is set in the context of changes in deaf children’s language experience and education. These have come about because of the growing language and cultural diversity in the UK, the development of sophisticated hearing technologies for deaf children, and the growth of inclusive contexts for learning.

2.1 Language and cultural diversity

In the UK the proportion and relative commonness of languages is in constant flux due to increasing super diversity and migration patterns. Some information about the languages that deaf children use in the UK is available from the Consortium for Research in Deaf Education survey (CRIDE 2013, 2015). This annual survey reports on the demographics and educational management of deaf children in specialist education services in the UK. The most recent survey reports that there are at least 48,000 deaf children between the ages of 0–19 across England, Northern Ireland, Scotland and Wales and 41,377 of these are in

England. The 2015 report for England includes partial information about deaf children's use of other languages. The survey reports that 13% of deaf children use an additional spoken language other than English (EAL) in the home and that 10% of children use sign language "in some form" either on its own or alongside another language (CRIDE 2015: 1).

The 2015 figures are reported with the caveat that many services were unable to identify all the languages in use and that 8,000 deaf children are unaccounted for in the data. It is likely that the number of deaf children with EAL is at least equivalent to the national figure of 15% because Bangladeshi and Pakistani heritage children constitute the most prevalent and identifiable group within this population (Cline and Mahon 2010; Mahon et al. 2011). In addition, increasing numbers of deaf children with Eastern European and Roma backgrounds are identified on school and service caseloads. Incomplete knowledge about group and individual language experience and repertoire makes it difficult to organise support for deaf children and their families (Atkin et al. 2002; Leigh and Crowe 2015; Willoughby 2012).

2.2 Technologies

Advanced hearing technologies now provide deaf children with greater opportunities to learn one or more spoken languages. In particular, cochlear implants (CIs) have facilitated the perception and development of spoken language for profoundly deaf children by ameliorating access to its complex phonology (Archbold 2015; De Raeve 2015). CIs enable deaf children to more successfully access the different languages of the environment and perceive the phonological nuances between different spoken languages (McConkey-Robbins et al. 2004). Within acoustically favourable environments, CIs also allow overhearing of language in use, thus enabling deaf children to access the incidental learning accessible for normally hearing children. The widespread implementation of new born hearing screening has ensured that the benefits of CIs, and other advances in amplification technologies are reaching children early enough in their lives to make a significant difference to their spoken language potential (Mayer and Leigh 2010), and literacy development (Pimperton et al. 2014).

2.3 Inclusive contexts for learning

The contexts in which deaf children are learning language have also diversified. There are 23 schools for the deaf in the UK but this number has decreased from

75 recorded in 1982 as inclusive provision has developed (BATOD 2015). Of the total number of deaf children in England, around 3% attend special schools for deaf children. The majority of deaf children (approximately 78%) are educated in their local mainstream school with support from an itinerant teacher of the deaf (CRIDE 2015). Pupils that are individually included in this way are likely to have sufficient spoken language skills to participate in the social and academic aspects of school with bespoke specialist language, literacy, and technology support.

In addition to these two types of provision, resourced mainstream schools provide a peer-group environment for deaf learners enhanced with specialist staff (teachers of the deaf, communication support works, and deaf instructors). These designated schools are equipped to support the language and learning needs of deaf children and enable their inclusion within the mainstream setting. In the UK, approximately 7% of deaf children are educated within resourced provision (CRIDE 2015).

These learning contexts present different types of language experience for deaf children that can include direct teaching through BSL and/or spoken English with or without sign support. Social opportunities for mixing and communication in different sign and spoken languages will also change according to whether the individual has a deaf peer group in a special or resourced school, or is individually included in their mainstream school. Taken together, these contextual factors result in a changing picture in terms of deaf children's experience and use of sign and spoken language.

2.4 Bimodal bilingualism

Hitherto deaf children's diverse use of sign and spoken languages has been explored in terms of bimodal bilingualism. The use of this term emphasises the involvement of two modalities in contrast to unimodal bilingualism (Emmorey et al. 2008; Ormel and Giezen 2014). Research in this field offers much in terms of our understanding of the different international contexts for bimodal bilingual education (Marschark et al. 2014), deaf children's potential for bilingual language development (Plaza-Pust and Morales-López 2008), and the interaction between sign, spoken and written languages in terms of language processing (e. g. Ormel et al. 2012). However, there are gaps in our knowledge when it comes to understanding the plural experience of sign and spoken languages in deaf children's lives and the dynamic ways in which children deploy their sign and spoken language repertoires to make meaning in different contexts (Swanwick 2016).

Published research into deaf children's plurilingualism is scarce. Furthermore, this research rarely reaches beyond English-speaking populations

even though the prevalence of disabling hearing loss in children is greatest in non-English speaking, low and middle-income countries (Crowe et al. 2013; Knoors and Marschark 2015).

In terms of the use of multiple spoken languages, the dominant theme in the studies available is the potential of CIs to facilitate deaf children's learning of more than one spoken language. These studies usually focus on the English proficiency of children with CIs raised in bilingual homes (McConkey-Robbins et al. 2004; Thomas et al. 2008; Waltzmann et al. 2003). It is unusual to find studies that look at the children's second language skills in depth. Available studies that do consider heritage language and cultural diversity have focused predominantly on what influences language use at home and school and priorities for language intervention (Leigh and Crowe 2015; Crowe et al. 2014; Willoughby 2012).

The use of plural sign languages in deaf children's lives is rarely reported in the literature even though an increasing number of sign languages are recorded around the world every year (Woll et al. 2001). Hiddinga and Crasborn (2011) suggest that this is largely because sign languages do not tend to connect with one another, in the same way as spoken languages do. There is no one sign language that acts as a lingua franca across geographical and community borders. Furthermore, the use of International Sign Language at international gatherings may preclude the need for interaction between different sign languages (Woll et al. 2001).

Deaf children's bimodal bilingualism presents an exceptional language situation that tests the paradigms and terminologies normally associated with the plural use of spoken languages. Firstly, the additional modality involved in the use of sign and spoken language, and the way in which sign and spoken language can be blended affords a type of translanguaging that is unique to this context (Swanwick 2015, 2016). In addition, the factors associated with deafness, the early experience of language and the potential of technologies add layers of diversity that do not obtain for hearing bilingual children. There is a need to develop a greater knowledge base in this area in order to plan language support and intervention. This implies the development of strategies for obtaining information about children's second, minority or heritage languages, and the development of tools to describe and assess deaf children's plural and diverse language abilities (Guiberson and Atkins 2012; Verdon et al. 2015).

3 Methodological approach

An ecological approach was taken to the methodology for this project in order to collect a breadth and depth of information about deaf children's language

plurality and diversity. This involved the collection and analysis of contextual and individual language information in the form of a language landscape and individual case studies.

