Voice Into Text: Case Studies in the History of Linguistic Transcription

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Abstract

As a contribution to the field of linguistic historiography (Swiggers, 2010), this thesis offers a detailed narrative of the ‘mental worlds’ of writers tackling the task of transcribing languages both before the appearance of the International Phonetic Alphabet in 1888 and at a time when the IPA was emerging as the agreed standard for phonetic transcription. The narrative includes an account of how the cultural, historical and political background in which these writers operated, ultimately shaped their linguistic transcriptions. I argued that this approach, which also included observations drawn from fields other than linguistics, helped to provide a far richer illustration of their mental worlds, and that its omission would have rendered my analysis seriously deficient. This work has also demonstrated that the writers’ own linguistic training could also hinder, rather than aid, the transcription process. It has also therefore focused on how the authors mediated the tension between their pre-existing linguistic knowledge and the reality of the data they had to analyse. It has been argued that success in this context also resulted in a successful transcription.

The two corpora presented in this thesis are the Mohawk religious corpus held at the British Library, and the phonetic transcriptions of the British recordings included in the Berliner Lautarchiv, also at the British Library. Their peculiar characteristics, the challenges they posed to the transcribers, and the factors that led to their creation are discussed at length. With regards to the Mohawk corpus, the analysis has focused on the comparison of the notations of Mohawk by writers belonging to the French tradition and those by English-, German-, or Dutch-speaking authors. The analysis of the Berliner Lautarchiv corpus has instead focused on the phonetic transcriptions created by Alois Brandl, an Austrian Anglicist who was also a student of Henry Sweet.

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Chapter 1: Introduction

0. Original contributions

The thesis makes an original contribution to knowledge in two main ways. Firstly, it presents and analyses linguistic material either not previously discussed in the literature, or not discussed in enough detail; secondly, it applies a ‘mental worlds’ (or ‘history of mentalities’) framework to complement and enrich the methodology already established within the fields of the History and Historiography of Linguistics.

0.1 Material

Research on the *Berliner Lautarchiv*, as will be seen below, is still relatively new and scarce, and mostly concerned with its historical development and significance. Furthermore, while the *Lautarchiv* has been the object of linguistic study, this has been from the point of view of sociolinguistic and language change studies. As such, I am the first person to describe in any detail the kind phonetic transcription used in the *Berliner Lautarchiv*, and to add phonetic, phonological and historiographical observations to its analysis. As far as the Mohawk material, it goes without saying that the language has been dealt with before in the literature, quite widely. However, the different traditions that have described Mohawk (e.g. English, French, Dutch, etc..) have not been previously put side by side and compared in such an explicit and detailed way as I have attempted to do in this thesis.

0.2 Methodology

I believe my thesis also provides innovation and an original contribution in terms of the methodology used. While the main methodology follows that of the Historiography of Linguistics (see section 1.1), I also include, within this framework, the history of mentalities (or 'mental worlds') and a more direct connection to linguistic practice. This is not a common approach for linguistic study and even less common (if not unique) for the historiography of phonetics. I use the term "mental world" to refer to what has already been used in the literature, especially in historical studies, as 'mentalities', 'history of mentalities' or '*histoire des mentalités'*. The concept was introduced by Robert Mandrou and Georges Duby between 1956 and 1960.[1] As opposed to the 'historians of ideas', the 'historians of mentalities' focus on

> the environments in which people form their attitudes, and observed how tenacious can be the modes of resistance to intellectual change – the inertial power of habits of mind, conventions of speech, and visceral convictions that inhere in the common sense of tradition (Hutton, 1999: 801-2).

As will be seen in the course of this thesis, the theme of 'resistance to intellectual change' will play a crucial role in the analysis of the data. Thus, I do propose this approach to be used in addition to that already established within the Historiography of Linguistic. In addition to the questions of methodology, epistemology, the history of institution and the history of ideas, a layer is added by the history of mentalities that is firmly grounded in the relationship with primary sources and that makes more explicit the relations between linguistic theory and linguistic practice (and an explanation for possible divergences). The presentation of history of mentalities creates new paths of enquiry (how was the theory applied? why was it applied in a specific way? could it have been applied differently? what prevented a different approach?). It also serves to inform the interpretation of data. At the same time, the data enriches the history of mentalities, rendering this relationship mutually beneficial.

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[1] Traditionally, the creation of the concept has been attributed to Lucien Febvre and Marc Bloch (Hutton, 1999).

1.0 Introduction and aims: what [d] can tell us

The aim of the phonetic transcriber is to make us ‘see’ the speech sounds we hear by providing a visual representation of unknown languages, unfamiliar accents, uncommon phonemes. However, as Heselwood (2013: 1) obviously observed, ‘[t]he medium of sound and the medium of writing are of course very different, having absolutely no common forms or substance whatsoever’. Thus, the task of the phonetic transcriber is to bridge the gap between speech sounds and text, or, as the title of this thesis recites, to turn ‘voice into text’. While still not an easy feat, phonetic transcription as a process is now more straightforward. This has obviously not always been the case in the past. The absence of a shared system, as was the case before the official appearance of the International Phonetic Alphabet in 1888 and before its establishment as the agreed standard in the scientific community, demanded a high degree of ingenuity, creativity, resourcefulness and adaptability, in addition to other most obvious requisites, such as being blessed with a good ear for linguistic detail. The lack of a common standard was not the only obstacle. Other impediments, which will be discussed at length in this thesis, included a variety of very practical issues, such as the lack of an easily accessible printing press, of a wide enough selection of printing characters, of durable recording media, of cooperative speakers, or of helpful instrumentation. One aim of this thesis is thus to discuss how (and whether) these barriers have been overcome.

While it might initially appear counterintuitive, the greatest barrier was perhaps linguistic knowledge. During one of my many supervisory meetings, I came up with what I think would have been a very effective subtitle to the main title of this thesis, if not a bit less-than-scientific for the occasion: ‘You hear what you know (and what you know is complicated!)’. Another aim of this thesis is therefore to explore the idea that what was consciously or subconsciously known about a specific language or about languages in general could shape how transcribers approached unfamiliar languages or foreign dialects. The truthfulness of this statement and the impact it had on the transcription systems and the writers that will be presented, will be discussed thoroughly in the following sections.

In the preface of his book,[2] Heselwood (2013: i) imagined his audience's reaction upon being presented with a work about phonetic transcription: 'What, it might be asked, can [d] ever tell us that spectrograms, palatograms and the like cannot?'. The last aim of this thesis is to attempt to answer this very question. The will to find out what insight into the history and practices of linguistic transcription a simple written character has to offer, has inspired the *modus operandi* of my research. It has also greatly influenced the point of view from which the linguistic corpora have been analysed. This thesis is not primarily concerned with establishing, for example, how successful a [d] was in representing the sound /d/, although considerations of this kind will be obviously presented. Indeed, no 'spectrograms, palatograms and the like' will appear in it. In other words, this thesis will present explanations as to why a particular symbol (or group of symbols) was chosen to represent a particular phoneme by discussing the contextual, cultural, and theoretical backgrounds in which the writers operated and that ultimately shaped what appeared on paper. I have therefore focused on the exploration of the 'mental worlds' of the transcribers, that is, on the intricate interactions between personal attitudes, linguistic knowledge, political and cultural influences, theoretical assumptions and practical limitations, and on how these converged to create linguistic transcriptions.

Hopefully, this is what [d] will be able to tell us.

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[2] *Phonetic Transcription in Theory and Practice* (2013).

1.1 Theoretical context of research

The interdisciplinary narrative that this project aims to offer allows, I believe, for it to be placed alongside other works in linguistic historiography. In particular, in identifying the theoretical context of this thesis, I have followed Swiggers's (2010: 2) definitions of the field, which states that

> [l]inguistic historiography is a discipline which lies at the intersection of *linguistics* (and its methodology), *history* (history of socio-cultural and institutional contexts), *philosophy* (ranging from the history of ideas and *epistêmês* to the history of philosophical doctrines), and the *sociology of science*. To put it briefly: linguistic historiography offers a description and explanation of the history of contextualized linguistic ideas. [...] It asks, and tries to answer, questions such as: how has linguistic knowledge been gained? how has it been formulated? how has it been diffused (within 'participating' circles)? how has it been preserved? [...] (italics are the author's own).

The fields of history and historiography of linguistics have witnessed an increase in 'popularity', with Koerner going as far as describing it as a 'fashionable area of scholarly interest' (Koerner, 2009: 481). This positive development has been accompanied by the growth of another concept in academia, that of 'interdisciplinarity', allowing researchers to 'break away from scholarly isolation and too narrow a focus' (Langer, Davies and Vandenbussche, 2011: 3). It goes without saying that I fully recognise my own limitations in the fields of historical research, its methods and conventions. However, in my narrative,[3] I have indeed sought to include considerations of a historical nature, with the aim of providing a more detailed, multi-layered and more contextualised discussion of the linguistic transcriptions presented in the case studies. I argue that without the inclusion of historical observations, the linguistic data discussed in this project would have not allowed the reader to gain an understanding of the rationale behind the linguistic choices made by different writers in their linguistic notations. Moreover, failure to consider historical issues would have seriously hindered the interpretation and discussion of the linguistic data itself, and would have left them inexcusably incomplete. Instead, as suggested by Langer, Davies and Vandenbussche (2011: 9), this thesis uses History 'as a linguists' 'tool', where historical findings incidental to linguistics bear a direct relevance in informing its work'.

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[3] 'As history-writing, all instances of linguistic historiography will to some extent involve a 'narrative' account' (Swiggers, 2010: 5).

The amount of publications on the history and historiography of linguistics, as mentioned, has been increasing in recent years, as well as the creation of societies and institutions dedicated to this field. The last decade has seen, for example, the birth of *Language and History* (formerly the *Bulletin of the Henry Sweet Society for the History of Linguistic Ideas*), which began to be published twice a year since May 2009, the launch of the electronic journal *Revista Argentina de Historiografía Lingüística* also in 2009, the foundation of the Society for the History of Linguistics in the Pacific in 2008, the appointment of Professor Andrew Linn as the first chair of a History of Linguistics course, which was created at this University in 2003 (Koerner, 2009). It fills me with pride that Koerner (2009: 483-484) also included this very project in his list of promising developments in the fields of history and historiography of linguistics:

> On 19 June 2009 the LINGUIST list carried the following message from Dr Richard Steadman-Jones, according to which the Department English Language, Literature & Linguistics of the University of Sheffield is offering '[a] funded PhD studentship in the History of Linguistics […]. The studentship will begin in September 2009 and is part of a project called 'Voice into Text: Case Studies in the History of Transcription'.

Articles or chapters on the history of linguistic transcription are generally included in any general volume on phonetics, on the history of phonetics, or on the history of linguistics. These contributions generally include a discussion on the canonical works that ultimately culminated in the creation of the IPA such as, to name but a few of the most prominently featured ones, the notation systems of Hart, Lodwyck, Bullokar, Wilkins, Walker, Bell (Alexander Melville), Lepsius, Pitman, Ellis, Sweet, Passy, Jones, Pike, or Jespersen.

These accounts have been vital for the completion of this project, which has relied especially on the works by Albright (1953), Wellisch (1978), Kelly (1981), Kemp (for example, 1994 and 1999) and MacMahon (for example, 1996 and 2001) for discussions related to the general history and development of phonetic transcription. However, up until the last 5 years, no books had been dedicated solely to the topic of linguistic transcription. Heselwood's *Phonetic Transcription in Theory and Practice* was only published in 2013, and is the first book of its kind to offer a systematic, thorough and comprehensive account of phonetic transcription, from its origins, developments, uses, typologies, and theoretical foundations. 2011 saw the publication of another volume dedicated to linguistic transcription, albeit this time focused on those used for the transcription of the English language: *Systems for the Phonetic Transcription of English: Theory and Texts* by Monroy-Casas. This volume has a narrower scope than Heselwood's, but its overview on current transcriptional practices, as well as its discussion on historical developments and its section on practical exercises, make it a very valuable addition to the field.

1.2 General structure and summary

This thesis includes two main Case Studies (Chapter 2 and Chapter 4) and a 'bridge' section (Chapter 3) connecting the two, both chronologically and theoretically. Finally, a general conclusion and proposals for further research are presented in Chapter 5. Case Study 1 (Chapter 2) analyses the orthographic renditions of North American languages between the 16th and the 19th century and the contributions to this field by French, Spanish, English, Dutch and German missionaries. The chapter opens with a visual comparison between the orthographic rendition of the Book of Common Prayer in Mohawk by the Canadian-born and French-speaking missionary Joseph Marcoux and that by the Mohawk and English-speaking catechist John Hill. This visual aid means to introduce the reader to some of the ‘problematic sounds’ in Mohawk posing challenges to the transcribers of different traditions, and to provide an initial outline of how different orthographic solutions have been adopted by writers of different native languages. In particular, the study looks at the notation of nasal vowels, of the sound /h/ and of the plosives /p/, /t/ and /k/. The Case Study continues with an overview of previous academic work on Missionary Linguistics, presenting the views of those scholars, like Oesterreicher and Schmidt-Riese (1999), who proclaimed it void of any linguistic or scientific merit, and the rationale behind this attitude. However, the section also includes a detailed outline of the works of those authors, like Hanzeli (1969), Mithun (1999), Zwartjes and Hovdhaugen (2004b), Smith-Stark (2005) and Tomalin (2011), who sought to restore credibility to Missionary Linguistics, and to highlight the incredible importance that Missionary contributions had in furthering our knowledge of now-extinct languages and in shedding new light on a neglected chapter in the History and Historiography of Linguistics. Case Study 1 also presents a thorough discussion of the contextual, historical, cultural and theoretical background in which the North American religious corpus was created. It also includes an explanation of the different personal attitudes of European missionaries towards the Native American populations, and the effects these had on their linguistic works. Moreover, Case Study 1 investigates the impact that the academic education and experiences of the missionaries, and in particular, their study of Latin, Ancient Greek and Biblical Hebrew, had on their renditions of North American languages. While presenting an overview of early works in and about other North American languages, such as Delaware, Huron, Massachusett, or Narragansett, the Case Study focuses on the Mohawk religious corpus held at the British Library, due to the abundance of works in this language and to the singular convergence of different missionary traditions involved in its study.