3.1 Language landscape methodology

Language demographic information was collected in a Local Authority (LA) educational site in the North of England. A “language landscape” (Crowe et al. 2013: 423) was developed for this site that provides the context for five individual case studies. The protocols for developing the language landscape and the case studies have been developed as a Language Planning Toolkit and Guidance for practitioners. This is a bilingual on-line resource designed to help deaf education professionals plan and support deaf children’s language learning (Swanwick et al. 2014). This resource will be referred to as the *Toolkit*.

The protocol for creating the language landscape involved, in the first instance, the use of data from the 2011 National Census. This publically available information provides data for the UK population in terms of size, nationalities, ethnicities, and languages in use. The 2011 Census data for the LA in focus were analysed to identify the size of population, the breakdown of population by gender and age groups; nationalities and ethnicities within the population, the dominant languages used by residents and residents’ proficiency in English.

To supplement this general information, specific information about the LA caseload was taken from the national annual CRIDE survey return submitted in 2015. The data from this survey return were analysed to describe numbers of children on the caseload, age ranges, levels of deafness and the number of children with CIs. In addition, the LA deaf education service provided the research team with specific caseload information about ethnicities, nationalities, and languages in use in the service. This information was not entirely complete with regard to all of the languages spoken by children and their families. However, the layered approach to the demographic data collection enabled the development of a more comprehensive language landscape than could be gathered through one source alone. For the detailed language landscape protocol see Appendix 1.

3.2 Case study methodology

The data collection methods for the case studies involved the use of teacher reports and interviews with teachers, parents, and children to develop individual

language profiles. In addition, observations were undertaken of children interacting in the school context, and in conversation with their parents in order to provide examples of language use alongside the profiles. For the detailed case studies protocol see Appendix 2.

3.2.1 Individual language profiles

The procedure for collecting the case study information involved three overlapping processes. The first of these was the use of teacher reports to develop individual language profiles. The teachers in the LA attended in-service training on the use of the Toolkit with particular attention to the guidance and prompts for developing individual language profiles. Using these materials, the teachers collated initial language profiles for individual children based on the information already available about children's home backgrounds, their language experience, language abilities, and progress in school. Teachers were not asked to collect this information in any one particular way, but to share their knowledge and insights according to their own reports and professional approach. Differences in approach across schools and individuals were expected. Between three and five in-school meetings took place, during which the researchers worked collaboratively with the teachers to shape the language profile and identify gaps in the information.

3.2.2 Interviews

The case study interviews took place while the profiles were being compiled. Short three-question interviews were designed to gather language information from the teachers, the parents, and the children themselves. The intention of the interviews was to fill in the identified gaps in the language profile and provide examples of language experience and use. The researchers interviewed the teachers during one of the profile meetings in school. Teachers were asked a general question about the languages in use in school. Specifically relating to the individual profiles, teachers were asked about the languages that each child was exposed to in school in different contexts. They were also asked about the languages that each child used in the school contexts. After each question, teachers were prompted to provide contextual examples.

The teachers interviewed the parents and the children as part of the process of developing the language profile. The researchers provided the interview protocols. Interviews with parents took place in school during the established family support meetings. British Sign Language and community language interpreters were

involved as needed. Parents were asked a general question about the languages in use in the home. Parents were prompted to reflect on the different contexts for language use, such as at mealtimes, bedtimes, or when friends and relatives visit. The second question for parents asked them to identify more specifically the languages used by different individuals in the home according to context and audience. The third question focused specially on the individual child and asked parents to talk about the child's language use at home in different contexts, with different people and for different purposes.

Interviews with the children took place in school as part of the individual meeting that the teaching team routinely carried out for the annual review process. Teachers carried out the interviews themselves, with a deaf colleague, or a communication support worker according to their normal communication practices with the individual child. The children were asked questions that mirrored those asked of the teachers and the parents: A general question was asked about the languages used at home, followed by a question about who uses different languages and when. Children were also asked their own language use at home and in school. For each question children were prompted to think about different contexts, activities, and people, and to give examples.

3.2.3 Observations

Observations were undertaken of children interacting in school, and in conversation with their parents in order to qualify and exemplify the profile and interview information. Based on the review of the research, the research team anticipated the difficulties that teachers and parents might experience in identifying and describing the complex language dynamics of home and school contexts. Observation was therefore used to capture examples of language use and to resolve any discrepancies between reports and actual practices. The researchers observed the children in different contexts in the school setting during each visit to the school. Five to ten minute observations were undertaken to follow up and exemplify descriptions given about language in use in the profile. The observations were guided by the same questions asked of teachers and children about language use in school. The field notes made from these observations helped the researchers to understand the language dynamics of the school context and tune into individual language experience.

Observations of children in conversation with their parents were made in order to provide the researchers with insight into individual language experience and use in the home context. The information from the interviews could only provide a sketch of the language dynamics in the home context. It was

hoped that the observation would give a more fine-grained picture of interpersonal interaction and individual communication strategies. Parents and children were observed in a five to ten minute conversation at home or at school, according to their preference. The researchers did not specify which parent, or that it could only be one parent. Each family made their own choice in this matter. To give a communicative purpose to the conversation, the child shared something (a piece of work, an artefact, some pictures) from the school environment that the parent had not seen before. The conversation was videoed by the researchers for the purposes of analysis.

3.2.4 The study sample

The participants in the study comprised a convenience sample. As a small scale exploratory study no criteria were set for inclusion and exclusion. The main concern of the research team was to develop working relationships with the schools and teachers and establish appropriate ways to involve parents and children. The reason that there is limited LA information and few research studies about deaf children's home language experience is that this kind of enquiry involves intrusion into the home context and complex language questions. The intention of this exploratory work was to develop a methodology sensitive to these issues. Participants were invited to take part and not selected. Education managers and teachers volunteered to take part in the study following a workshop presentation in the North of England on the project. Subsequently, parents were invited to take part in the case study work by their teachers. Ethical procedures were put in place for the project in line with the University of Leeds code of practice, and the British Educational Research Association Ethical Guidelines for Educational Research (BERA 2011).

3.2.5 Analysis

The demographic data from different sources were analysed and collated to provide a language landscape of the LA in terms of population, nationalities, ethnicities, languages, profiles of deafness, technologies, and educational management. Teacher reports were analysed against the Toolkit protocol, and synthesised to provide a language profile for each individual child. The data from the interviews were analysed and collated against the Toolkit protocol and incorporated into the individual profile. Examples and comments from the interviews were extrapolated that highlighted diverse and plural language use at home and at school. The field

notes from the observations were similarly incorporated into the individual language profiles: Salient examples were extrapolated that illustrated the dynamic use of two more languages in the school setting.