Chronologically speaking, Case Study 2 (Chapter 4) runs parallel to the development and establishment of the IPA as an agreed universal standard. The Case Study analyses the phonetic transcription of the speech of 66 British soldiers, held in Prisoner of War camps during the First World War, by the Austrian-born linguist Alois Brandl. These are included in the *Berliner Lautarchiv*, a section of which, the British and Commonwealth Recordings, are also held at the British Library. The Case Study begins by providing an introduction and a description of the *Berliner Lautarchiv*, the brainchild of a former German schoolteacher and pioneer of audio recording, Wilhelm Doegen. A brief history of its creation and development is presented, along with an outline of its main structure and content, and of the rationale behind its conception. The Case Study continues with a discussion of the existing literature dedicated to the *Berliner Lautarchiv* which, however, does not include specific comments on the phonetic transcription used by Brandl or any of the other language experts who contributed to the project. Nonetheless, the academic works devoted to the *Lautarchiv* have helped me provide a thorough exploration of the political, contextual and cultural background surrounding the creation and the expansion of the *Berliner Lautarchiv*. This exploration has involved a multi-disciplinary approach, including observations drawn from the fields of Anthropology, Linguistic Anthropology, Ethnography, History, Dialectology and Musicology, as well as comments on the technological advances in the fields of audio recording and reproduction and of speech analysis. These considerations also contribute to inform the discussion of the problematic nature of data collection and data analysis in the *Lautarchiv*. The Case Study carries on with a discussion of linguistic-related developments which shaped the *Berliner Lautarchiv* and the transcriptions within it, such as the rise of Experimental Phonetics and the related developments in the study of anatomy and physiology, the move from articulatory to acoustic phonetics, the appearance of the ‘Phonetic Method’ and of phonetic script in the teaching of Modern

Languages, or the emergence of Dialectology as a discipline. These linguistic-based influences are also discussed in light of the impact they had on the linguistic works of both Doegen and Brandl. However, due to having authored the transcriptions analysed in this thesis, Brandl's linguistic production, the theoretical background that has shaped it, and his personal and academic relationship with Henry Sweet, are explored in far more detail. The Case Study focuses in particular on Brandl's transcription of vowels of various British dialects, analyses similar techniques used by other international authors and discusses key points of convergence or divergence.

Chapter 3 is, as I have commented above, a 'bridge section', providing both a chronological and theoretical link between Case Study 1 and Case Study 2. This section explores the period between 1788, the year of William Jones's famous *Dissertation on the orthography of Asiatick words in Roman letters*, and 1888, the year of the first appearance of the International Phonetic Alphabet in the pages of the *də fonetik tîtcər.* The discussion begins at the end of the eighteenth century with matters related to the transliteration of foreign scripts and the debate over the employment or the Roman alphabet for this purpose. As it will be seen, despite initial difficulties, the Roman alphabet emerged as the most suitable basis for phonetic notation for a series of reasons, mostly practical, that are explained in the course of the discussion. The next issues to be faced were related to the choice of a notation system to be selected among those which had a Roman base. At the end of the eighteenth century the two most popular transliteration methods, of which a description is provided in the chapter, were those of William Jones, Nathaniel Brassey Halhed and John Borthwick Gilchrist. The chapter presents a clear account of the disputes that took place and that stated the superiority of the Jonesian system extracted from the collection of papers published by Monier-Williams (1859). This section also shows how similar debates were taking place in

France, where the aim was the pursuit of a universal alphabet. The French statesman Volney, who was also dissatisfied with the fragmented situation lamented by British scholars, inaugurated a Prize in his name to promote the creation of a suitable system for both transliteration and transcription. It will be shown, however, that none of the entries for the Prize were judged to be a satisfactory solution to the question. The following sections deal with the shift from transliteration to transcription, promoted by the development of the phonetic sciences. The chapter illustrates how such an evolution imposed the need for even more sophisticated models of transcription, and how scholars have attempted to address this requirement. A description of Ellis and Pitman's 1847 Alphabet and of Ellis's Palaeotpye is presented, especially in light of the impact these alphabets had on the development of the IPA. Moreover, this section offers a description of the contributions that came from Church organisations, missionaries, and other academics that worked in collaboration with such institutions. Lepsius and Müller played a key role in this context, although, as will be shown, their systems were not successful enough and were never adopted. American contributions are also taken into account, and the chapter deals in particular with Haldeman's proposals. Following this, the chapter continues by providing an account of Henry Sweet's work, and describes his Romic transcription system, his early theorisation of the phonemic principle and the relevance his efforts had with respect to the IPA. It will be shown that many of the symbols employed in the IPA were already present in Sweet's Romic, which was however influenced by Ellis and Pitman's Alphabet. Finally, the discussion ends with an account of the origin of the International Phonetic Associations, of the Principles that guided the creation of the IPA, and of the development, strengths and weaknesses of the IPA itself.

Therefore, Chapter 3 provides a chronological and theoretical connection between the two case studies, offering an element of continuity, albeit with some overlap. This section includes a description of the field of Missionary Linguistics, and how it reignited discussions on the need for a standardised system of notation, and inspired authors like Lepsius to create transcription alphabets with a physiological basis. Chapter 3 also examines the rise of experimental phonetics and the contributions to this field by Henry Sweet. As will be seen in Case Study 2, both Lepsius and Sweet had a significant influence on the development of Brandl’s transcription system, and on the advancements in acoustic, articulatory and instrumental phonetics which paved the way for the creation of Doegen’s archive.

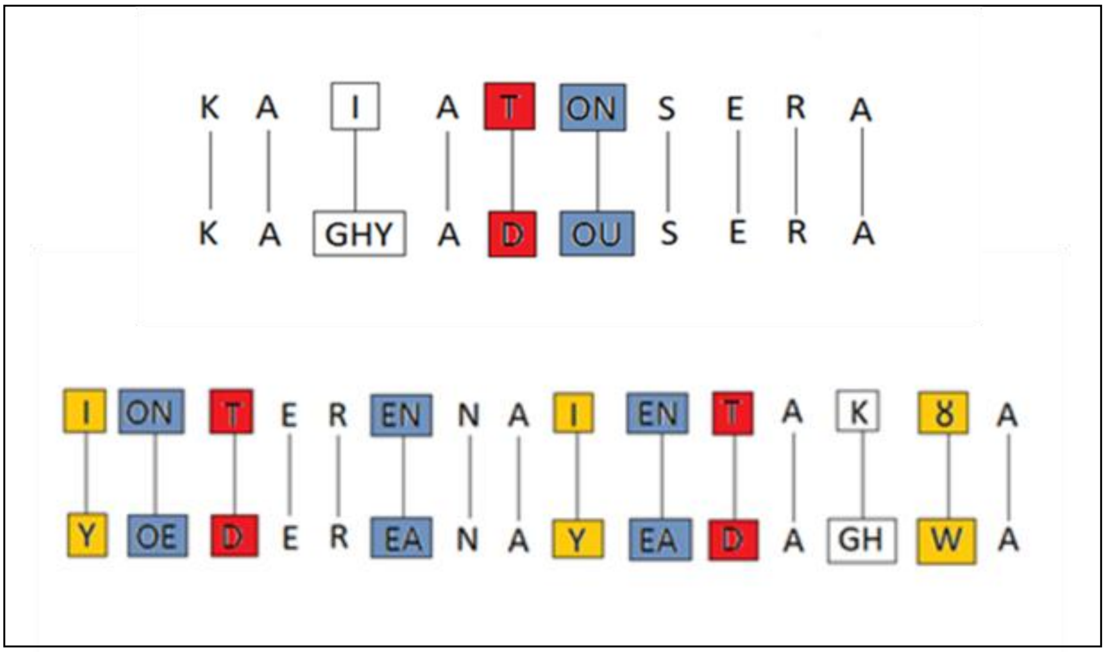
The section also describes a significant shift in the main function that linguistic transcription had to serve. A key difference between the transcriptions featured in Case Study 1 and Case Study 2 lies in their purpose and in their theoretical foundations. In the case of missionaries, for instance, reducing Native American languages to Roman letters was a necessity and a vital tool for survival, a way to hand down and preserve linguistic knowledge for following generations, and a means to evangelise new populations. Brandl and Doegen, on the other hand, were motivated by radically different reasons, and operated in a time when the need for transcription to be based on the articulatory or acoustic properties of speech sounds was indisputable. Thus, Chapter 3 features the move from ‘utilitarian’ orthographic renditions of languages to transcriptions created for the advancement and fulfilment of scientific knowledge. Also, a key is the shift from transliterations, or orthographic renditions, to phonemic or phonetic transcriptions, as well as the ‘discovery’ of the phoneme or, at least, of its articulation in explicit terms.

Due to the radical differences in the typological characteristics of the corpora in the two case studies, the methodologies will be discussed in the relevant chapters. Similarly, each case study will also include an overview and a discussion of the relevant literature and academic contributions available on the topic.

Chapter 2: 'Armes necessaires à la guerre': The Linguistic Transcription of Native American Languages (examples from the Mohawk religious corpus at the British Library)

Introduction

2.0 Introduction: The linguistic transcription of Mohawk



K A I A T ON S E R A
K A GHY A D OU S E R A
I ON T E R EN N A I EN T A K ȣ A
Y OE D E R EA N A Y EA D A GH W A

Figure 1: A comparison between the translation of titles of the Book of Common Prayer into Mohawk by a French-speaking and an English-speaking writer.

Above is a chart comparing French and English orthographic renditions of book titles in Mohawk, which are translations of liturgical texts (the titles have been separated into two parts for ease of formatting). The upper text represents the French translation by Joseph Marcoux (1852), the joined title being *Kaiatonsera Ionterennaientakȣa*, while the lower text represents the English translation by John Hill (1842), *Ne Kaghyadousera Yoedereanayeadaghwa*. Both texts are a translation of the Book of Common Prayer into Mohawk. The chart means to highlight some of the 'problematic sounds' that characterise the linguistic transcription in the British Library Corpus, as well as pointing out the different solutions adopted by writers of different native languages. By no means exhaustive, it is hoped that it will help the reader visualise some of the issues that will be discussed in this section.

This initial comparison of nineteenth-century Mohawk translations of Bible passages by French and English speaking authors paints an interesting picture. In the French texts, authored by Marcoux and Cuoq, only <k> appears. In Marcoux's *Kaiatonsera Ionterennaientak8a ne Teieiasontha [...]* and in Cuoq's *Kaiatonsera Ionte8ienstak8a* there are no occurrences of <g>. Different is the case of texts by German or English-speaking authors, where <k>, <g> and <gh> all appear. It is also interesting to note that in his *Études philologiques sur quelques langues sauvages de l'Amérique* (1866) Cuoq includes /g/ in the inventory of sounds for Algonquian languages, but does not include it in the inventory for '*la langue iroquoise*' (Cuoq, 1866: 8).

In most Algonquian languages, which constitute the centre of Hanzeli's analysis, the voicing of stops is non-contrastive. This is also true of some Iroquoian languages, and it is the case for Mohawk, where plosives are underlyingly voiceless and are realised as voiced in particular contexts. In this language /k/ is realised as [g] before glides and before vowels. (Hanzeli, 1969; Mithun, 1979). In the case of Algonquian languages, Hanzeli noted that missionaries found the distinction between /k/ and /g/, but also between /t/ and /d/ and /p/ and /b/, particularly unclear and difficult to identify with any degree of certainty, but were nonetheless aware of the complementary distribution of these stops. However, this uncertainty meant that missionaries often transcribed what they thought they heard in relation to what they were used to, that is the phonological system of French and of other European languages, in which voicing of these plosives is contrastive. As Hanzeli goes on to note, missionaries alternated between <k> and <g> 'not only from one manuscript to another but from entry to entry on the same page' (Hanzeli, 1969: 77) (Examples will be shown in the following sections).

2.1 A crucial observation

In his study, Hanzeli (1969) made an observation that is crucial to this project: 'The missionaries' transcription was ultimately shaped not by the sounds but by the letters they knew' (Hanzeli, 1969: 81). In other words, Hanzeli simply pointed out that pre-existing knowledge, in this case specifically of orthographic conventions of their native language - or of Latin, Greek, or other Classical languages studied in that era - shaped what went into the transcription, as opposed to what was heard. In more general terms, it can be observed that knowledge of the language sounds and more generally of the phonological processes of one's own native language, or other known idioms, dictated in many cases what appeared on paper, sometimes to a greater degree than the ear suggested. This observation might at first seem rather obvious, but highlights quite a significant aspect of early Missionary Linguistics, that is, a sort of 'bricolage attitude'[4] towards language description, so to speak. When approaching Native American Languages, missionaries were confronted with the unsuitability of the Greco-Latin framework for the description of these alien idioms. Other languages outside this tradition, such as Arabic, Hebrew, or Chinese, just to name a few, offered a complementary model of language description that could be applied to the analysis of new languages and remedy the shortcomings of Latin and Greek, especially in terms of phonetic and syntactic features. Obviously, this is not because Arabic or Hebrew were more similar or related in any way to Native American languages, certainly no more than the Classical languages were, but they represented an alternative and an additional aid. To better explain what I mean with the expression 'bricolage attitude', I'll propose a simile: one has to think of knowledge of different languages as tools that a missionary has to work with in order to create a grammar. The tools might not be the best suited for the job, but they are available, and will therefore be employed as much as possible. One can only work with what one has.

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[4] I thank Dr. Richard Steadman-Jones for suggesting the expression.

The assumption that the knowledge we possess influences heavily and aids our theoretical or practical outputs seems straightforward and self-evident. However, it is important to note the extent to which pre-constructed notions could be a hindrance to the process of missionary linguistic transcription in the sixteenth, seventeenth and eighteenth centuries, and not only in the case of missionaries.

The truthfulness, or the degree of truthfulness, of this last statement has been debated in the literature, if not sometimes overexploited as a dismissive argument against the value of Missionary Linguistics. Most studies have dealt with grammar exposition and syntactic analyses; on the other hand, in-depth observations about phonetic description and phonological processes in the missionary corpus have been less common in the literature. Such studies seem to have been carried out more frequently within research on the Spanish linguistic production, but the opposite is however observable with regards to works belonging to the English and the French traditions, with the exception perhaps of the excellent study by Hanzeli (1969) and only a few more. This, however, is not too surprising, at least when considering the intrinsic characteristics of the missionary corpus and the issues they pose for academics. One of the biggest issues for this project, and especially for philological research and historical linguistic works, has been establishing whether a transcription is the result of phonetic observation or a by-product of orthographic conventions. A typical example is the letter <c>, which can represent the sounds /k/, /s/ or /tʃ/ according to nationality of author, spelling conventions in place at the time of writing, availability of character at the printing house, and sometimes even the personal preference of the author. These are obviously to be added to diachronic changes and dialectal variations of the languages described. In summary, it is necessary to take into account the following possible scenarios, and also consider that more than one might be in place at once:

- the difference between authors of different nationalities is merely typographical (which includes printing mistakes);
- it is due to the different phonological processes in place in French, English, German, or Dutch as internalised by the author, which influence phonological perception;
- it is due to differences in phonetic awareness and perception (which can be individual)
- it is a reflection of the spelling system in use at the time;
- it is idiosyncratic;
- diachronic variation has occurred;
- dialectal variation is in place.

Other factors that come into play are of a less practical nature and are more strictly related to multi-layered theoretical issues. The relationship between the Classical education of the missionaries and their approach to Native American languages, and the wider cultural background of seventeenth and eighteenth century will be discussed in later sections. However, the core of this study lays in the investigation of how and to what extent the grammarian’s native orthography, native phonological process and individual linguistic knowledge have shaped the linguistic transcriptions and language translations in the missionary corpus. It is very interesting to note how the concept of ‘cultural baggage’[5] can also be applied to this context, offering a particularly engaging and challenging point of view.

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[5] Quite appropriately, Darret B. Rutman applied the term in his *A place in time: Middlesex county, Virginia 1650-1750* (1984) to the North American context.

2.2 The importance of Missionary Linguistics

2.2.1 Views on Missionary Linguistics: negative attitudes

Missionary Linguistics has often been neglected within the fields of History and the Historiography of Linguistics and its importance underestimated or even negated, despite the quantity of linguistic works produced by missionaries, such as grammars, dictionaries or translations of the Bible, often in languages with no previous written form, for many of which they introduced alphabetic and iconic writing (Zimmermann, 2004; Zwartjes and Hovdhaugen, 2004b). In his essay published as part of the first volume in the *Missionary Linguistics/ Lingüística Misionera* series (see later sections), Zimmermann (2004) observed that the attitude towards Missionary Linguistics has been far from positive in many cases. In general, as Zimmermann argued in quite strong terms, modern and contemporary linguists have been perpetrating something which is, in the author's view, nothing short of an *'historiografía difamatoria'* (2004: 15) towards this area of study and towards the value of its outputs and of its protagonists, committing an act of '*falsificación de la historia al respecto*' (2004: 11), an attitude which he considers rather harmful to Missionary Linguistics and to the advancement of the Historiography of Linguistics itself.

Zimmermann[6] identifies the main areas of criticism. The most worrisome, according to the author, are that Missionary Linguistics cannot be included in the realm of Language Sciences because it belongs to the 'prehistory' or '*Vorgeschichte*' (2004: 14) of Linguistics, and that the outputs of the linguistic works of the missionary possess no scientific value, and are not based on scientific methods. The arguments supporting these opinions, as outlined by Oesterreicher and Schmidt-Riese (1999)[7], whose article is used by Zimmermann as the main dialectical counterpart, are of a chronological and of a qualitative nature. Firstly, Oesterreicher and Schmidt-Riese said, Missionary Linguistics largely occurred before what is traditionally considered as the start of Linguistics as a science, that is, the advent of Comparative Linguistics at the end of the nineteenth century, following Auroux's tradition. Secondly, Missionary Linguistics, and the missionaries themselves, had different and mainly practical objectives motivating their linguistic efforts. Thirdly, the works were purely '*una forma de reflexión sobre la lingua'* (2004: 17), similar to many other 'amateurish' language descriptions, again, devoid of scientific merits and without foundations on scientific methods.

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[6] Observations on the negative attitude towards Missionary Linguistics can also be found in Hanzeli (1969), Mithun (1999), Zwartjes and Hovdhaugen (2004b), Smith-Stark (2005), Tomalin (2011).

Another central point of criticism was also the perceived excessive reliance of missionaries on the analytical models employed in the study of Classical languages, Latin and Greek, and the missionaries' attempt to impose such investigative schemas and grammatical categories onto unknown languages (Hanzeli, 1969; Zimmermann, 2004; Zwartjes and Hovdhaugen, 2004b; Smith-Stark, 2005; Tomalin, 2011). These were perceived to act like a ' '*camisa de fuerza' que prohibía el método adecuado e impedía el reconocimiento de las estructuras verdaderas de las lenguas respectivas*' (Zimmermann, 2004: 15 - see later sections for a discussion of the role of Latin in the linguistic works of the missionaries).

2.3 A change of course: revaluation

Missionary Linguistics, then, requires a complete revaluation, not on ethical grounds, as maintained by Oesterreicher and Schmidt-Riese, but for a series of other reasons, which various authors, like Hanzeli, Zwartjes, Mithun, Hovdhaugen, Smith-Stark, Zimmermann and Tomalin, to name but a few, have outlined in their works.

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[7] 'Amerikanische Sprachenvielfalt und europäische Grammatikkonzeption: Missionarlinguistik im Epochenumbruch der Frühen Neuzeit', *Zeitschrift für Literaturwissenschaft und Linguistik, 2*9(116): 62-100

Firstly, it is imperative to recognise that many missionaries were not completely conditioned by the frame of Latin grammar, and that missionaries did not just blindly and indiscriminately apply Graeco-Roman formal models to North American languages (Zwartjes and Hovdhaugen, 2004b; Smith-Stark, 2005; Tomalin, 2007; 2011). As Mithun (1999) put it, ‘many did remarkably well, recognising phonetic and grammatical distinctions not present in European languages’ (1999: 5). Hanzeli (1969) pointed out that missionaries were, at least as far as the works covered in the scope of his study are concerned, highly accurate in identifying numerous phonetic features, and although not as precise as we would expect contemporary transcriptions to be, ‘they are far from being as whimsical and incomplete as their critics have claimed them to be’ (Hanzeli, 1969: 100).

Secondly, it is inappropriate and unreasonable to deem as unscientific methodologies applied in the past under the light of contemporary developments in the linguistic sciences and of the knowledge about language we now share as a scientific community. What is deemed as scientific has changed over the centuries, Zimmermann observed (2004), and although not valid or recognised now, the methods applied by missionaries were shared and common within that community, in a different historical period and in a different part of the world, and admitted as legitimate by them. The fact that now we have gained more knowledge on the structures of language and are able to make more accurate and informed observations on them, also thanks to the development of the tools now available to us, should not deny the merits of much of the work that occurred before our times.

Finally, the corpus of missionary linguistic work offers an invaluable wealth of information on many extinct languages that would have been cast into oblivion, were it not for the missionaries' accounts, especially between the sixteenth and the nineteenth century. In addition, the description and analysis of the methodologies and approaches that brought these works to light should provide a very valuable contribution to the development of the Historiography of Linguistics.

2.4 Missionary Linguistics: Recent academic developments

Studies on Missionary Linguistics have increased in number in the last 15 years, as academics have begun to appreciate the linguistic value of earlier accounts and descriptions and their contributions to studies of these languages. A result of this improved state of affairs is the launch of the International Conferences on Missionary Linguistics[8] in Oslo in 2003, which gave rise to a series of volumes, entitled *Missionary Linguistics/ Lingüística Misionera,* and which provide an invaluable account of the developments in this field (Zwartjes and Hovdhaugen, 2004b; Tomalin, 2011). Also noteworthy are various volumes edited by Otto Zwartjes et al. (2004; 2005; 2007), *...and the Word was God. Missionary Linguistics and Missionary Grammar* edited by Even Hovdhaugen (1996a), *Languages Different in All Their Sounds… Descriptive Approaches to Indigenous Languages of the Americas 1500-1850* edited by Elke Nowak (1999), *The Language Encounters in the Americas 1492-1800,* edited by Gray and Fiering and published in 2000. Also worth mentioning are other individual contributions by Smith-Stark (2005), Schreyer (1999; 2000), Swiggers (2007), Tomalin (2008; 2011), Koerner (1995; 2004a; 2004b), and Zimmermann (2004), just to cite a few of the works that have been particularly useful to this project.

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[8] The First International Conference on Missionary Linguistics took place in Oslo, 13-16 March 2003; the Second in São Paulo, 10-13 March 2004 (*Orthography and Phonology*); the Third in Hong Kong/ Macau, 12-15 March 2005 (*Morphology*); the Fourth in Valladolid, 8-11 March 2006 (Syntax); the Fifth in Mérida, Yucatán, 14-17 March 2007 (*Lexicography*); the Sixth in Tokyo, 16-19 March 2010; the Seventh in Bremen, 28 February-2 March 2012 (*Impacts of Colonial Thinking on Intercultural, Transcultural and Translational Processes and the Influence of the Missionized Other in Missionary Linguistics*).

A precursor to these works, Hanzeli's *Missionary Linguistics in New France: A Study of Seventeenth- and Eighteenth-Century Descriptions of American Indian languages,* published in 1969, was, and still is, a great contributor to the cause of shedding light on the linguistic works and the achievements of missionaries operating in America North of Mexico from a more objective and more positive point of view. Hanzeli's study is an extremely detailed account of the experience of French Jesuits in the New France territories, and his description of the missionaries' linguistic practices and of their cultural and educational influences are most illuminating and helpful to this field. Far from painting an overly-enthusiastic picture, Hanzeli is very realistic about achievements and flaws in the missionary corpus, as will be seen in later sections.

2.5 Missionary Linguistics within the field

As Koerner (2009) noted, this trend is part of the larger interest that has concerned the History and Historiography of Linguistics in the past years. This has encouraged an increase in the activities of several societies and associations dedicated to this field, such as the Henry Sweet Society, which has responded to this new state of affairs with the creation of the journal *Language and History,* the establishment of new societies, such as the Society for the History of Linguistics in the Pacific, the institution of dedicated thematic centres, like the Center for the Historiography of Linguistics, the appearance of new journals, for example the *Revista Argentina de Historiografía Lingüística*, in addition to the abovementioned publication, the promotion of research in this field, of which this project is an example.

Another reason for the revaluation of Missionary Linguistics, to be added to the ones already mentioned above, has to do with its place in the Linguistic Sciences.

Oesterreciher and Schmidt-Riese proposed that the practical nature and aims of Missionary Linguistics deny its status as a Linguistic Science. Zimmermann (2004), however, includes Missionary Linguistics with the sub-disciplines of Applied Linguistics, as most of the linguistic outputs were conceived as learning aids for other missionaries. As such, it then finds a legitimate place within the sciences of language. To know more about Missionary Linguistics is also to know more about earlier stages of Applied Linguistics.

More specifically, the renewed interest in Missionary Linguistics is motivated by the will to offer a more objective view of the accomplishments and merits of the missionary material. These and other studies, and deeper analysis of this corpus of work, tend to demonstrate that the picture is a rather complex one, far from the black-and-white approach that has been described above. It is imperative, desirable, and extremely useful to offer descriptions and an analysis of the missionary linguistic outputs that take into account as wide and comprehensive a background as possible, including social, educational, political, historical, and epistemological factors, and, whenever possible and useful, even personal or biographical ones.

2.6 Aims

The kinds of idiosyncrasies that have been presented at the beginning of this chapter are by no means only found in Mohawk, but are commonly found when analysing Native American languages as transcribed by authors of different nationalities. However, the comparison between French and English writers above, as it only takes into account a very small portion of the corpus, only means to be an example and a brief description of the issues that can be encountered when analysing linguistic transcription in the context of Amerindian languages, which will be discussed in more detail in this section. It is however worth keeping in mind that the uncommon occurrence of overlap of two traditions within the same language area, or wherever overlap occurs, of a significant variety of material, renders a comparative analysis of this kind extremely difficult. Nonetheless, I believe that such an endeavour will still provide an interesting insight into different theoretical levels, and this can be meaningful for observations on phonetic perception, phonological analysis and the influence of native orthography in the transcription of nineteenth century religious works, all of which represent, in my opinion, some of the most interesting *desiderata* in this field. At the end of his ‘Notes on Missionary Linguistics in North America’ chapter included in the first volume of the *Missionary Linguistics* series (2003), Koerner (2004b) concludes:

> One point that I have not at all touched upon in this paper is the issue, usually not thematised in historical accounts [...], is the extent to which the orthographic conventions the native tongue of these missionaries (sic) (and of course their phonology) influences their rendering of the linguistic material which they gathered from their informants, i.e., what we today would call their phonological notations (Koerner, 2004b: 73)

The aim to respond to Koerner’s statement has been the guiding objective of this Case Study. However, I have attempted to paint a much fuller picture. Although the data is organised around the inter-linguistic comparison among different traditions, it is obviously acknowledged that the divergences in the various traditions cannot be solely ascribed to the native language of the writer as a whole, although this is considered to be an influencing factor. For this reason, rather than only concentrating my observations on strictly linguistic issues to account for the data presented, my effort has been to provide a multi-layered account of the linguistic, cultural, educational, social or even personal processes that have resulted in the orthographic renditions of Mohawk in this corpus. Therefore, the discussion will not focus on the accuracy of the linguistic transcription of Mohawk per se, but rather on the reason for inaccuracies and for correct analyses alike.

These glimpses into the ‘mental worlds’ of the writers within this corpus will hopefully shed further light into the complexities of the process of linguistic transcription, and demonstrate that what is known (or even just assumed) is just as influential as what is heard.

As far as the written material on Mohawk is concerned, only a portion of the corpus has been the subject of detailed analysis from a linguistic point of view. Bruyas's *Radices verborum Iroquœorum* is almost omnipresent in historical accounts of Mohawk language, and has been the object of various studies, one of the most comprehensive ones being *A 17th-century Account of Mohawk* by the Jesuit Francis P. Dinneen (1990), who tackled in detail aspects of Bruyas's transcription. The works by Cuoq and Marcoux have also been treated in the literature, for example by both nineteenth- and twentieth-century commentators, like Franz Boas and Paul. M. Postal. The large majority of the remaining material, and the corpus at the British Library which is the focus of this Case Study, is generally mentioned or analysed as a 'undivided mass' of missionary work, and taken into account only in terms of its general influence on current Mohawk orthographical practices. The seminal work by Floyd G. Lounsbury, *Iroquoian Place-Names in the Champlain Valley* (1960) is partly an example of this approach. The author does however differentiate, albeit in general terms, between different national traditions and their native orthographies, helpfully pointing out a few orthographic features that are characteristic of each one. Other general works (e.g. Goddard, 1996) usually refer to these cumulatively as 'French orthography', 'English orthography', 'Dutch orthography', etc.. It should be noted that it is obviously sensible to discuss works belonging to the same tradition together, as they are united by similar traits and approaches; this, as will be seen, is especially true of the French tradition. Nonetheless, the risk is that of generalising and of overlooking examples of excellence and rare linguistic acumen that are present in the corpus.

Contextual Background

2.7 Missionaries and the study of Native American languages

2.7.1 The need for language proficiency

Christian missionaries' interest in language, especially from the sixteenth century onwards, was unparalleled to that of officers of other religions for obvious historical reasons[9], but also mainly due to the spread of mass print. Many of the missionaries had the chance to learn languages, predominantly Latin, through the printed word, and could therefore appreciate the benefits of an approach to language teaching and learning which would favour both newly discovered populations and the future missionaries themselves, as well as promote analytical studies (Ostler, 2004).

As will be discussed in later sections, language study, at least in the earlier stages of European presence in the New World, was predominantly conducted for practical reasons, both by missionaries and early settlers. Language learning, as will be seen, was vital for evangelization and for successful trading and, obviously, for basic communication. From a missionary point of view, the production of linguistic works was mainly motivated by didactic reasons, both for the instruction of missionaries and the catechesis of the native populations. The transmission of linguistic knowledge for the formation of young missionaries was a fundamental part in the formation of newly-arrived missionaries and critical for the success of the process of conversion of the native communities. English and French missionaries, and to a lesser extent Spanish ones, preached in the languages of the communities in which they were operating as this was more effective, considerably speeding up the evangelical mandate. Ostler (2004) observed that in communities who were already literate, the creation of liturgical material in the aboriginal languages created a sort of ripple effect, as future converts could study catechisms, rituals and Bible translations even when not in direct contact with missionary instruction, if needed, and transmit these teachings to other members of the community. The Jesuits ‘were particularly sensitive to the linguistic culture of the peoples whom they served [...] the missionaries underwent enormous pains to adapt their preaching to the new linguistic surroundings’ (Salvucci, 2002: 5). Previous attempts to convert the indigenous populations without adequate language knowledge and without the Indians having a sufficient understanding of Christian precepts and rituals had, in fact, already proved fruitless. Both Hanzeli (1969: 46) and Salvucci (2002) describe the failed attempts of missionaries (Hanzeli in particular quotes the example of a Jessé Flèche, missionary in Canada) to indiscriminately baptise the Iroquoian populations without appropriate religious induction. This different approach to preaching, however, resulted in sensible delays in the process of evangelization, an aspect that was not met with enthusiasm by the superiors of the Jesuit order back in France, but that eventually proved to be a far more successful one (Salvucci, 2002).