The analysis of the video conversation centred on the meaning-making processes evident in the communication between children and their parents. The video conversations were initially transcribed in English. Translation of the spoken Punjabi, Urdu and Lithuanian were undertaken by researchers who were native speakers of these languages. The translation of the sign language in the videos was done in collaboration with the deaf and hearing staff, and BSL interpreter, in the school context.

The transcription process enabled an initial coarse analysis of the languages in use by the child and the parents. This is described in the case studies in terms of exposure and repertoire. Analysis of the transcription and the video material was also undertaken to gather examples of language mixing by the children. These practices are described in the case studies in terms of translanguaging. The analysis process sought to identify ways in which the children draw on and deploy their linguistic repertoires to establish and maintain dialogue. Through this process, it became evident that the complexity of translanguaging strategies involved in sign and spoken language use requires a more fine-grained analysis. For future studies, it would be useful to explore the use of a linguistic annotation tool that can capture the simultaneous and multimodal features of these multilingual interactions.

The findings are reported as a description of the language landscape as then as five individual case studies compiled from the language profiles, interview, and observational data. The language landscape gives a macro (national) and a micro (local) context for the case studies. The case studies are presented in terms of individual and contextual (home and school) circumstances, and individual language exposure and repertoire. Examples are given of strategies for meaning-making and in particular, the translanguaging practices of deaf children.

4 The language landscape

Fleetfield (this is a pseudonym) has a large and rapidly growing population of just over half a million. The district is ethnically diverse, with over 85 languages spoken. 64 % of the population are of White British origin, 20 % have a Pakistani heritage, and this is the biggest black minority ethnic group in the area. In terms of migration patterns, most arrivals come from Pakistan. Other notable groups are Polish and Slovak nationals. Together, the White British and Pakistani ethnic

groups make up 84.3% of the district's population. The remaining 15.7% of the population is made up from a variety of other smaller ethnic groups. More than 85 languages are spoken in the district and 37.17% of school-aged pupils in Fleetfield have a first language that is not English.

The total numbers of the children (ages 0–19 years) on the Fleetfield, deaf education caseload was 777 at the time of the study. The CRIDE survey (2015) identified that the majority of families home language was spoken English (296) but that a significant number of families used another spoken language at home either instead of English (40) alongside English (258) or alongside sign language (67).

Of the 777 caseload, there are 88 children in resourced provision. The majority of children are supported by the peripatetic team in local mainstream schools. 29% of the caseload has a mild hearing loss, 29.5% are moderately deaf, 7.5% are severely deaf, and 10.9% have a profound hearing loss. Additionally, 17% have unilateral hearing losses and 4.5% are unknown. These percentages are reflected across the age range. 43 children have CIs and most are bilateral fittings.

46% of families with deaf children are of South Asian origin, the majority (42%) are from Pakistan and mainly from the area around Mirpur. 5.2% are from Eastern Europe, namely Slovakia, Poland, Latvia, Lithuania and Czechoslovakia. The numbers of families from other parts of Europe and Asia is extremely small, no more than 1%. The transient nature of many families, particularly from the Roma community, means that families may stay for two or three years and then move on.

The caseload data collected by the service indicates that the home language of the majority (68%) of families with deaf children is English. Of the 46% of families with a Pakistani ethnic origin, only 16% said that their home language was a south Asian language. Another 9% said they used a combination of English and a South Asian language, often stating that either father or mother could not speak English.

The Central and Eastern European families mainly reported that the home language was the same one as their ethnic origin, 4.8% said that English was not the language used at home. One family said that they used Romani. BSL was used by 12 families, alongside another spoken language. Two families said that BSL was their only language. Other languages accounted for less than 0.8% of languages used at home.

It is notable that within this context, 25% of families found it difficult to identify a home language. Many of these families were of Pakistani ethnic origin and it may suggest that there is no one dominant language used in the home. This overview of the language landscape provides a context for understanding individual language experience and illustrates the problematic nature of collecting detailed and nuanced language demographic information.

5 Individual case studies

The individual case studies focus on the language exposure and repertoire of deaf children in this particular context. The way in the children draw on their language repertoires to make meaning is explored, with particular attention to the role of translanguaging as part of the meaning-making and sharing process. Background information is given at the start of each case to contextualise the focus on language. An overview of the five participants is provided in Table 1. Some general points to note regarding language exposure are that in the primary and secondary school settings, all the pupils are exposed to spoken English and BSL from hearing and deaf adults and peers as well as SSE in both social and learning contexts. In both settings, there are fluent deaf and hearing BSL users. The primary school population is predominately Pakistani in origin, particularly from the area around Mirpur. In this setting Punjabi is sometimes used among some of the hearing children, and in contact with parents, and several adults in the school use the community languages. Hearing children in the school use a number of Eastern European languages including Slovakian, Latvian, and Polish. In contrast, the secondary school is set within a predominantly white British area. Two members of staff are able to speak an Eastern European language to communicate with parents. Only a very small number of pupils in the school speak languages other than English.

5.1 Dora

Dora is a five-year-old girl whose family origins are in Lithuania. Dora has a bilateral, profound sensorineural hearing loss. She was diagnosed in Lithuania at six months and fitted with hearing aids at nine months. A CI was fitted to the left side when Dora was five. She continues to wear her hearing aid in her right ear. Dora likes to wear her implant and her hearing aid.

Dora is primarily exposed to spoken Lithuanian at home. To support communication her parents also use some English words, gesture, and some signs (mother is learning BSL). Both parents also speak Russian between themselves.

In terms of repertoire, Dora understands and uses spoken Lithuanian, English, and BSL and communicates using a combination of gesture, sign and one-word phrases. At home, Dora uses mostly spoken Lithuanian and her short phrases are clear to people to whom she is familiar. In school, Dora uses spoken English with some signs and she is learning BSL. She is observed using this range of strategies in a play session with her mother:

Table 1: Participant information.

Child Age (years) Gender	Family	Ethnicity (where born)	Hearing loss	Amplification	Languages used in the home
Indira 11 years F	Mother (h) Father (d) Younger brother (h)	Mother and father Pakistan. Indira and brother Britain	Profound, bilateral, sensori-neural	Bilateral aids from birth, right side CI aged 10	Homesign, Punjabi (Pashari), Urdu, English Arabic (Qur'an), BSL
Ruba 10 years F	Mother (h) Father (h) 2 older brothers (h) 1 older sister (h)	Mother Pakistan. Father and children Britain.	Profound, bilateral, sensori-neural	Bilateral aids from birth, left side CI aged 2. Re-implanted aged 4.	Punjabi, English, Urdu, Arabic (Qur'an)
Dora 5 years F	Mother (h) Father (h) (Sister born after the project)	Lithuania	Profound, bilateral, sensori-neural	Bilateral aids from 5 months, left side CI aged 5.	Lithuanian, English, Russian, BSL
Tomass 8 years M	Father (d) Mother (d) Twin sister (h) 2 older brothers (d)	Latvia	Profound, bilateral, sensori-neural	Bilateral aids from birth diagnosed and fitted in Latvia	Latvian Sign Language, Latvian, written English
Anna 13 years F	Mother (h) Father (h) Younger brother (d) Younger sister (d) 8 other siblings (h)	Slovakia (Romani)	Moderate, bilateral, sensori-neural with conductive overlay.	Bilateral aids from aged 8 (not used at home)	Romani, Slovakian, English, French, Belgian, German.

Dora and her mother are observed playing with a basket of toys and books. Dora's English-speaking deaf friend joins in the activity. Mum talks about the toys in Lithuanian. She points to toys and/or colours, asks for the word in Lithuanian, and then models the answer that Dora and the friend repeat. Sometimes Dora's friend offers the English word and the BSL sign for a toy. Dora repeats the English word, and then mum reinforces the Lithuanian equivalent. The presence of the friend means that the toys are routinely named in both spoken English and Lithuanian and Dora usually repeats both. During the activity, Dora uses pointing, gesture, signs and facial expression to indicate that she would like a new dress with a ribbon, like her friend. Mum checks her meaning in Lithuanian using a number of questions. Dora nods or shakes her head to confirm whether she has been understood. Mum agrees the purchase of the dress.

Although Dora's sign and spoken language is at the early stage of development, she draws on all of the resources that she has to make meaning and engage in the shared activities with her mother and her friend. She is able to translanguaging with two spoken languages and a sign language even though her skills in all of these languages are emerging. When her mother is speaking in Lithuanian, she watches, listens, and shows understanding mainly through eye contact, gestures and some individual signs. She switches her attention between her mother and her friend and responds appropriately to each of them.

Dora is able to move between different ways of communicating but also combine the knowledge of language that she has to make meaning: Whilst giving the BSL sign for some of the toys in the basket, she also repeats the Lithuanian word. This involves translanguaging with two languages and two modalities. In sharing a book about numbers with her mother, Dora gives the BSL sign for each of the written numbers in the book at the same time as counting aloud in spoken English. The translanguaging becomes more involved here as Dora combines the use of BSL and spoken English whilst also paying attention to the written number words. When her mother says the Lithuanian words for the numbers, Dora repeats them whilst continuing to give the BSL sign for the number words. Whilst manipulating two spoken languages, a sign language, and a written code for numbers, Dora is also responsive to her mother's language preferences. She is uncertain of the number ten in Lithuanian and looks to her mother for repetition of this. The next time that she counts aloud in spoken English, she pauses at number ten, looks to her mother, and says the Lithuanian word for ten and a sign that seems to be based on the Lithuanian or Russian handshape. This critical and accommodative mixed and blended use of language enables a shared experience with her mother.

The dexterity that Dora demonstrates in manipulating the language resources that she has combine with her understanding of the expectations of the

communicative context: She demonstrates awareness of the different ways in which she needs to respond to the language behaviours of her mother and her friend. This aspect of translanguaging, i. e. her communicative sensitivity, enables Dora to engage with both parties and to satisfy the more didactic interaction taking place with her mother, but engage with her friend at a social level.

5.2 Indira

Indira is an eleven-year-old girl from a family whose origins are in Pakistan. Her father and her younger brother are also deaf. Indira has a bilateral, profound sensorineural hearing loss. She was fitted with hearing aids at four months. She consistently wears her hearing aids and began using an FM system in class when she was five years old. She was fitted with a single CI when she was eleven and continues to use her hearing aid.

Indira is mainly exposed to Punjabi and English at home. Homesign is used among the family to communicate with father. Homesign systems commonly arise where none of the family members knows a conventional sign language (Botha 2007; Richie et al. 2014).

In terms of repertoire, Indira understands and uses Spoken English, Punjabi, Urdu, and BSL. She also uses SSE and some homesign and she reads Arabic. In school, she uses mainly spoken English and SSE. When with her deaf friends she understands, but does not use much BSL. She describes her language use in this way:

I got two hearing aids before and now two cochlear implants and teacher tells me my listening is improving. I sign to my dad who is deaf, he is trying to learn names he can now say (says her name). My mum uses English and Punjabi both. I am learning Urdu from my Auntie and I can speak some now. When I talk to my friends on the phone I speak English. I use Facebook and sign with my deaf friends. When visits come some speak English and some Punjabi. I learn Arabic at Mosque, it's easy. I talk to my brother, he's hearing. I talk in English, he does not know Punjabi. When my cousins come we talk in English because they don't really understand Punjabi (Indira).

Indira demonstrates awareness of her own language use and the repertoires of those around her. Interestingly, she references all of her description of her own language use to people, apart from the example of the Mosque. Her behaviours are responsive to the languages and communication styles of those around her and she seems able to draw on her extensive repertory critically to make meaning, in different ways, with others. The description that she gives of her own language use and choices suggests that the seamless transitions between languages and modalities described to be a normal part of everyday life.

An example of this translanguaging is seen when Indira is observed sharing an English storybook with her mother: Indira reads aloud from the book in English. Mum follows and asks questions about the words, the pictures, and the story in Punjabi. Indira responds in Punjabi giving equivalent meanings of English words or clarifying points in the story. Indira switches fluently between reading aloud in English, giving the translation of words and phrases, and explaining the story in Punjabi. Although she is changing languages, at both word and sentence level, the communication is fluid. There are frequent transitions between reading aloud from the text, giving the translation in Punjabi and then adding some commentary to the translation before returning to read on with the text. Translanguaging enables Indira to demonstrate her knowledge of written and spoken English, translate meaning for her mother, and interpret the text for her mother. Through this translanguaging she also demonstrates sensitivity to, and an affiliation with her mother. This is demonstrated through the observable changes in posture, eye gaze and tone of voice that she moderates to attend to the text and then to involve and support her mother. This communicative sensitivity, combined with the fluid interweaving of languages creates a hospitable, mutually enjoyable, and dialogic interaction.

5.3 Tomass

Tomass is an eight-year-old boy from a family whose origins are in Latvia. His parents are deaf. He has a hearing twin sister and two older deaf brothers who live with their father in Latvia. His twin sister goes to a different school that is local to the family home. Tomass is profoundly deaf. He was diagnosed at birth in Latvia and fitted with hearing aids. He consistently wears his aids in school. Tomass went to a school for the deaf in Latvia from nursery age where he learnt Latvian Sign Language and was introduced to spoken Latvian and English.

Tomass is predominantly exposed to Latvian Sign Language in the home and the local community, where mother has Latvian friends who are also deaf. His sister uses some English with him and his mother, who is learning English and BSL, will sometimes use SSE.