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[9] See Ostler (2004) for a deeper analysis of the historical and sociological reason behind the prolificacy in the production of linguistic material of Christian missionaries as opposed to the other religions.

The need for religious instruction in the languages of Native America was also especially vital for the adaptation of those abstract concepts that could find no counterpart in those languages. If conveying these notions was already difficult to accomplish in the destination languages, which lacked the terminology and the symbology essential to the teaching of Christian principles, this would obviously have been extremely hard to achieve in a language unknown to the Native Americans, especially during the earlier stages, when bilingualism and the availability of interpreters was still rare or even completely absent. This aspect was often indicated as one of the main and most frustrating obstacles to evangelization by many missionaries of the various denominations (Stafford Poole, 1994; Salvucci, 2002). Axtell (2000) eloquently summarizes the situation as follows:

> [i]n attempting to conquer native souls as well as bodies for the ‘work of Christ’, they had to translate the ancient history and mixed precepts of the Bible for people who knew nothing of Israel, books, sheep, churches, or even candles, much less Heaven, Hell, and Purgatory, and whose languages made it impossible to speak non-possessively of a triune Father-Son-and-Holy-Ghost (Axtell, 2000: 52).

In an attempt to overcome these difficulties, the missionaries adapted their teachings in order to become more comprehensible to the Indians and create a bridge between the native mental representations of reality and Christian symbolism and dogma on many occasions[10]. This approach relied on hand gestures, but also, and more effectively, on the use of pictures and drawings illustrating passages of the Bible, pictographs, or objects of particular symbolic significance. An example of this approach are the Mi’kmaq hieroglyphs, which created a half-way point of contact between the religious language of letters of the missionaries and the language of images of the Native Americans (Greenfield, 2000). While it is difficult to judge exactly how successful this approach was, such a method had various benefits. For example, it served the Indians as a mnemonic device, more useful than memorising sometimes meaningless (for them) strings of words of a catechism, and it was useful for the missionaries to elicit and learn vocabulary (Gray, 2000; Greenfield, 2000; Leahey, 2000; Salvucci, 2000). More generally, missionaries had to make do with what they had, that is both their own vocabulary and that of their future converts, whenever their knowledge of the language allowed it. For example, missionaries would use already existent words of the Indian vocabulary and confer upon them a new meaning, introduce lexica of their own European languages, coin brand new words in the native language, or a combination of these (Stafford Poole, 1994).

In addition to a lack of conceptual correspondence, there was also a lack of correspondence with regards to syntactic structures. Gray (2000) makes an interesting point. The missionaries had to confront a series of grammatical features that they had never encountered before and that were not present in any of the European or Classical languages they had analysed or of which they were speakers. The very basics of grammar, at least for a language learner trained in the Classical languages, like recognising nouns and verbs, was rendered extremely complicated by polysynthesis, a feature common to many American Indian languages encountered by missionaries. If this had a bewildering effect on many authors, as will be discussed in more detail in the sections below, it also had a more positive and fruitful result, as Gray (2000) explained:

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[10] I refer the reader to the volume *The Language Encounter in the Americas 1492-1800* (2000) for more examples and a more thorough discussion of how the language of evangelization was adapted to meet the need of the Indian populations and how mutual communication and understanding was achieved.

> [t]he fact that the language encounter in the Americas resulted in much confusion, not to mention creative adaptation, might lead one to conclude [t]he experience of communicating with the peoples of the New World [...] inspired novel thinking about language and communication. And, [...] the study of American languages did result in a re-evaluation of European assumptions about language (Gray, 2000:7)

This process, however, Gray (2000) continued, was by no means immediate or shared by all commentators, many of whom were often fiercely reluctant to abandon the traditional and well-established linguistic and cultural frameworks.

Thus, it is clear that language proficiency was a *desideratum* for a variety of reasons. It was crucial for the production of liturgical material and translation of the Scriptures, for the administration of the Sacraments, for the tuition of new missionaries. But above all, in the eyes of the Jesuits, and of other missionaries too, language knowledge was a vital tool in the mission to save Indian souls. Language skills were weapons in the war for conversion, ‘armes necessaires à la guerre’ (Thwaites, 18: 8-10 in Hanzeli 1969: 45), particularly for the Jesuits. Effective language use was vital to the advancement of evangelization, as ‘the most precious gift a missionary could have was, humanly speaking, his gift of languages. The whole success of his work depended on how he would exploit his linguistic talents’ (Hanzeli, 1969: 54).

Language proficiency was also sometimes a matter of survival, not only for missionaries, and a matter of dignity and status. The reliability of interpreters could not always be taken for granted, both for purely linguistic reasons and for issues related to allegiance and affiliation. For very delicate trading operations, simple diplomatic exchanges, internal administration of the colonies, or even peace-making, mutual understanding was of paramount importance. In the earliest phases of European presence in the New World, early settlers often resorted to jargons, or to the creation of pidgins, when it became clear that hand gestures were by no means sufficient, and could potentially be dangerous. However, pidgins and jargons too soon proved inadequate tools, and missionaries and colonisers alike realised, for obviously different reasons and objectives, that learning about those language and cultures would have provided them with far better chances to encourage cooperation from the Native Americans. However, while colonisers still relied heavily on interpreters or bilinguals and even on the missionaries themselves for their political and commercial affairs, this was not always possible or useful for missionaries and their evangelical mission, for the issues of conceptual correspondence, or lack thereof, discussed above (Axtell, 2000; Bragdon, 2000). Failing to grasp the indigenous tongues was not only potentially very dangerous, but it also rendered settlers, colonisers, and missionaries vulnerable to being ridiculed by the newfound populations. As Steadman-Jones (2007) explains, this was true in the Eighteenth century as much as it is now, as everyone attempting to learn a language can relate to the following:

> [o]ne may utter absurdities; one may find oneself deceived as a result of not fully understanding what is happening; one might suspect that at others are being satirical or even abusive but not be sure enough to challenge them; or one may simply grind to a humiliating stop in the middle of a conversation because one cannot find the words to continue (Steadman-Jones, 2007: 45).

2.8 The rôle of literacy

The written word has always been a vital part in Christianity, as rituals, prayers, catecheses, precepts, have all been codified and handed down through it. The life of the members of the Christian religious orders, as well as the daily life of the lay faithful, rely on canonical texts for the recitation and memorisation of prayers, litanies, hymns, for the study and teaching of the Scriptures, for the celebration of mass. Whether alphabetical or iconic, the reduction of religious knowledge, and of the religious experience as a whole, to text, was a matter of utmost importance. And what rendered this task possible was the codification of the language in written form. The Jesuits, for example, promoted the memorisation of strings of text amongst the native populations, something which is still a common practice today and in which writing is instrumental (Greenfield, 2000). Literacy was also very important to Protestant missionaries, as they tried to convey the key concept that 'piety and literacy went hand in hand' (Hart, 2000: 231). Literacy, and thus possession of knowledge, had obviously other implications in terms of hierarchical relationships and the establishment of power within the Indian communities. Hart (2000) explained that on one side, access to knowledge was rendered more 'equal' by literacy, as it would cease to be, through literacy, the sole prerogative of the chiefs, and on the other, it reinforced the power of those who were literate. Generally speaking, literacy was desirable in the eyes of many American Indians, even if only to become a good Christian.

The production of language-related material, however, could also serve purposes other than the instrumental teaching and learning of language and aiding the conversion of new populations. Hovdhaugen (1996b) very interestingly shows how the significant impact that linguistic standardisation had on the vernacular languages of Europe in the Renaissance, that is, as a tool for cultural valorisation and legitimisation against the hegemony of the Latin tradition, is similar in intent to the composition of grammars and vocabularies of Native American languages by missionaries. In an attempt to protect, enhance and valorise the cultural value and dignity of the Native American populations against the ferocious attacks of colonisers, missionaries saw in grammatisation, as it happened for the European vernaculars, ‘a way of elevating the group’s status by showing that the speakers were not uncivilized brutes, but human beings of equal status and moral to Europeans’ (Hovdhaugen, 1996b: 16) (Hovdhaugen, 1996b; Tavoni, 1998). The translation of the divine message into the many languages of the Americas thus had extremely important social implications. By translating the Scriptures into the native languages, missionaries *de facto* ‘conferred upon the local languages an indisputable authority’ (Hart, 2000: 233).

Finally, the transcription of these languages had another practical, linguistic aim, that is, the standardisation of the language itself. The missionaries hoped to regulate and render more ‘stable’ the idioms they were learning, and also, in some instances, to attain a levelling of the dialectal variations across their sphere of influence, something which obviously would have rendered their task sensibly easier, the impressive variety of the American tongues being both a source of wonder and of intense frustration for the missionaries. This is for example what happened as a result of Elliot’s extensive work with Massachusett (Bragdon, 2000).

2.9 Attitudes towards the non-European languages

The attitudes of missionaries towards American Indian languages are an extremely complicated, multifaceted, and interesting matter. For the understanding of their approach in the descriptions and analyses of those idioms, and equally of other non-European tongues, it is necessary to look at the missionaries’ linguistic efforts as being the result of a juxtaposition of a number of interconnected factors. It requires an investigation into their ‘mental world’, so to speak, which was shaped by individual attitudes and preferences, by the educational influences of their religious order, by the degree of personal linguistic knowledge and aptitude, by the antecedent traditions of language description, and more generally by sixteenth-, seventeenth- and eighteenth-century society, with its conflicting approaches to non-European cultures and languages, its theories of how languages should be organised, and even on its opposing views on the very dignity of human beings.

Bewilderment, confusion, frustration and outright hostility were very common feelings for the missionaries, as reported by both Catholic writers, for example in the *Jesuit Relations*, and by those of other denominations, when describing their first encounters with the languages of the New World. Gabriel Théodat Sagard, author of the *Dictionaire de la langve Hvronne* (1632), was perhaps one the most notorious example of these kinds of negative attitudes towards Native American Languages. When confronted by his incapability to reduce Huron to rules, Sagard, described Huron as ‘a savage language nearly without rule and so imperfect’ (Sagard, 1632: 10 in Schreyer, 1999: 104). This outlook, although by no means universal, was shared by other missionaries. Personal deficiencies were, however, attributed to the supposed intrinsic imperfection of the native languages, rather than to fallacies of the analytical approach (Nowak, 1999b). Steadman-Jones (2007), in his discussion of grammatical representation within the context of colonialism in Northern India, offers an explanation for the negative attitudes towards non-European languages, which can be applied to the missionary context as well. Steadman-Jones argues that the description of non-European languages in derogatory tones is linked to a sense of anxiety experienced by the colonists, although it is not very difficult to imagine that this will have been the case for missionaries as well, especially when taking into account the testimonies included on the *Jesuit Relations*. This feeling of anxiety was caused by a sense of inability to deal with unknown and unexpected language structures which were seemingly irreducible to rules, in addition to the many dangers that could result from not being proficient enough in those languages outlined above. As a defence mechanism, or as a way to somehow contain and dominate this sense of anxiety, grammarians would then ridicule the language itself, by declaring it illogical or even devoid of sense and of grammatical rules. In the context of missionary linguistics, too, this sense of anxiety was likely to exacerbate whenever divergences between the grammatical model of Latin and that of the new language would occur. Steadman-Jones (2007: 7) defines these 'flashpoints' or 'moments of danger', that is occurrences that were likely to prompt a negative reaction towards the new language and instigate 'an explosion of stereotypical vilification'. Steadman-Jones proposes the example of ergativity in Hindi-Urdu - also present in a few Amerindian idioms - while for missionaries this would have been polysynthesis, for instance, typical of Native American languages. Thus, 'this strategy allows the learner to *accept* the existence of difference but also to *reject* it by retreating to the reassuring fixity of the stereotype' (italics in original - Steadman-Jones, 2007: 9) An additional cause for frustration was the 'sudden fall in status' (Hanzeli, 1969: 47) of the missionaries: from sophisticated grammarians and teachers of Classical languages in Europe to inexperienced learners of 'strange' tongues in the Americas.

Negative attitudes towards American Indian languages were not only fuelled by anxiety associated with the very difficult process of language learning and foreign language production on a psychological level, but were also a by-product of the wider cultural, philosophical and scientific climate of the seventeenth and eighteenth centuries.

In addition to being a way to react and respond to feelings of anxiety and inadequacy and an attempt to mitigate them, defining a language 'savage', as Sagard and others did, was also influenced by existing theoretical views on the proprieties of languages. These proprieties, as Steadman-Jones (2007) points out, were not considered to be characteristic of a single language - Latin in particular - but were rather elevated to the status of universal principles of language structure. Elements of Latin such as parts of speech, morphological and morphosyntactic traits, or the inventory of sounds, were deemed to be the norm that constituted the rational and natural arrangement of human language. Language were thus described as ‘savage’, ‘illogical’ or ‘deficient’ whenever they did not obey these principles.

As mentioned in the introductory section, a source of criticism against the validity of the corpus of linguistic work produced by missionaries is the over-reliance on Latin or Greek grammar as an analytical framework for the description of non-European languages. Although, as we have seen, this was not true of all missionary grammarians. Native American languages were analysed through the lens of the western grammatical tradition, and many missionaries did attempt to make them fit into the mould of Classical syntactical patterns, often with little success. Even though it was not the only factor at play, this can be attributed to the emphasis put on the study of Latin grammar in the education of missionaries, which will be discussed in more detail in later sections. Another observation to make is of both a practical and again psychological nature. When coming across language features never before encountered in any of the European languages known to them, the missionaries often resorted to the reassuring stability of the knowledge they already possessed with regards to human language, considering it to be universally true and universally applicable. This would have been, in the seventeenth and eighteenth centuries, the normative rules and the proprieties of the Classical languages, which were an anchor and a fixed point to the missionaries, in a very unsettling and ever-confusing New World. Although we know now, within our scientific community, not to consider patterns of a very small group of languages to be exemplificative of the structures of all other human idioms, Steadman-Jones (2007) points out that relying on previous knowledge and assumptions for the analysis of the new and unknown is something shared by every member of the scientific circle, and it is something that we still do the twenty-first century as grammarians of the New World did in the sixteenth, seventeenth and eighteenth centuries. However, Steadman-Jones (2007) continues, it is obvious that the main difference between our approach and that of a seventeenth century Jesuit in the Americas lies in the clear understanding that it is the data that influences the way theories are formulated and their implications, and it is not the theory that binds *a priori* what principles data should follow and obey.