In terms of repertoire, Tomass is a fluent user of Latvian sign language and can read Latvian. He is also developing skills in BSL and spoken and written English. At home, Tomass uses Latvian sign language with his mum and sister and a little bit of English.

We use Latvian Sign Language at home. I know some English; I use it with my sister. My mum understands some English (Tomass).

At school, Tomass uses sign language that is thought to be a mixture of Latvian Sign Language and BSL. It was not possible to verify this. He also uses gesture, facial expressions, and sometimes pictures, to express himself. He understands some spoken English and is beginning to vocalise some English words and sounds. He understands some written English, such as single words in context about himself and his family. Tomass is observed reading aloud from a home-made book to his mum. He reads in English vocalising sounds that approximate to English for each written word with lip patterns such as 'b' and 'm' with BSL signs for each word.

Thomass has experience of fluent sign language use at home with his deaf parents. He is learning a different sign language at school and so he has an experience of translanguaging with two sign languages that many deaf children do not encounter. Further to this, he is learning to read English and, in reading aloud, to articulate the phonological patterns associated with the written print. While he is doing this, he is also producing individual BSL signs that match the written words (such as name, mother, father, sister) and fingerspelling function words (is, are, in). Thomass is thus translanguaging with two sign languages, a spoken and written language that we know of. His reported use of written and spoken Latvian is not demonstrated here. The way in which he approaches the book reading (with voice and signs from BSL) may reflect the approach in school but it also makes the text accessible to his mother. This is another example of the critical use of the language resources available to respond to the communicative context. These examples of language awareness and communicative sensitivity seem to be an integral aspect of all the children's translanguaging.

5.4 Anna

Anna is a thirteen-year-old girl who was born in Slovakia and is from a Roma background. There are eleven children in the family of different ages ranging from a new baby to eighteen years of age. Anna has a deaf brother who attends the same school and a younger deaf sister in the primary resourced provision. Her other siblings are all hearing and speak several languages including Slovakian, French, German and Romani. Anna has a moderate hearing loss which was diagnosed when she was ten-years-old and she was fitted with bilateral hearing aids. Her use of hearing aids is inconsistent at school and she prefers not to wear them at all at home.

Anna is exposed to Romani, Slovakian, BSL, and English at home. Most communication among the family is in Romani. BSL is sometimes used with Anna's younger deaf brother. The family use Slovakian in official contexts such as medical or school appointments.

In terms of repertoire, Anna understands and uses Romani, Slovakian, English (including SSE) and BSL. It was reported by her first primary school that she also spoke some French but this is not currently evident. Anna talks about her language use at home:

(...) Roma most of the time. Mum and dad sometimes speak to each other in Slovakian. My brother and sister (they are hearing) sometimes speak to mum and dad in Slovakian, I some times speak to my sister in English. I speak to (name of deaf brother) in Roma. I speak to my older brother (name) in Roma. I speak to my younger brother (name) in Roma or English. I sign to deaf friends or sign and speak at the same time.

Anna is translanguaging with several spoken languages as well as sign language, and the blended use of sign and spoken language. She is fully aware of the language and communication dynamics in the home and can articulate her own language choices including the fact that she sometimes blends sign and spoken language. It was not possible to observe Anne in communication with her parents and so the examples of her translanguaging are drawn from the school context.

In school, Anna uses spoken English, sometimes with sign support, for learning and some BSL largely for socialising with her deaf friends. She often switches between spoken English and Romani vocabulary, or uses signs from BSL, when she does not know the English word. Translanguaging for Anna enables her to communicate with her deaf and hearing family and friends but also gives her the opportunity to sustain dialogue with others as she draws on the resources that she has to make meaning.

5.5 Ruby

Ruby is a ten-year-old girl who comes from a family whose origins are in Mirpur Pakistan. There are no other deaf children or adults in the family. Ruby has a profound bilateral sensorineural hearing loss deaf that was diagnosed at birth as part of the newborn hearing screening programme. She was fitted with hearing aids at six weeks and received a single CI when she was two in her left ear. Two years later, she was re-implanted and at the same time a second device was fitted to her right ear. Ruby has now begun using a new FM system.

Ruby is primarily exposed to Punjabi and English at home. Mother prefers to English and Punjabi and father sometimes uses Urdu as well. Ruby's brother and sister both speak English and Punjabi. All the family read Arabic for the Qur'an.

In terms of repertoire, Ruby uses and understands spoken Punjabi (Pashtu dialect) and English and BSL. She understands some Urdu and can read and say Arabic from the Qur'an. At home, Ruby uses mainly Punjabi with her mum,

Punjabi and English with her siblings and her dad and some Urdu with her dad. At school, Ruby uses mostly spoken English. She is learning BSL and uses this with deaf school friends and adults. She sometimes uses signs to support her spoken language and gestures to make herself understood. Occasionally she uses Punjabi phrases with her friends.

Ruby is observed having a conversation with her dad in school. They have a discussion in English about school activities. Half way through their dialogue dad switches to speaking in Punjabi and Urdu about Ramadan. He asks Ruby questions in Punjabi and in Urdu about herself and the family and she answers in Punjab or in Pashtu dialect. She does not always understand the questions posed in Urdu and so dad repeats these in Punjabi. Ruby generally uses the Pashtu dialect but switches between this and Punjabi for different vocabulary items.

Ruby's ability to translanguage with more than one spoken language is also seen in the home context where a three-way conversation takes place between Ruby and her parents. Dad uses English and Punjabi to ask her about Ramadan and mum interjects in Punjabi. Ruby responds to both parents differently according to the language they use with her. Although there are two languages in play, the dialogue between them is fluid and meaningful. During this conversation dad suggests that Ruby demonstrates that she can read from the Qur'an. She does so aloud, incorporating the hand and body movements associated with this practice. Both mum and dad stop her from time to time and move her onto a different page to check that she is reading, and not reciting by rote. The translanguaging that is observed here, as with the other children in the study, is integration not only of language skills but also of the cultural knowledge and practices associated with the different communicative contexts and partners.

6 Discussion

These initial portraits illustrate the diversity of factors that influence language exposure and use for deaf children in this context. For each child the culture of the home and the surrounding community, the heritage of the family and the different life experiences of parents, siblings and the extended family comprise a rich, complex, and dynamic system (Larsen-Freeman and Cameron 2008). Individual deafness, age of diagnosis, technological support and the personal response to this are all also factors that influence how much access individuals have to spoken and sign language, and the extent to which they are able to understand and use different languages in different contexts.