Salvucci (2002), however, notes that these attitudes towards Native American languages, although shared by other early missionaries, were not characteristic of all missionaries in America North of Mexico. On the contrary, some authors were very enthusiastic in praising Native American languages and their systems. Salvucci (2002) mentions the example of Brébeuf, who, having worked with the Huron language, like Sagard, described it instead as ‘very complete and very regular, contrary to the opinion of many’ (Thwaites, 8: 115 in Salvucci, 2002: 14).

In a way, it could be argued that the success or the accuracy of the description and analysis of a language was influenced, more often than not, not only by the individual language skills of the missionary, but also, and perhaps more importantly, by how well he managed to adapt to a new and unknown theoretical framework, and ‘accept’ the diversity of the structures and features he encountered.

2.10 Three traditions

In the following introductory discussion of the main works on American languages North of Mexico between the sixteenth and the eighteenth century, I follow Cowan (1974) in dividing the missionary material into three main traditions, according mostly to the place of origin[11] of the authors and their language, and arranged in the chronological order of their arrival[12] in the New World. This allows for a clearer analysis of both the differences and common traits among groups of writers, for an understanding of the linguistic practices and linguistic knowledge that influenced the creation of the missionary material, and for an investigation into historical or sociological issues, especially when these determined different outputs.

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[11] There are a few instances of missionaries who wrote in a different language than that of their place of origin. Good examples are Maturino Gilberti, of French origin, and Horacio Carochi, Italian, who are

2.11 The Spanish tradition

2.11.1 Influences on the works of Spanish missionaries and main works

Although the main focus of this study are the French, English, German and Dutch traditions and on the American areas North of Mexico, one cannot ignore the contribution of Spanish authors to the Missionary material. Spanish missionaries were extremely prolific in the production of dictionaries, vocabularies and grammars, or *artes,* especially in comparison with works produced by the French and English traditions.

Spanish missionary linguistic works, like most of the missionary material, have been unfairly dismissed for being inaccurate at best and for being too influenced by the framework of Latin grammar. Spanish missionaries, whose linguistic efforts started not too long after they set foot in Mexico in 1524, based their descriptive efforts on a preferred Latin grammar, which in this case was Antonio de Nebrija's *Introductiones Latinæ*, published in 1481, together with the *Diccionario Latino-Español* (1492) and the *Vocabulario Español-Latino* (1495) (Percival, 1999; Koerner, 2004a). Nebrija was also celebrated for having authored the first printed grammar[13] of a *lingua vulgaris* in 1492(b),

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considered part of the Spanish tradition. Others, for instance, were born in the New World, like Antonio del Rincón, born in 1566 in Texcoco, in the then New Spain, or Jonathan Edwards, Jr., born in 1745 in Northampton, Massachusetts.

[12] Note that I refer to the first arrivals of the missionaries, and to the beginning of their missions, not to the arrivals of colonisers and traders of their respective countries, who generally arrived earlier than the missionaries.

[13] The first grammar being Leon Battista Alberti's *Grammatica della lingua toscana* (c.1437- 1441), which was however not printed until the beginning of the twentieth century.

the *Gramática de la lengua castellana*. Nebrija (1441-1522) was a strong advocate of the one sound/ one symbol and one symbol/ one sound principles, having stated that ‘we should write like we pronounce and pronounce like we write’ (Nebrija, 1492: 8v in Smith-Stark, 2005: 11. Translation from Spanish). This is a theoretical stance that was not found in the linguistic reference grammars of the other two traditions, at least not stated in such an explicit and unambiguous way and already at the end of the fifteenth century. As will be discussed in later sections, especially in the case of English-speaking authors, other traditions often used digraphs or even trigraphs to represent sounds that the Spanish missionaries, by modifying and enlarging the Roman alphabet, or by inventing new characters, noted with just one symbol. This is not to say, however, that Nebrija or the Spanish authors were perfectly consistent with the application of these principles (Smith-Stark, 2005). Another aspect present in the works of Nebrija, as pointed out by Smith-Stark (2005), is the explicit statement of exactly what letters, characters, and sounds are, and how they differ from each other. This is something that, as will be discussed in a later section, was often unclearly treated by authors of other nationalities, and especially by English writers. Nebrija (1492 in Smith-Stark, 2005) affirmed that

> el primer inue*n*tor de letras [...] mirò qua*n*tas era*n* todas las diversidades de las bozes en su le*n*gua: *&* ta*n*tas figuras de letras hizo [...]: de manera q*ue* no es otra cosa la letra: sino figura por la cual se represe*n*ta la boz [...]. Assí que las letras representan las bozes (Nebrija, 1492: 6 in Smith-Stark, 2005: 8 - italics in Smith-Stark)

Percival (1999) and Hovdhaugen (1996b) suggest that Nebrija’s model was not the only influence on missionaries in New Spain. Spanish, but also French missionaries,[14] and Catholic missionaries in general, were often familiar, in addition to Latin, Greek, and their national vernacular, with Hebrew, which features a different morphological structure, and which might have been a parallel basis for analytical frameworks alongside that of Nebrija. Hovdhaugen (1996b) notes that the role played by Hebrew in the shaping of Spanish missionary linguistic works is indeed quite a significant one,[15] also due to the presence of many Jewish communities in the country. In fact, in most cases, Hebrew represented the only language with which most Catholic missionaries, Spanish or not, were familiar that was not an Indo-European idiom. Thus, it could be employed as an analytical aid for other languages not belonging to the Indo-European family, such as Native American languages. Percival (1986) notes how one of the first studies of Hebrew by Western authors was one by Nebrija himself, entitled *De vi ac potestate litterarum* and published in 1503. In the work, which discusses the pronunciation of Latin, Nebrija classified the consonants according to their place of articulation, a theoretical stand which was the norm for Hebrew, but was largely unprecedented within the Western grammatical context. Another innovation derived from the study of Hebrew can be found in another sixteenth century work, *De rudimentis Hebraicis* by Johannes Reuchlin, published in Germany in 1506. Reuchlin also included an analysis of sounds by point of articulation, and morphological analysis according to root-and-affix.

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[14] As will be discussed in section 2.14, this was not necessarily the case for English Protestant missionaries.

In addition, the study of Arabic might have been of help to Spanish missionaries, as it provided them with grammatical terminology, useful for grammatical phenomena that the Latin framework failed to account for. A famous example featuring Arabic terminology is the Arabic grammar by Pedro de Alcalà, *Arte para ligeramente saver la lengua arabiga,* published by the Spanish priest in 1505.

Other languages were also known to many Spanish missionaries, such as Chinese. Zwartjes (2011) explains how, for example, the knowledge of tone in Chinese was useful to the missionaries when attempting to describe the same feature in Vietnamese, as they were more likely to recognise it and had the appropriate metalanguage to describe it.

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[15] Hovdhaugen (1996b) states that '[a] thorough study of the influence of Hebrew on grammatical descriptions of non-Indo-European languages in the seventeenth and eighteenth century is a really strong desideratum in the historiography of linguistics' (Hovdhaugen, 1996b: 18).

Antonio del Rincón's *Arte Mexicana*, published in 1595 for Nahuatl, Alonso de Molina's *Arte de la lengua mexicana y castellana*, published in 1571 also for Nahuatl, and Maturino Giberti's[16] *Arte de la lengua tarasca ó de Michoácan*, published in 1558 in Mexico for Tarascan, are all examples of the influence of the Hebrew morphological model. The work of the Italian Ambrogio Calepino, that is the *Dictionarium,* and *De institutione grammatica* by Manuel Alvares, were also particularly popular, and were likely to have been consulted by Spanish missionaries. Percival (1999) however, goes on to observe that Spanish writers were aware that strict adherence to Nebrija's grammar or the Latin model in general was not the right course of action in all instances and that it was often impractical, especially due to the lack of correspondence between the morphological and syntactic features of Latin and those of the Native American languages.[17] An example of this approach can be found in Antonio del Rincón's *Arte mexicana*, published in 1595, in which the author recognized that the Latin model needed occasionally to be put aside to favour the creation of new models better suited to describe the structure of Nahuatl. Other notable works include *Arte para aprender la lengua mexicana* (1547) by Andrés des Olmos, who together with Antonio del Rincón and Alonso de Molina forms the 'gran trilogía de gramáticos nahuatlatos del siglo XVI' (Guzmán Betancourt, 2002: 253). Guzmán Betancourt also describes the three authors, quite enthusiastically as 'auténticas luminarias que brillan en el firmamento de la ciencia, cada uno con su propia luz' (Guzmán Betancourt, 2002: 254). In addition to Maturino Gilberti, Andrés des Olmos, and Alonso de Molina, another Franciscan is to be mentioned for his linguistic work, that is, Juan Bautista Bravo de Lagunas, who wrote another

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[16] Born, however, in France.

[17] See Monzón (1999a) for examples of innovation in the grammatical descriptions of Nahuatl and Tarascan.

Michoacan (Michoacan Nahuatl) grammar entitled *Arte y dictionario; con otras obras en lengua michuacana*, published in 1574.

Franciscans were certainly not the only Spanish religious order that wrote about the languages of Native America. For example, the Jesuit Antonio del Rincón and his work have already been mentioned, but there is another noteworthy Jesuit: the Italian-born Horacio Carochi, who composed another *Arte de la lengua mexicana*, which appeared in 1645.

As can be observed from this summary, Nahuatl was the subject of many of the works of the Spanish friars, due to its role as a *lingua franca* of the Aztec empire. Many other Mesoamerican and Southern American languages were the focus of missionary *artes*. An example is Quechua, which was also well documented, and which was also used a *lingua franca* or *lengua general* of the Inca Empire. The language was described by a member of another religious order who took part in linguistic analysis, the friar Domingo de Santo Tomás of the Dominican order. His *Grammatica o Arte de la lengua general del los Indios de lo Reynos del Peru* and his *Lexicon o Vocabulario de la lengua general del Peru* both appeared in 1560. The work of the Jesuit Diego de Torres Rubio focused on Quechua and Aymara, discussed in the *Gramática y Vocabulario en lengua Quichua, Aymara y Español* (1603). Other languages include the Otomanguean languages (for example Zapotec and Mixtec), and the Mayan languages (for instance Yucatec), to name but a few.

Although most of the Spanish missions were located in Central and South America, Spanish settlements were also present in America North of Mexico in what are now Florida, Georgia, California, Texas, Arizona, New Mexico, and Louisiana. The amount of published material, however, is in no way comparable to what has been found for Central and Southern American Native languages, such as Nahuatl, or those of the Quechua family, to name but a few. Sturtevant (2005), for example explains that written linguistic works in the South-eastern areas are fairly rare, except for those dealing with Apalachee and Timucua, two now extinct languages spoken in the Florida/Northern Georgia area. Francisco Pareja of the Franciscan order composed a Timucua grammar and other texts about the Timucua language, which ‘provide the earliest surviving texts in any North American Indian language’ (Sturtevant, 2005: 11). The year of publication on the titular page reports ‘1614’ but Sturtevant (2005) observes that this might not have been a first edition, and therefore, the year of publication might be earlier. Fray Gregorio de Movilla wrote two religious texts in Timucua and Spanish, between 1635 and 1636. Another example are the works on Costanoan languages, now extinct but spoken in California, by the Franciscan Felipe Arroyo de la Cuesta. His *Grammar of the Mutsun Language, Spoken at the Mission of San Juan Bautista, Alta California* was republished in 1861 and his *Vocabulary or Phrase Book of the Mutsun Language of Alta California* was republished in 1862, both by John Gilmary Shea (Fountain, 2013).

It should not be too surprising that most of the works mentioned above, belong to the sixteenth to seventeenth centuries. An explanation can be found by considering the different stages of the Spanish missionary linguistic effort, as examined by Suárez (1983). The first period was the richest and most productive phase in terms of the creation of grammars, lexicons, catechisms, liturgy books, etc., and was predominantly characterised by missionary activity. The Franciscans were the first religious order to arrive in 1524. Other Catholic Spanish orders followed the same path: the Dominicans, the Augustinians, and the Jesuits. This first stage developed in the sixteenth and seventeenth centuries. Suárez refers to this phase as the ‘missionary period’ (Suárez, 1983: 1) proper. During the eighteenth century, however, Suárez (1983) noted that the production of linguistic material slowed down significantly as the missionaries created fewer and fewer works. In the nineteenth century, the missionary works served as the basis for further studies, as the focus shifted from description to classification of language families, language typology, and etymological relationships.

An important difference that distinguishes Spanish material from French[18] and English works is that Spanish missionaries were able to take advantage of a printing press at quite an early stage of their presence in New Spain, and Franciscan friars started printing linguistic texts as early as 1534 (Koerner, 2004a). The gathering of linguistic data, which started much earlier in New Spain than in the American areas North of Mexico, was not too dissimilar from that observed for English and French writers. Spanish missionary linguists were also heavily reliant on monolingual or bilingual speakers (Koerner, 2004a; Smith-Stark, 2005).

As has been mentioned above, other differences, of a less practical nature, are also crucial within the context of this comparison: the different degree of grapheme-to-phoneme correspondence, higher in Spanish than English and French, the explicit exposition within the Spanish tradition of the one-sound-one-symbol rule already by the early sixteenth century, and an unambiguous approach towards the description of elements such as letter, character, power, sound. As Koerner (2004b) pointed out,

> it appears that the Spanish-speaking missionaries may not have had the same difficulties that the French and the English have had, given that Spanish orthography and pronunciation is still fairly close to the phonetic values of Latin (Koerner, 2004b: 73).

This is not to say, however, that Spanish missionaries encountered no difficulties whatsoever in the description of Native American sounds, or that their transcription is universally consistent and accurate. Smith-Stark (2005) observed how the notation and the recognition of the glottal stop, for instance, was often a cause of particular concern for Spanish missionaries (but equally so for missionaries of other traditions, too). The

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[18] The lack of a printing press is undoubtedly one of the reason why many works of the French tradition remain unpublished. However, Cowan (1974) suggests that another reason might have been a strategic one: that is, ensuring that their works could not be used and consulted by the Protestant English.

saltillo, as it became to be known, was often underdifferentiated or omitted altogether. When it was noted, however, it appeared in a few different forms, according to the author. The most common representation was <h>. Also common was the use of a grave accent < ` >, while less popular was the choice to employ < ˘ >, as found in the works of Antonio del Rincón, or sometimes a double vowel, as in the case of Mayan languages. Additionally however, as Smith-Stark (2005) noted, <h> marked other sounds in the descriptions of a few languages, such as Purepecha and Otomi: /h/, for example and, depending on the author, also the aspiration of stops, or nasal pre-aspiration.

Suarez (1983) noted that, in general, consonantal systems were handled appropriately by the missionaries, but vowel qualities and prosodic features were problematic, and were either omitted or recognised, but not noted in the descriptions.

2.12 The French Tradition

2.12.1 The role of Latin and the linguistic formation of Jesuit missionaries

A great emphasis on the study of Latin is also observable in the case of Jesuit missionaries, ‘who were the most active in the field of studying the languages of North America’ (Hanzeli, 1969: 33). Latin, its literature and structure, played a central role in the education of new priests and in the Jesuits’ teaching institutions across Europe in the sixteenth, seventeenth and eighteenth centuries. The *Ratio studiorum,* which contained internal regulations of the Jesuits’ schools, stated, for instance, ‘there shall be no exception from the rule of speaking Latin except on days of vacation and in hours of recreation’ (Hanzeli, 1969: 34). In the first three years, students would mainly focus on Latin grammar, with some notions of Greek grammar, and then progress to the study of rhetoric and of classical literature, and then increasingly of Greek. In French Jesuit schools, the preferred Latin grammar was that of Iohannes van Pauteren (c.1460-1520), commonly known as ‘Despauterius’ or ‘Despautière’, and its successive re-edited versions, like Jean Behourt’s *Despauterius novus* and Charles Pajot’s revised edition (Hanzeli, 1969). Here it is interesting to note that while a lot of attention was paid to syntactic structure and morphology, there was little or no instruction on aspects of pronunciation or phonology (Hanzeli, 1969). These grammars, however inconsistent, unsystematic, and lacking in adequate treatment of the main language levels other than syntax and morphology, nonetheless shaped the linguistic awareness of missionaries, and deeply influenced their approach to the study of North American languages. Moreover, these works and their authors were ‘more open to what the languages they knew had in common, than to their distinctive characteristics’ (Hanzeli, 1969: 42). If this was true of known languages, it was certainly also true of unknown languages, which were filtered through the analytical tools used in the study of Latin, with outcomes that were later deemed unsuccessful and deeply flawed[19]. For example, this view was shared by an illustrious figure, Ferdinand de Saussure, who defined linguistic works of the sixteenth, seventeenth and eighteenth century ‘dépourvue de toute vue scientifique et désintéressée sur la langue elle-même; ... c’est une discipline normative fort éloignée de la pure observation et dont le point de vue est forcément étroit’ (Saussure, 1931: 13 in Hanzeli, 1969: 13). Other detractors of Missionary Linguistics also include Leonard Bloomfield, who stated the following about missionary works:

> [t]hese works can be used only with caution, for the authors, untrained in the recognition of foreign speech sounds, could make no accurate record, and knowing only the terminology of Latin grammar, distorted their exposition by fitting it into this frame (Bloomfield, 1925 in Hanzeli, 1969: 16)

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[19] For a deeper analysis of the relation between grammatical training and the successes and failures of missionaries’ descriptions of North American languages see Hanzeli's *Missionary Linguistics in New France* (1969). Hanzeli’s work represents a rare exception to the general dismissive attitude of his contemporaries towards Missionary Linguistics.

2.12.2 Linguistic practices of Jesuit missionaries

As we have seen above, language proficiency was essential to the advancement of evangelization and, in the eyes of the missionaries, for the salvation of the Indian souls. Missionaries with a particular gift for learning were employed as 'pioneers' whenever new language areas were encountered so to facilitate the establishment of a new mission. The learning process was carefully noted down and handed down to different generations of missionaries, for the benefit of new learners, and most of these descriptions can be found in the *Jesuit Relations*. A collection of accounts written by the Jesuit missionaries on their life in New France, the *Relations* contained an incredibly rich treasure of data, as 'No other series has collected so much first-hand information about Native American life of the 1600's' (Salvucci, 2002: 1). Along with linguistic comments, varying from observations on the languages themselves to descriptions of language-learning efforts, the missionaries included detailed descriptions of 'the most remarkable happenings'[20] in the missions, as well as day-to-day activities in the struggle for the conversion of Native Americans. The *Relation*s also contained observations on matters varying from trips taken by the missionaries, to songs and music of the 'Natives', from accounts of earthquakes and comet appearances in Canada, to illnesses and feasts, and other descriptions of a cultural, linguistic, ethnographic and anthropological nature. These were then collected and edited by Jesuit superiors in Québec, under whose orders the *Relations* were gathered. They would then be sent to Paris to be printed and published, from 1623 to 1673[21] (Greer, 2000; Salvucci, 2002).

Upon their arrival, the new Jesuits from Europe spent most of their day learning the native language in classes with a language tutor, usually a missionary with good experience of the language or a native informant (Hanzeli, 1969). The whole procedure was heavily reliant on the availability of informants, monolingual or preferably bilingual, as previous efforts to learn only from manuscripts had proven unsuccessful, due to the less-than-perfect quality of their descriptions. Informants often kidnapped by Missionaries would, for example, learn the names of everyday objects and everyday sentences, make transcriptions of the native speakers' speech, especially local narratives, and read texts back to them, taking note of their corrections, to build a sufficient and reliable linguistic basis to expand on. The creation of texts related to the new language, was again conceived mainly as a tool to speed up the new missionaries' learning process. In addition to this, however, grammars and dictionaries were also a way to preserve the languages for future generations of friars. In many cases, these texts are the only surviving source for languages that are now extinct (Hanzeli, 1969; Mithun, 1999; Ostler, 2004). Once enough material was put together, this was analysed carefully, to make sense of the rules of the language. Subsequently, the missionaries would start creating dictionaries and grammars, translate passages of the Bible and basic prayers, and prepare catechisms and liturgical texts. These texts were then updated by following generations of missionaries (Hanzeli, 1969; Ostler, 2004). Nowak (1999b) however notes that these works were never properly corrected: any modification involved mainly the adding of new material. It must be noted, of course, that although this process was well established and applied by most missions, it was not always a smooth one, as the availability of informants and the personal linguistic skills of the single missionaries also played a significant role in the success of language learning and teaching (Hanzeli, 1969).

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[20] The complete French title is *Relations des jésuites: contenant ce qui s'est passé de plus remarquables dans les missions des pères de la Compagnie de Jésus dans la Nouvelle-France.*

[21] The *Jesuit Relations* were published in their entirety as a unified oeuvre for the first time by Reuben Gold Thwaites between 1896 and 1901, in 73 volumes (Salvucci, 2002).

2.12.3 Survey of key missionary and non-missionary linguistic works

Jacques Cartier, the French explorer who landed at the Baie des Chaleurs in 1534, is regarded as being the author of the first accounts of North American languages in New

France in the form of two wordlists, which, however, feature various notational inconsistencies. The first one, Giovanni Battista Ramusio’s *Delle navigationi et viaggi,* was a list of 58 lexical items of Laurentian, collected during Cartier's first voyage, and was printed in Venice for the first time in 1550. The second one, the result of Cartier’s second voyage, was larger, and consisted of 170 Laurentian words. It was printed in Cartier’s *Brief recit, & succincte narration, de la navigatione faicte es yles de Canada, Hochelage & Saguenay* (Hanzeli, 1969; Koerner, 2004b; Edwards, 2008). Marc Lescarbot, a cartographer, composed a vocabulary of about 100 Micmac words, as part of his own *Histoire de la Nouvelle France, contenant les navigations, découvertes, & habitations faites par le François ès Indes Occidentales & Nouvelle-France,* published in 1609 (Hanzeli, 1969; Koerner, 2004b). Other notable works regarding the first missions in New France were composed by, for example, the Jesuit St. Jean de Brébeuf, martyred at the hands of Iroquois in 1557, who translated the *Doctrine Chrestienne* catechism into Huron, the first instance of a text printed in this language, and composed a grammar for the same language, and by Samuel de Champlain with his *Les Voyages de la Nouvelle France occidentale*, which however does not contain linguistic remarks (Edwards, 2008). The Jesuit Pierre-Joseph-Marie Chaumonot compiled a Huron grammar in Latin, translated into English by John Wilkie and published in the *Transactions of the Literary and Historical Society of Québec* (Hanzeli, 1969; Edwards, 2008).

A particularly significant work on the Huron language, *Dictionaire de la langve Hvronne*, published in 1632, was not the creation of Jesuit missionaries, who however compiled most of the New France material. It was instead the effort of a Franciscan Recollect friar, Brother Gabriel Sagard (fl.1614-1636), who included it in his *Le Grand Voyage au Pays des Hvrons*. The *Dictionaire*, the first printed for this language and much larger than the works mentioned so far,[22] was the result of previous linguistic researches conducted by Sagard and by two other Recollect missionaries, Father Joseph Le Caron and Father Nicolas Viel (Hanzeli, 1969; Schreyer, 1999; Koerner, 2004b; Edwards, 2008). Schreyer (1999) in his study of the *Dictionaire* points out a few of the issues that are present in the work, especially with regards to notation. The work was conceived also as a French-Huron collection of commonly used Huron phrases, arranged according to a list of keywords, rather than only a list of French lexical items with their Huron counterpart. The French writing system was employed for both languages, but it was not free from printing mistakes, even in the case of French items. Orthographic variation was also present in the notation of Huron phrases, and Schreyer (1999) notes that it is often very difficult to decide whether different notations were semantically or grammatically motivated or whether they were just a byproduct of a French writing system which was itself characterized by orthographic variation at the time. Sagard was, by his own admission, not particularly gifted with regards to the analysis of the Huron grammar, which, according to Schreyer (1999), explains why there is not a Huron-to-French section. As mentioned in earlier sections, Sagard was also an example of that attitude, shared by a few missionaries involved in language study, which blamed deficiencies and inadequacies of the language itself rather than personal shortfalls for unsuccessful linguistic analysis.

The *Dictionaire*, Schreyer (1999) goes on to observe, was not very well received among the Jesuits, who were also not particularly fond of Cartier’s work and that of La Hontan’s, an officer in the colonial troops. The Jesuit Charlevoix stated that:

> [i]n particular one must not rely on the vocabulary of Brother Gabriel Sagard, Recollect […] even less so on those of Jacques Cartier and Baron La Hontan. These three authors have taken haphazardly terms, some from Huron, other from Algonquin, which they have badly remembered, and which often

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[22] It comprised 2561 items (Schreyer, 1999).

> meant something entirely different than they thought. And how many errors must have been caused by such misunderstanding by a lot of travellers? (Charlevoix 1744,III: 196 in Schreyer, 1999: 109)

There is no evidence that Sagard’s effort was well received amongst other groups either. Schreyer (1999) however also noted that it is hard to establish how successful or unsuccessful Sagard’s work was deemed to be, as there are no studies devoted to the response that the *Dictionaire* had in Europe in following centuries.

Also notable is the work of the Jesuit Sébastien Râle, who created an Abenaki dictionary, *A Dictionary of the Abnaki language in North America*, created in 1691[23] and published by Pickering in 1833. According to Hanzeli (1999) this was ‘one of the most voluminous dictionaries’ (1999: 26) of that century for a North American language. Râle was successful in accounting for irregularities in the grammar of the Abenaki dialect and proved to be ‘first and foremost a linguist’ (Koerner, 2004b: 60).

As observed by Hanzeli (1969) and Koerner (2004b), the number of works published by missionaries in New France between the sixteenth and the eighteenth century is rather small, at least with regards to those works containing linguistic information. In addition, after the battle that took place in Québec City in 1759, which resulted in a loss for the French, the role of the Jesuit missions and their linguistic production started to weaken and diminish. After the Jesuits, other missions visited New France in the eighteenth and nineteenth centuries. Hanzeli (1969) notes that following Jesuit missionaries, already in the eighteenth century, as far as the creation of linguistic material was concerned, lost the dominant role they had strongly held in the seventeenth century. More works by missionaries of other orders began to be created, such as, for instance, the Sulpicians. Examples are Elie de Dépéret who wrote an Algonkin grammar, an Algonkin dictionary, authored by Jean-Claude Mathevet, and works on Onondaga by Guichart de Kersident and Magnon de Terlaye.

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[23] Koerner (2004) however suggest that work on the dictionary might have carried on until 1722.

2.13 The English tradition

2.13.1 Survey of key linguistic works, missionary and non-missionary

British missionaries, as well as non-clerical individuals, also produced works about and in the Native languages of America North of Mexico, although their efforts began later than in New France. Hovdhaugen (1996b), notes an important difference in the cultural and linguistic background of English-speaking authors as opposed to the two other traditions. Linguistic work was mainly left to personal initiative, or to small Protestant denominations, rather than being supported and coordinated by the methodical and almost military organization of the French Jesuit or Spanish missions, at least in the seventeenth and eighteenth centuries[24]. Moreover, attitudes towards language and language learning were rather different than those that had characterized the Jesuit missionaries, who saw in the study of language an essential tool for the establishment and survival of their missions. In many cases, language was only a secondary interest. Protestant missionaries, for example, were not required to be especially gifted linguists, or even have a particular interest in languages. It is obvious, however, that some writers had a good knowledge of classical languages and a strong understanding of grammar, John Eliot, for example. This, however, does not seem to be the norm at all. Knowledge of Hebrew, similarly, was not as common, but a few New England writers could count on notions of Hebrew, which they sometimes employed to draw parallels between this language and the Native American tongues[25] (Hanzeli, 1969; Guice, 1987; Hovdhaugen,

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[24] This changed, however, in the 20th century, when the Summer Institute of Linguistic was created (Koerner, 2004).

[25] ‘This notion that the Indians were Jewish was a popular one at the time, and was discussed at length by

1996b).

As was the case for the Jesuits and other missionaries in New France, however, most of the works on American languages North of Mexico were not published, with the exception of a few remarkable instances, some of which were published in the nineteenth century by John Pickering (Koerner, 2004b).

One of those instances is *The Indian Grammar Begun* by John Eliot (1604-1690), which appeared in 1666 in Boston, and is 'la primera gramatica (impresa) de una lengua norteamericana' (Swiggers, 2007: 41) and is regarded as one of the most influential works in North American linguistics (Koerner, 2004b). Cowan (1974) described it as 'a fairly sophisticated piece of work' (Cowan, 1974: 5). John Eliot's book was a grammar of the Algonquian language Natick, described according to Latin analytical models, and composed with the help of native speakers. The Puritan missionary Eliot had received formal grammar training at Cambridge in the early seventeenth century and left England in 1631. Together with Richard Mather and Thomas Weld he also composed the *Bay Psalm Book* in 1640, the first book published in North America.[26] Eliot had preached to the Natives in their own language since 1647, having studied the Algonquian language with the help of a native informant. As a missionary he also translated the Bible into Massachusett, the first Bible printed in North America. He also founded 'praying Indian' towns, which were villages where converted Natives could live (Koerner, 2004b; Edwards, 2005; Swiggers, 2007). Miner (1974) and Swiggers (2007) noted that *The Indian Grammar* and John Eliot himself were renowned and well received amongst nineteenth-century European and American scholars, thanks in particular to Pickering, who republished the work in 1822, Du Ponceau, and von Humboldt. *The Indian Grammar*

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a number of authors [...] This view, incidently, may have been another impetus to missionary work' (Guice, 1987: 225)

[26] Other notable works by Eliot are *The Indian Primer* (1669) and *The Logic Primer* (1672).