6.1 Plurality and diversity

The children in these case studies understand and use several different languages in their daily lives. In each case, two or more spoken languages and one sign language are involved. For Tomass, two spoken languages and two sign languages are in play. All of the children are also developing skills in the written form of at least one of their spoken languages. Ruby, in addition, is developing skills in reading Arabic for a specific purpose. The concept of language plurality in the context of deaf children thus encompasses the use of multiple spoken, sign and written languages and many different domains of use.

Within this plurality, diversity is evident in the different ways in which sign, spoken and written languages are used in different contexts, and the way in which these languages are used. This includes the use of language varieties such as homesign and SSE. This diversity reflects individual differences, language ability, the language and cultural milieu, social orientation and identity. Gesture and signs from BSL are used in some cases to support spoken communication or to breach a language barrier (Dora), to facilitate social interaction (Anna), or mediate the written word (Tomass). The use of the home language may be fluent in discussions about Ramadan for example, but less so in talking about school work (Ruby).

6.2 Repertoire

The children's language repertoires differently constitute sign, spoken and written languages. Repertoire is evidently more than the sum of the languages that they know (Li Wei 2011). In their interactions with others they draw on their language skills but also on their life experience (Blackledge and Creese 2010; Blommaert 2010). An understanding of the behaviours and expectations of others, cultural knowledge, contextual awareness and an understanding of behavioural conventions thus shape their language use. This is evident for example, in Dora's negotiations with her mother, Ruby's responses to her father and reading of the Qur'an, and Indira's translations for her mother.

The use of repertoire observed in the case studies requires a level of competency over and above discrete abilities in any one particular language. It entails the "critical and creative" use of language and the ability to deploy communicative sensitivity, cultural awareness, and metalinguistic awareness to manipulate the communicative context (Garcia and Wei 2014: 10). This is manifested throughout the children's translanguaging practices as they flexibly mix and blend sign, spoken and written language to make meaning.

6.3 Translanguaging

Translanguaging is a normal part of making meaning in multilingual communities but has not yet been fully explored in relation to deaf children (Garcia and Sylvan 2011). In this study children are observed to switch and blend sign, spoken and written language to make themselves understood, accommodate mixed deaf and hearing audiences and respond to the differing language fluencies and preferences of others.

Translanguaging is also observed where children flexibly switch between spoken languages (Urdu, Punjabi, and English) and alternate their use of languages (such as spoken Lithuanian or Latvian sign language) for a particular purpose such as to talk about written English. The mixing of languages sometimes enables the children to express something in one language that they do not have the skills or vocabulary for in the other (Klatter-Folmer et al. 2006; Rinaldi et al. 2014).

In these examples, the “boundaries between languages become permeable” allowing for creative and transformative language use and communicative acts (Creese and Blackledge 2010: 112). This is not to suggest that individuals are not aware of the differences between the languages that they use. Indeed, they demonstrate considerable metalinguistic awareness and the ability to notice language “as a particular system among many” when they talk about languages and their own language use (Vygotsky 1962: 110). Translanguaging should therefore be recognised as “deployment of the speaker’s full repertoire” (Otheguy et al. 2015:281).

6.4 Implications for the learning context

These preliminary insights point to the need for more knowledge about deaf children’s language plurality and diversity and the development of approaches to capture repertoire and competency, as well as levels of skill in separate languages. Approaches to noticing and recording ways in which individuals galvanise and transform their linguistic resources are needed that take account of the distal and proximal influences of family, community, and environment. An ecological perspective that looks across the different layers of a child’s life would helpfully inform language assessment, planning, and intervention (Swanwick et al. 2014).

This breadth of knowledge would inform the development of a pedagogical approach that is responsive to plurality and diversity. Such an approach needs to build on the recognised language competencies of individuals and encourage the translanguaging practices such as those observed in this study, that unlock

meaningful interaction and that facilitate learning. From a teaching perspective, this involves nuanced language planning for every child, the mindful use of languages in the classroom, and responsible translanguaging (Lewis et al. 2012; Lindahl 2015).

7 Conclusion

This paper provides a preliminary exploration of deaf children's linguistic and cultural diversity in terms of individual experience and use of different languages, within a super diverse context. The work exposes the tip of the iceberg in terms of developing conceptualisations of repertoire and translanguaging in this context. A number of agendas for research and practice can be taken forwards from this starting point.

In research terms, there is a need for more extensive work to be done on language landscapes in deaf education: We know from the recent 2015 CRIDE survey that these landscapes are diverse, but we are not yet able to describe them in detail. We thus cannot adequately plan to respond to the language and cultural experiences of deaf children.

In this context, there is also work to be done on reconciling the language and terminology used to talk about deaf children's fluid and dynamic use of sign and spoken languages. The extent to which concepts of bimodal bilingual language mixing do, and do not align, with the unimodal experience of bilingualism needs to be clarified so that these two areas of research can speak to each other.

What is understood by language repertoire for deaf children who use sign and spoken languages in their lives also needs to be further elucidated so that the mixed use of language is recognised as a resource for meaning-making. As part of repertoire, translanguaging theory needs to be explored in relation to deaf children's lives. If translanguaging equates to the dynamic and fluid use of sign and spoken languages, then it is a natural feature of communication among deaf and hearing children and adults. That said, further exploration is needed of the linguist and cultural dynamics of deaf children's translanguaging in home and school contexts and the different ways in which translanguaging is mediated by technologies, individuals, and discourses in different cultural milieu. This will involve the development of data collection and analysis tools that capture the simultaneous and multimodal nature of translanguaging, and draw out the different ways in which translanguaging unlocks dialogue in home and school contexts.

Practitioners have a major part to play in terms of growing the knowledge base about deaf children's language and cultural diversity and acting on these new understandings in the classroom: Practitioners are uniquely situated to develop ecological profiles of deaf children that embrace the contextual as well as the individual information. The work done with practitioners so far indicates that the Toolkit provides a starting point for schools and services to develop their own language landscape and ecological profiles of children. From this baseline, practitioners can take an informed approach to working with children and their families to gather more in depth information about language experience and practices in different contexts. Furthermore, practitioners in deaf education bring their own diverse bimodal and plural language repertoires to the learning and teaching context. Wielding these competencies in the service of effective teaching is contingent on an understanding of the individuals, the language environment, and the multiplicities therein. With these insights practitioners can develop classroom practice that fully appreciates and exploits the language competences in play, and the meaning-making opportunities that translanguaging affords. A synergy between research and practice would ideally combine the skills, resources, and contextual knowledge needed to develop the knowledge base, appropriate methodological tools, and outputs for practice.

Acknowledgements: We would like to thank all the children and their and the families; the school and deaf education service staff for participating in this study. Thank you also to Ausra Raulusonyte and Samya Ambreen for help with the Punjabi, Urdu and Lithuanian transcripts.

Funding: This project was supported by the British Academy under Grant number MD130070. No financial benefits have arisen from this research and there are no conflicts of interest.