Begun was organized into two main categories, morphology and syntax, and does not offer a particularly detailed description of the phonetic system of Massachussett or Natick. Eliot chose to employ the English writing system to describe Natick. That is, he applied English values to the Roman alphabet, a choice which, as will be shown, created a few problems. For example, as Pickering (1820) observed, this made the comparison with the related Delaware, described through the means of the German writing system, which Pickering thought more apt, rather ambiguous, as cognates often looked like completely different words. Eliot however in his introduction offered some clarification on the use of a few letters: the ambiguous [c] is represented as <k> and <s>, whereas <ch> instead stands for the sound /ʧ/. [g] which in English can express both /g/ and /ʤ/ is noted as <gi>, <j> or sometimes <gh>, whereas <g> only stands for /g/. With regards to vowels, Miner (1974) in his article attempts to clarify Eliot's digraphs and trigraphs[27]. In the case of [au], Miner (1974) does so by drawing links to the English writing system of Eliot's time: <au>, which represents an /a:/ sound, reflects the common orthography for 'continental' (Miner, 1974: 172) /a/, in the seventeenth century. On the other hand, Miner (1974) goes on, it is hard to determine the value of <ai>, as this digraph had shifting values in seventeenth-century English orthography. The symbol <∞>, in contrast, is far less problematic, and it represented a sound similar to /ʊ/, as Eliot himself explained. This is also the case for <ee> which has the values of /i/ or /i:/. As far as the other digraphs are concerned, that is, <ei>, <eu>, <eau>, <oi>, and <oo>, they are again rather problematic, as Eliot does not explain their values, and so are the short vowels. Goddard (1965 in Miner, 1974) also observed issues with regards to diacritics. In *The Indian Grammar Begun* Eliot mentioned employing two[28] different kinds of 'accents' (1666: 3): however, these are only used ‘sometimes’ (1666: 3). Needless to say, this lack of consistency impairs a correct interpretation of Eliot’s transcriptions. Miner (1974), however, argued that Eliot meant to use the accents as means of disambiguation, as was the practice in Latin, or sometimes as grammatical markers. Nonetheless, Miner (1974) also noted that the difference between stress and length of vowels was not perfectly grasped by English authors of the time, and this is reflected in Eliot’s work. Moreover, Eliot’s transcription employed more symbols than there are sounds in Natick, as Eliot did not recognize the non-contrastive nature of voicing in Natick consonants (Miner, 1974). However, he correctly recognised /l/, /n/ and /r/ to be dialectal variants. But besides inaccuracies in terms of phonetic and phonological analysis, Eliot’s work deserves to be praised for other reasons. As Guice (1987) observed, Eliot was quite thorough in his exposition of Natick verbs, and the animate vs. inanimate gender dichotomy, although this might have been suggested to him by a French Jesuit missionary. Salvucci (2002) explains:

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[27] It is important to note that not all digraphs represent diphthongs, as it is explained below.

[28] An acute one < ´ >, and a nasal one, which Eliot noted with a circumflex accent < ˆ > (Eliot, 1666).

> in 1650 Eliot warmly opened his home to Father Gabrile Dreuillette during the latter’s trip to Boston, and it seems that Eliot’s distinction of ‘animate’ and ‘inanimate’ genders in Algonquian came from this meeting (Salvucci, 2002: 5-6).

Another vocabulary of Natick, the *Vocabulary of the Massachusetts (or Natick) Indian Language*, was written by Josiah Cotton (c.1679-1756). It was published by Pickering in 1829, but the handwritten original can be dated back to 1708-9. Being quite familiar with Eliot’s work, as his father, John Cotton, had collaborated with him, the *Vocabulary* relies on Eliot’s writing system. John Cotton (1585-1652) also authored a work in the Natick language, the *Nashauanittue Meninnunk Wutch Mukkiesog,* a short children’s catechism published in 1691 (Stevens, 1956).

Roger Williams’s *A Key Into the Language of America*, printed in London in 1643 and republished by Pickering in 1827, is also deserving of attention. Williams (c.1603-1683), a Puritan missionary, also attended Cambridge, where he studied to become a church minister. He arrived in Massachusetts in 1631, but he was subsequently expelled from the Massachusetts Bay Colony in 1636, due to clashes with the church authorities and with the governing bodies of the Colony for his religious and political views; he then went on to found the Rhode Island Colony and Providence that same year (Guice, 1987; Koerner, 1995 and 2004b; Gaustad, 2005). The figure of Roger Williams is well known to many not only for his linguistic work. In addition to being renowned for his radical views, some of which were the causes of his exile from the Massachusetts Bay Colony, Williams is celebrated for his modern approach towards the native populations and the deep understanding and knowledge of their cultures, and is considered an example of tolerance even to this day. Unlike many of his predecessors and followers, Williams's view of the American Indians' society was not that of an inferior and savage one: in his *Key*, Williams not only argued that these populations were created equal by God, but very often he was determined to prove the very opposite of that fairly common misconception. Each section of the phrasebook ended with a short poem, written by Williams to comment on aspects of Narragansett culture and compare them to those of the English society, and in the dichotomy between the Narragansett culture and the New England and European societies in general, the latter was sternly attacked and criticised by the author (Williams, 1643; Davis, 1970; Cowan, 1975; Field, 2007). In the following passage from the *Key*, quite a famous one, it is possible to find a very eloquent exemplification of Williams's views:

> Boast not proud English, of thy birth & blood; |
> Thy brother Indian is by birth as Good. |
> Of one blood God made Him, and Thee and All, |
> As wise, as fair, as strong, as personal (Williams, 1643: 53).

A Key Into the Languages of America is a 200-page phrasebook of Narragansett, an Algonquian language which is now extinct. However, the work is far from being just a collection of phrases and lexical items in the Narragansett language, as it is quite valuable in terms of the vast amount of information on the Narragansett culture and society it offers its readers, too (Cowan, 1975; Koerner, 2004b; Edwards, 2005). For this reason, it is also considered to be ‘the first English-language ethnography of an American Indian people’ (Simmons, 1978: 197 in Edwards, 2005: 7) and ‘the earliest example of […] anthropological linguistics’ (Hoijer, 1973: 657 in Koerner, 2004b: 67). In addition, as far as Algonquian languages are concerned, *A Key Into the Language of* America is the earliest published account for this language group (Bloomfield, 1938; Edwards, 2005). Concerning phonetic notation, Cowan (1975) noted that Williams seemed to be fairly peculiar and at times inconsistent, due to a combination of practical problems related to printing practices and to the inadequacies of the English writing system as a transcription tool for Narragansett words. For example, it was common to substitute [w] with [vv], when the [w] type was not available anymore, or to introduce an [e] as a silent filler for the end of a line. In addition, there is no clear indication as to what values should be applied to the graphs employed, unlike the *The Indian Grammar Begun*, other than the assumption that they will have those of the English writing system. The transcription in the *Key* had however its merits, and Williams, for instance, was able to correctly identify the /l/, /n/, /r/ variation of the language group in Narragansett, as John Eliot had for Natick (Cowan, 1975; Campbell, 1997). Moreover, according to Cowan (1975), the correct identification of many phonological properties of the Narragansett of the time, and Williams’s awareness of allophonic variations, can account for other anomalies appearing in the notation.

Bragdon (2000) highlights another interesting aspect of Williams' work, that is, the presence of a theory that was shared by other seventeenth and eighteenth century authors, like Jonathan Edwards, Jr, through the nineteenth century, when the theory was presented in the Book of Mormon, first published by the founder of the Latter Day Saint movement, Joseph Smith, in 1830. Through the collection of lexical data, authors attempted to prove that some Native American words had Hebrew linguistic cognates, and that therefore, the North American population could have been one of the Lost Tribes of Israel. This was also connected to another two theories common at the time, and which originated in the Middle Ages: that the primordial language was of divine origin and that Hebrew was that primordial language (Eco, 1993). Simone (1998) is very effective in explaining the thought process:

> [b]y adding, subtracting and changing the position of letters in the words of a language one can derive words of other languages, and, at the end of the day, prove that all languages derive from Hebrew (Simone, 1998: 162-163)

Also worthy of mention is *'A Small Nomenclator' of the Indian Languages,* a vocabulary of Massachusett of only five pages, which features at the end of William Wood's *New England's Prospect,* published in 1634. Wood (fl.1629-1635), who was not a missionary, arrived in Massachusetts around 1629[29], and the text is the result of his four-year stay in Massachusetts Bay. The work mainly dealt with New England's geography, its settlements and native inhabitants, and it was meant as a descriptive aid to prospective travelers or the merely curious (Vaughan, 1977; Edwards, 2005). The intent of the *Nomenclator*, by admission of the author himself, was more to satisfy the curiosity of readers - it was not so much motivated by linguistic interest. The work, however, is the first printed text containing words of the Massachusett language (Guice, 1987; Edwards, 2005).

Another work republished by Pickering in 1823 was a short pamphlet of about 17 pages called *Observations on the Language of the Muhhekaneew Indians* by Jonathan Edwards, Jr. (1745-1801), a pastor and son of the theologian Jonathan Edwards. The work, originally published in 1788 in New Haven, deals with Stockbridge Mahican, an

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[29] Vaughan (1977) in the introduction to a new edition of *New England's Prospects* notes that very little is known about the biographic details of William Wood.

Algonquian language also spoken in the Stockbridge Community, where the author and his family moved when he was five years old. In the *Observations* Edwards described grammatical aspects of Mahican, and aimed to show the relation between Mohegan, Natick, Delaware, and other languages of the New England communities, namely Shawanee (Shawnee) and the Chippewau (Ojibwa). At the same time, it demonstrated Mahican's unrelatedness to Mohawk, a hint at what will later be the beginning of comparative linguistics (Edwards, 1788; Mithun, 1999; Koerner, 2004b; Edwards, 2005). Edwards does so by providing a list of words in Mahican, Shawnee, Chippewau, and Mohawk, arranged in columns for ease of comparison. As mentioned, the focus of the *Observations* is on the description of the grammar of Stockbridge Mahican, mostly in terms of syntax and morphology, and on its relation to other languages. Nonetheless, there are also some brief remarks on the phonetics of the language and on transcription issues. Edwards (1788) noted that <w> is never a vowel, <gh> is to be pronounced as in the words 'tough' and 'enough' uttered by a Scottish speaker, <u> is as in 'uncle' but longer, and word-final <e> is always silent. As far as the other vowels were concerned, they were to be attributed the values they have in English. Edwards (1788) also commented on the inconsistency of other authors in transcribing Indian languages, which, according to him, makes the relation between languages appear far less evident.

2.13.2 Protestants, reading instruction and the Mohawk

We have seen how the Protestant endeavours differed from the Catholic ones, both French and the Spanish, in the way the efforts of the authors, especially missionaries, were coordinated. It has been mentioned that the linguistic activities, language learning and language description, were often left to personal initiative within the mission. In other cases, these were organised and directed by the single (and far smaller) denominations, and therefore quite fragmented, in contrast with the mostly uniform and highly centralised structure of Catholic missions, especially Jesuit. However, a somewhat different scenario is observable if one considers the efforts of the Anglican missionaries to impart literacy and the catechism to the Native Americans.

It is no surprise that the path to evangelization had to pass through the acquisition of language knowledge and literacy from both sides of the cultural encounter. In other words, it was necessary for the missionaries to acquire the Native American language, and for Native Americans to learn to read their own idiom (and in some cases that of the preacher). Another point of comparison between the two traditions is the degree of importance attributed to the language proficiency of the missionary or to the literacy of the future converts. For the Jesuits, a linguistically proficient missionary made for an effective missionary. For the Protestant, a literate Christian made for a good Christian. Melton (2001) observes that the greater emphasis put on the religious literacy of the devout by Protestant denominations as opposed to Catholic ones, can be correlated, at least to a certain extent, to doctrinal differences between the two traditions. Melton (2011) explains:

> Protestantism has often been associated with literacy because of its supposed stress on the importance of lay Bible-reading. Conversely, the distrust of lay Bible-reading often found in post-Tridentine Catholicism has likewise encouraged scholars to correlate literacy with Protestantism. As late as 1713, after all, the papal Bull *Unigenitus* had condemned the proposition that ‘the reading of scriptures is for all’ (Melton, 2011: 83).

This is not to say that Catholic missionaries were completely oblivious to the benefits of Native literacy. After all, prayers and catechisms had to be learned. The difference lies more in the degree to which literacy was linked to good Christian behaviour, and ultimately to the salvation of the soul. Monaghan (2005) reports what already observed by Hall (1989) in stating that ‘[t]he relationship […] between learning to read and piety was so intense that […] the two were virtually inseparable’ (Monaghan, 2005: 33). As another example of this, Monaghan (2005) also informs us that the law in

New Haven stated that children had to possess at least enough literacy to be able to read the Scriptures. Preaching and teaching in Mohawk was often the only course of action available. Firstly, as Monaghan (2005) pointed out, one of the reasons was purely numerical, as the ratio between the Mohawk people and the missionaries was overwhelmingly in favour of the Native population. Secondly, Mohawk parents actively insisted that their children learn the native language only.

The Anglicans adhered to these principles, as they were devoted to save Native souls through the gift of literacy. Monaghan (2005) explains that, except for a few variations, Anglicans in Colonial America followed a sort of educational curriculum in their teaching, or, as it was referred to, an ‘Ordinary Road’, also followed by the Congregationalists and other Protestant denominations. Anglican missionaries were supported in their efforts by the Society for the Propagation of the Gospel in Foreign Parts (henceforth S.P.G.), an organisation founded in London in 1701, which was also responsible for providing financial support to the missionaries and schoolmasters on behalf of the Church of England. The S.P.G. provided schoolmasters with a sort of rule book, similar in intent to the *Ratio Studiorum* of the Jesuits. This was a list of indications on what to teach and how, how to relate with pupils, how to punish them in case of misbehaviour, and encouraged schoolmasters to ‘instruct the Indians and Negroes and their children’ (Monaghan, 2005: 146).

The term ‘Ordinary Road’ refer to the order in which a specific collection of texts was to be used when instructing children to read. According to John Locke, to whom we owe this concept, they were ‘the Horn-Book, Primer, Psalter, Testament and Bible’ (Locke, 1693: 186). The texts were obviously either properly religious, like the Psalter, the (New) Testament and the Bible, or highly religious in content, with the Horn-Book and the Primer containing prayers. The Anglicans, unlike all other denominations, also included the Book of Common Prayer, somewhere in between the primer and the Psalter. Not included in this group, but still used prominently in the reading instruction of children, was also the spelling book. In many instances, especially in the case of the Book of Common Prayer, the books had to be shipped from England (Monaghan, 2005).

The ‘Ordinary Road’ was also adhered to in the education of the indigenous populations North of Mexico. Translations of the text were created by missionaries in the languages of the Native Americans, often with the help of the native speakers themselves, and in a few instances, entirely translated by members of the newly converted populations. An example is the translation of the *Gospel according to St. Mark* into Mohawk of Captain Joseph Brant (1743-1807), the Mohawk chief T’hayendanegea, which was added to the Mohawk translation of a Book of Common Prayer and published in 1787. Another instance of native translations is the version of the Holy Gospels, *Neh nase tsi shokȣatakȣen ne Sonkȣaianer Iesos-Keristos*, published in 1880, translated into Mohawk from English by Joseph Onasakenrat (1845-1881), a Mohawk chief who was educated by the Sulpicians and became a missionary.

The first step of the Ordinary Road for the instruction of children, the horn-book, was actually not a book, but was instead a wooden frame with a handle at the bottom, containing a sheet, covered in horn film, with the English alphabet in both upper and lower case, followed by a reduced syllabary, the Trinitarian formula, and the Lord’s Prayer. Plimpton (1916) explained that the film of horn was used as a protection from stains and dirt, as the children would circulate it amongst themselves in the classroom.