References

- Archbold, Sue. 2015. Being a deaf student: Changes in characteristics and needs. In Harry Knoors & Marc Marschark (eds.), *Educating deaf learners: Creating a global evidence base*, 23–46. New York: Oxford University Press.
- Atkin, Karl, Ahmad Waqar & Lesley Jones. 2002. Young South Asian deaf people and their families: Negotiating relationships and identities. *Sociology of Health and Illness* 24(1). 21–45.
- Baker, Colin. 2011. *Foundations of bilingual education and bilingualism*, 5th edn. Clevedon: Multilingual Matters.

- British Association for Teachers of the Deaf (BATOD). 2015. *Schools for the deaf*.
<http://www.batod.org.uk/index.php?id=/resources/history/histspsch/histspsch.htm>.
- British Educational Research Association (BERA). 2011. Ethical guidelines for educational research. <https://www.bera.ac.uk/researchers-resources/publications/bera-ethical-guidelines-for-educational-research->.
- Blackledge, Adrian & Angela Creese. 2010. *Multilingualism: A critical perspective*. London: Continuum.
- Blommaert, Jan. 2010. *The sociolinguistics of globalization*. Cambridge: Cambridge University Press.
- Blommaert, Jan & Ad Backus. 2012. Superdiverse repertoires and the individual. In Ingrid de Saint-Jacques & Jean-Jacques Weber (eds.), *Multimodality and multilingualism: Current challenges for educational studies*, 11–32. Rotterdam: Sense Publishers.
- Botha, Rudolf. 2007. On homesign systems as a potential window on language evolution. *Language and Communication* 27(1). 41–53.
- Busch, Brigitta. 2012. The linguistic repertoire revisited. *Applied Linguistics* 33(5). 503–523.
- Cline, Tony & Merle Mahon. 2010. Deafness in a multilingual society: A review of research for practice. *Educational and Child Psychology* 27(2). 41–49.
- Creese, Angela & Adrian Blackledge. 2010. Translanguaging in the bilingual classroom: A pedagogy for learning and teaching? *Modern Language Journal* 94(1). 103–115.
- Consortium for Research in Deaf Education (CRIDE) 2013. Report on 2013 survey on educational provision for deaf children. http://www.ndcs.org.uk/professional_support/national_data/uk_education_.html.
- Consortium for Research in Deaf Education (CRIDE) 2015. Report on 2015 (England) survey on educational provision for deaf children. http://www.ndcs.org.uk/professional_support/national_data/uk_education_.html.
- Crowe, Kathryn, David McKinnon, Sharynne McLeod & Teresa Ching. 2013. Multilingual children with hearing loss: Factors contributing to language use at home and in early education. *Child Language Teaching and Therapy* 29(1). 111–129.
- Crowe, Kathryn, Sharynne McLeod, David McKinnon & Teressa Ching. 2014. Speech, sign, or multilingualism for children with hearing loss: Quantitative insights into caregivers' decision making. *Language, Speech, and Hearing Services in Schools* 45(3). 234–247.
- De Raeve, Leo. 2015. Classroom adaptations for effective learning by deaf students. In Harry Knoors & Marc Marschark (eds.), *Educating deaf learners: Creating a global evidence base*, 547–572. New York: Oxford University Press.
- Emmorey, Karen, Helsa Borinstein, Robin Thompson & Tamar Gollan. 2008. Bimodal bilingualism. *Bilingualism: Language and Cognition* 11(1). 43–61.
- García, Ofelia. 2009. *Bilingual education in the 21st century: A global perspective*. Malden, MA & Oxford: Wiley/Blackwell.
- García, Ofelia & Li Wei. 2014. *Translanguaging: Language, bilingualism and education*. London: Palgrave Macmillan.
- García, Ofelia & Claire Sylvan. 2011. Pedagogies and practices in multilingual classrooms: Singularities in pluralities. *The Modern Language Journal* 95(3). 385–400.
- Guiberson, Mark & Jenny Atkins. 2012. Speech-language pathologists' preparation, practices, and perspectives on serving culturally and linguistically diverse children. *Communication Disorders Quarterly* 33(3). 169–180.

- Hauser, Peter. 2000. Code switching: American Sign Language and cued English. In Melanie Metzger (ed.), *Bilingualism and identity in deaf communities*, 43–78. Washington, DC: Gallaudet University Press.
- Hiddinga, Anja & Onno Crasborn. 2011. Signed languages and globalization. *Language in Society* 40(4). 483–505.
- Klatzer-Folmer, Jetske, Roeland van Hout, Esther Kolen & Ludo Verhoeven. 2006. Language development in deaf children's interactions with deaf and hearing adults: A Dutch longitudinal study. *Journal of Deaf Studies and Deaf Education* 11(2). 238–251.
- Knoors, Harry & Marc Marschark. 2015. Educating deaf students in a global context. In Harry Knoors & Marc Marschark (eds.), *Educating deaf learners: Creating a global evidence base*, 1–22. New York: Oxford University Press.
- Knoors, Harry & Marc Marschark. 2012. Language planning for the 21st century: Revisiting bilingual language policy for deaf children. *Journal of Deaf Studies and Deaf Education* 17(3). 291–305.
- Larsen-Freeman, Diane & Lynn Cameron. 2008. *Complex systems and applied linguistics*. Oxford: Oxford University Press.
- Leigh, Greg & Kathryn Crowe. 2015. Responding to cultural and linguistic diversity among deaf and hard-of-hearing learners. In Harry Knoors & Marc Marschark (eds.), *Educating deaf learners: Creating a global evidence base*, 69–92. New York: Oxford University Press.
- Lewis, Gwyn, Bryn Jones & Colin Baker. 2012. Translanguaging: Developing its conceptualisation and contextualisation. *Educational Research and Evaluation* 18(7). 655–670.
- Lindahl, Camilla. 2015. *Signs of significance: A study of dialogue in a multimodal, sign bilingual science classroom*. Stockholm, Sweden: University of Stockholm PhD Thesis.
- Li Wei. 2011. Multilinguality, multimodality, and multicompetence: Code-and mode-switching by minority ethnic children in complementary schools. *Modern Language Journal* 95(3). 370–384.
- Lucas, Ceil & Clayton Valli. 1992. *Language contact in the American deaf community*. San Diego: Academic Press.
- Mayer, Connie & Greg Leigh. 2010. The changing context for sign bilingual education programs: Issues in language and the development of literacy. *International Journal of Bilingual Education and Bilingualism* 13(2). 175–186.
- McConkey-Robbins, Amy, Susan Waltzman & Janet Green. 2004. Bilingual oral language proficiency in children with cochlear implants. *Archives of Otolaryngology–Head & Neck Surgery* 130(5). 644–647.
- Mahon, Merle, Debi Vickers, Kathleen McCarthy, Rob Barker, Richard Merritt, Gisela Szagun, Wolfgang Mann & Kaukab Rajput. 2011. Cochlear-implanted children from homes where English is an additional language: Findings from a recent audit in one London centre. *Cochlear Implants International* 12(2). 105–113.
- Mayer, Connie & Tane Akamatsu. 2000. Deaf children creating written texts: Contributions of American sign language and signed forms of English. *American Annals of the Deaf* 145(5). 394–401.
- Marschark, Marc, Harry Knoors & Gladys Tang. 2014. Perspectives on bilingualism and bilingual education for deaf learners. In Marc Marschark, Gladys Tang & Harry Knoors (eds.), *Bilingualism and bilingual deaf education*, 445–476. New York: Oxford University Press.

- Napier, Jemina. 2006. Comparing language contact phenomena between Auslan-English interpreters and deaf Australians. In Ceil Lucas (ed.), *Multilingualism and sign languages: From the great plains to Australia*, 39–77. Washington, DC: Gallaudet University Press.
- Ormel, Ellen & Marcel Giezen. 2014. Bimodal bilingual cross-language interaction: Pieces of the puzzle. In Marc Marschark, Gladys Tang & Harry Knoors (eds.), *Bilingualism and bilingual deaf education*, 74–101. New York: Oxford University Press.
- Ormel, Ellen, Daan Hermans, Harry Knoors, & Ludo Verhoeven. 2012. Cross-language effects in written word recognition: The case of bilingual deaf children. *Bilingualism* 15(2). 288–303.
- Otheguy, Ricardo, Ofelia García & Wallis Reid. 2015. [Clarifying translanguaging and deconstructing named languages: A perspective from linguistics](#). *Applied Linguistics Review* 6(3). 281–307.
- Pfau, Roland, Markus Steinbach & Bencie Woll, (eds.), 2012. *Sign language: An international handbook*. Berlin: Walter de Gruyter
- Pimperton, Hannah, Hazel Blythe, Jana Kreppner, Merle Mahon, Janet L. Peacock, Jim Stevenson, Emmanouela Terleksi, Sarah Worsfold, Ho Ming Yuen & Colin Kennedy. 2014. The impact of universal newborn hearing screening on long-term literacy outcomes: A prospective cohort study. Archives of disease in childhood. <http://adc.bmj.com/content/early/2014/11/24/archdischild-2014-307516.full>.
- Plaza-Pust, Carolina & Esperanza Morales-López (eds.). 2008. *Sign bilingualism: Language development, interaction, and maintenance in sign language contact situations*. Amsterdam: John Benjamins.
- Richie, Russell, Charles Yang & Marie Coppola. 2014. Modelling the emergence of lexicons in homesign systems. *Topics in Cognitive Science* 6(1). 183–195.
- Rinaldi, Pasquala, Maria Cristina Caselli, Daniela Onofrio & Virginia Volterra. 2014. Language acquisition by bilingual deaf preschoolers: Theoretical and methodological issues and empirical data. In Marc Marschark, Gladys Tang & Harry Knoors (eds.), *Bilingualism and bilingual deaf education*, 54–73. York: Oxford University Press.
- Sutton-Spence, Rachel & Bencie Woll. 1999. *The linguistics of British sign language: An introduction*. Cambridge: Cambridge University Press.
- Swanwick, Ruth. 2016. Deaf children's bimodal bilingualism and education. *Language Teaching* 49(1). 1–34.
- Swanwick, Ruth. 2015. Scaffolding learning through classroom talk: The role of translanguaging. In Pat Spencer & Marc Marschark (eds.), *The Oxford handbook of deaf studies: Language and language development*, 420–430. New York: Oxford University Press.
- Swanwick, Ruth, Karen Simpson & Jackie Salter. 2014. Language planning in deaf education: Guidance for practitioners by practitioners. *The National Sensory Impairment Partnership*. <http://deafed.leeds.ac.uk/>.
- Thomas, Ellen, Hussam El-Kashlan & Teresa Zwolan. 2008. Children with cochlear implants who live in monolingual and bilingual homes. *Otology and Neurotology* 29(2). 230–234.
- Verdon, Sarah, Sharynne McLeod & Sandie Wong. 2015. Reconceptualising practice with multilingual children with speech sound disorders: People, practicalities and policy. *International Journal of Language & Communication Disorders* 50(1). 48–62.
- Vygotsky, Lev. 1962. *Thought and language*. Cambridge: MIT Press.

- Waltzmann, Susan, Amy McConkey-Robbins, Janet Green & Noel Cohen. 2003. Second oral language capabilities in children with cochlear implants. *Otology & Neurotology* 24(5). 757–763.
- Willoughby, Louisa. 2012. Language maintenance and the deaf child. *Journal of Multilingual and Multicultural Development* 33(6). 605–618.
- Woll, Bencie, Rachel Sutton-Spence & Francis Elton. 2001. Multilingualism: The global approach to sign languages. In Ceil Lucas (ed.), *The sociolinguistics of sign languages*, 8–32. Cambridge: Cambridge University Press.

Appendix 1: Language landscape protocol

1 Government census information

- Size of population
- Comparison to other Local Authorities
- Breakdown of population by gender and age groups
- Nationalities within the population
- Ethnicities within the population
- Dominant languages used by residents
- Household languages used within the population and how proficient residents are at English

2 Local authority deaf education caseload population

- Numbers of children (0–19) on the caseload
- Age ranges (as numbers and a percentage)
- Level of deafness (as numbers and a percentage)
- Numbers of children with CIs
- Number of children in mainstream, resourced provision, Schools for the Deaf
- Ethnicity and nationality within the caseload
- Languages used within the caseload including sign languages

Appendix 2: Case studies protocol

1 Information from teacher's written reports on individual pupils

- Educational background and management: Experience of pre-school support and school placement
- Individual language resources: Repertoire of expressive and receptive sign and spoken language skills
- Contexts of language use: Language exposure and use at home, school and other settings
- Language assessment information: Measures, tools and protocols used to assess children's language development
- Individual language assessment data and reports
- Language learning trajectory: Target areas for receptive and expressive language development

2 Teacher interview

- Languages used by children and adults in your school.
- Languages the child is exposed to in school in different contexts.
- Languages that the child uses in school in different contexts.

3 Parent interview

- The languages that you and your family use at home.
- Who uses these languages, and when?
- Languages that your child uses at home.

4 Child interview

- Languages that your family use at home.
- Who uses these languages, and when
- Languages that you use at home.
- Languages that you use in school.

5 Observation

- The child in different situations in the school context (small group, shared reading; mainstream classroom; lunchtime, playtime)
- The child in conversation with parent(s) about a school or home activity.