The second stage on the path to literacy was the primer, in the form of a book, which also featured the English alphabet in upper and lower case, and the alphabet of the Native language in Latin script. An example is the *Primer* attributed to the German-born Christian Daniel Clau and publishsed for the first time in Montréal in 1781. The title of this text, *A primer for the use of the Mohawk children, to acquire the spelling and reading of their own, as well as to get acquainted with the English tongue,* makes the purpose of this type of text even clearer. Primers featured an extended syllabary, which, as Monaghan (2005) observed, represented the core of reading instruction in the sixteenth, seventeenth and eighteenth centuries. Children learning to read would focus on the relationship between a letter and its name, rather than its sounds. For example, the word 'sun' would be processed by a child firstly as *es-you-en* and only later as the full word, through the mediation of the subdivision into syllables, in the case of longer words. Reading instruction following this 'spelling-for-reading' methodology, as defined by Monaghan (2005: 386) was thus a three-stage process: first, the child would name the letters composing a word aloud; secondly he or she would join the letters so as to form syllables, and thirdly, he or she would put the syllables together so to read the word as a single unit. Often, schoolmasters would run through the primer two or three times, at which point it was hoped that children could read words without having to spell each letter. Claus's primer thus features pages of combination of one-letter and two-letter syllables (e.g. a, ba, da, ca, etc..) in both English and 'Indian', followed by a list of words composed of one, two, three, four, five, six, seven, and eight syllables in both languages, and indicating the subdivision of syllables with hyphens. After the syllabary, the children would then move onto the more properly religious part of the primer, that is, the catechism. Claus's text is bilingual in purpose, as outlined in the title, but there were of course completely Mohawk monolingual texts. Also notable was the abovementioned *The Indian Primer* by John Eliot in the Massachusett language, published in 1669. Peculiar to the Anglicans, as mentioned above, was the Book of Common Prayer, translated in various editions into Mohawk, or integrated into the primers.

After the practical phases of reading instructions were mastered, students could then move to the Psalter, the most famous North American example being the *Bay Psalm Book*, published in 1640 in Massachusetts, then to the New Testament, and finally, as the culmination of all efforts, to the Bible.

As observed previously in this section, the spelling book lay outside the official Ordinary Road, but it became increasingly popular in England and Colonial America in the second half of the eighteenth century. Although similar to the primer at first, the spelling book featured some significant differences, as identified by Monaghan (2005). Although both the primer and the spelling book featured pages of words with an increasing number of syllables, the spelling book had in the syllabary its core and most important part. In the primer, instead, which was far more religious in content and style than the spelling book, the syllabary was mostly an introductory section to the catechism and prayers part. This contrasting focus also meant that the spelling book had far more explicit instruction on the pronunciation of letters, as opposed to simply providing their name for reading aloud, as was the case for primers. Thus, the spelling book featured orthographical rules for the correct spelling and pronunciation of English letters and words or of the native language.

2.14 Other European traditions in America North of Mexico

The Spanish, French, and English traditions were by far the most prominent in the American continent, both in terms of linguistic material created and in purely numerical terms. Nonetheless, there were missionary contributions to the process of evangelization and to the study of Native American languages from other ‘minor’ traditions. Again, here the term ‘minor’ is only to be considered according to the terms just mentioned and within the American context.

2.14.1 Moravian missionaries: Zeisberger and Heckewelder

Another Protestant organisation, the Moravian Church (*Unitas Fratrum* or Unity of Brethren) arrived in America North of Mexico in 1735. Originating from Herrnhut in Germany, the missionaries' most remarkable linguistic works in North America were the result of their contact with the Algonquian people, especially with the Mahicans, and the Delaware (Lenape). Chelliah and de Reuse (2011) described the Moravian missionaries as 'particularly proficient linguists' (Chelliah and de Reuse, 2011: 42). Gray (2000a) offers an explanation when he attributes this to the different attitude of the Moravians towards the manner of converting the souls of the Native Americans. While the Catholic missionaries and other Protestant denominations, Gray (2000a) explained, would focus on the 'spiritual education' (Gray, 2000a: 936), that is, on the teaching of the Scriptures and of the liturgical and dogmatic aspects of the Christian faith, the Moravians 'sought to convert through example' (Gray, 2000a: 936). A consequence of this approach was that it required the missionaries to live within the communities they wished to convert for extended period of time, in some instances, even two decades, which then resulted in excellent language knowledge (Gray, 2000a). Clearly, for the Moravians too the way to effective preaching was through the development of linguistic skills in the target language.

John Gottlieb Ernestus Heckewelder and David Zeisberger are the two most famous Moravian missionaries within the context of Native American language studies, and their popularity was achieved also thanks to Peter Stephen Du Ponceau (formerly Pierre-Étienne du Ponceau), who was engaged in written correspondence with Heckewelder and translated Zeisberger's works on Onondaga and Delaware (Swiggers, 2009).

Born in 1721 in Moravia, Zeisberger arrived in Georgia in 1738, aged 17, as Du Ponceau (1827 in Zeisberger, 1827) informs us. He began his missionary activity in 1746, first among the Onondagas of the Iroquois Confederacy, and then in Pennsylvania and

Ohio, where he came in contact with the Delaware people, also known as Lenni Lenape. He died in 1808 in Ohio, having spent just over 60 years as a missionary to the Native American populations (Du Ponceau, 1827 in Zeisberger, 1827). Zeisberger was a particularly prolific author, and such a prolonged contact with these communities resulted in remarkable language skills and fluency in Onondaga and Delaware. Du Ponceau (1827 in Zeisberger, 1827: 25) noted that his Onondaga material consisted of manuscripts of two grammars in German (a longer and a shorter version) translated by Du Ponceau, entitled *Onondagoische Grammatica*; a grammar in English, *Essay Toward an Onondaga Grammar* (published in 1888); a bilingual dictionary in German and Onondaga, *Deutsch und Onondagaisches Wörterbuch* in 7 volumes.

Zeisberger's work on Delaware is also copious, and includes an English and Delaware spelling book (1776), a dictionary in German and Delaware, a liturgical book, a collection of sermons and one of biblical narratives, a phrase book, a Maqua-Delaware-Mahican vocabulary (*Maqua* refers to Iroquoian in general),[30] and the *Grammar of the Language and the Lenni Lenape or Delaware Indians,* translated from German by Du Ponceau, and published in 1827 with Du Ponceau's introductory notes. In his *Indian Dictionary,* republished and edited by Horsford in 1887, he combined English, German, Delaware and Onondaga.

John Heckewelder, born in 1743 in England, was also a missionary to the Delaware people, and worked as an assistant to Zeisberger. His German-speaking parents emigrated to England for religious reasons, and his knowledge of German was somewhat limited, something which proved problematic for him in his mission in Pennsylvania (Campbell, 1997).

His work on Native American languages has been particularly influential, especially in disproving theories on the alleged inferiority and inadequacy of the Amerindian languages in comparison to the European ones, a theoretical stand that clearly emerged in his correspondence with Du Ponceau. As noted by Campbell (1997), Heckewelder's writings prompted the beginning of a written exchange between Wilhelm von Humboldt and John Pickering which 'was to have a major impact on general linguistic thinking' (Campbell, 1997: 25). Heckewelder's long correspondence with Du Ponceau had a great impact on the latter, and Gray (2000a) stated that

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[30] Mithun (1981) suggests that the term 'Mahkwa' used by Johan Campanius and Thomas Campanius Holm might refer to the Susquehannocks.

> [i]t would be no exaggeration that it was the former Moravian missionary Heckewelder who gave the Philadelphia lawyer-linguist, Du Ponceau, the empirical foundation for his extraordinarily novel and modern theories about American Indian languages (Gray, 2000a: 936).

Heckewelder's most notable work, less linguistically oriented than ethnographic in nature, is entitled *Account of the history, manners and customs of the Indian nations who once inhabited Pennsylvania and the neighbouring states*, and appeared in 1819. Nonetheless, Wolfart (1967, in Swiggers, 2009) noted that his involvement and contribution to the study of Amerindian languages was crucial, thanks to the impressive linguistic knowledge he shared in his written correspondence. In addition, many linguistic works by Moravian missionaries would have gone unknown without his intervention, including Zeisberger's writings, which he passed on to Du Ponceau. Heckewelder died in 1823 in Pennsylvania.

2.14.2 Dutch and Swedish works

Dutch missionaries in North America were mainly concentrated in the province of New Netherland, an area that covered the northern part of the North American east coast. The settlement partly overlapped with the New Sweden province in the areas of Delaware, Pennsylvania and New Jersey.

Particularly relevant to this study are two Dutch figures: Lawrence Claesse and the Reverend Bernardus Freeman. Lawrence Claesse, another name of Lawrence Claessen

Van der Volgen (1687-1742), was of Dutch origin, had been kidnapped as a child by the Iroquois in 1690 and had lived amongst the Caughnawagas. As a result he became a skilled speaker of the Iroquois languages, including Mohawk (Axtell, 2000). Claesse worked as an interpreter with Dutch-speaking missionaries, like Bernardus Freeman, and despite his lack of knowledge of English, he also worked for English-speaking missionaries, with the help of a Dutch-to-English interpreter. Claesse collaborated to the translation into Mohawk of liturgical material and a catechism with Bernardus Freeman, a Calvinist minister who worked the Mohawks at Schenectady. Freeman, who was born in Westphalia in 1660, began his mission amongst the Mohawks in 1700. Freeman possessed good Mohawk language skills and was deemed to be an effective preacher in the Schenectady community, but after 5 years of political turmoil within the Dutch province due to opposing factions, he finally moved to Long Island in 1705. Freeman died in 1743 (Burke, 1991).

Hovdhaugen et al. (2000) noted that Swedish settlers were already present in North America from the first half of the sixteenth century. However, as pointed out by Edwards (2008), the province of New Sweden had a brief and unfortunate life, as it was swiftly supplanted by the Dutch settlements already in 1655. Swedish missionaries created linguistic material as a result of their contact with the Susquehannocks, an Iroquoian population, and the Delaware. The Swedish material on Susquehannock language represents some of the only surviving data about the language, and is the work of two members of the same family: Johannes Campanius, a Lutheran missionary, and his grandson Thomas Campanius Holm who, however, did not travel to North America. Johannes Campanius (1601-1683) began composing a translation of the catechism of Martin Luther into Unami Jargon, a Delaware pidgin, during his mission in the American continent, and completed the work after his return to Europe in 1648. Thomas Campanius Holm (1670-1702) contributed to the publication of his grandfather’s catechism, which saw the light in 1696(a) under the title of *Lutheri Catechismus.* Unami Jargon was not the only language treated in the volume, as the work also contained a small vocabulary of Susquehannock of only 80 items, the *Vocabula Mahakuassica* (1696b) (Mithun, 1981; Hovdhaugen et al., 2000; Edwards, 2008).

Thomas Campanius Holm also republished a version of his grandfather's observations about the life of the Swedish colony in 1702 under the title of *Kort beskrifning om provincien Nya Swerige uti America.* This other publication also contained linguistic material on Susquehannock collected by Campanius, and included a section entitled *Of the Minques, or Minckus, and their language,* later translated into English and republished by Du Ponceau 1834. It also featured an expanded version of the *Vocabula Mahakuassica* (Mithun, 1981; Edwards, 2008). Thomas Campanius Holm also attempted to demonstrate the existence of a linguistic relation between Hebrew and Susquehannock (Mithun, 1981; Hodhaugen and others, 2000).

Case Study: Introduction

2.15 Practical issues with the North American material

In addition to the ‘babelism’ of transcriptions described above, and the difficulties created by the lack of a standard of notation and of transcribing practices, there are also philological issues to consider when analysing these pre-modern works. Smith-Stark (2005) observed that, in many cases, the interpretation of missionary descriptions has to tackle and take into account a series of significant problems. An example of these is the diachronic variation of the languages being described, some of which might have become extinct in the meantime. Moreover, the linguistic analysis itself, dictated by very different theoretical premises, can be of particularly difficult interpretation, especially in the description of phonetic phenomena. It is also particularly hard to find a written explanation for the symbols employed by the grammarian, that is, their values, as works that feature it are not very common at all.

Aside from these strictly linguistic issues, there are more practical problems with the material. For some languages, the only accounts available are very brief annotations of passing travellers. As the contacts they had with the native population were very brief, these are often no more than wordlists, and therefore they feature little or no linguistic information at all (Mithun, 1999). In the case of the Jesuit missionaries, who had the chance to settle in the Native American communities for more extended periods of time, the accounts are undoubtedly longer and far more detailed. However, a great number of works remained unpublished for centuries, except for descriptions published in the Jesuit Relations, also due to the fact that they could not acquire a printing press (Koerner, 2004b).

Published works were not free from issues either. Cowan (1975) discussed problems related to the publishing of the North American material by English authors, and observed that '[The] guiding principles seems to have been to get things into print as soon as possible, even if you didn't have quite enough type to do the job' (Cowan, 1975: 761). This meant that the choice of characters was sometimes dictated by what was available rather than what was in the manuscript, which considerably complicates the process of interpretation. In addition, the legibility of the manuscript itself was also problematic for publishers, who found themselves having to 'decode' a missionary's handwriting (Cowan, 1975).

Attribution of work is also problematic in some cases, as French missionaries, for example, used to make copies of previous works, making establishing the identity of the primary author very difficult (Goddard, 1996 in Koerner, 2004b).

2.16 Dishomogeneity of transcription systems and their accuracy

The disregard for phonetic and phonological aspects in the missionary language training practices was obviously even more problematic for the analysis of new speech sounds. Missionaries, and of course travellers, explorers, traders, and all of the other categories of people who attempted to record North American languages, had the very hard task of learning to produce, recognise, describe, and finally transcribe sounds that they had never encountered in the European languages or any other languages of which they had previous knowledge (Mithun, 1999). As we have seen in the case of the Jesuits, although this was also true of other authors as well, training in phonetics and phonology was inadequate, although many missionaries probably possessed capabilities beyond their formal training (Hanzeli, 1969; Smith-Stark, 2005). As a result, each individual had to rely solely on his personal auditory skills, which varied in degrees of accuracy. In a few cases, linguistic features like allophones were correctly identified, but in many other instances, phonemes could be incorrectly written down as other phonemes, inadequately noted due to the deficiency of the Latin alphabet, approximated to the closest European value, not recognised at all, or sometimes even ignored altogether (Mithun, 1999; Smith-Stark, 2005). In his analysis of the missionary contributions to the description of languages of New Spain, Smith-Stark (2005) illustrated three phenomena in the erroneous detection of the phonetic and phonological traits of the languages described: ‘underdifferentiation’, ‘overdifferentiation’, and ‘displacement’ (Smith-Stark, 2005: 35).

Underdifferentiation refers to a linguistic item not being included in the transcription system. This could be because the feature was not noticed, or it was noticed but it still was not included in graphic representation. In the case of overdifferentiation the opposite occurs, and linguistic contrasts that are not present in the languages are instead noted down. Finally, displacement appeared when ‘a phonological contrast was analyzed in terms of a secondary conditioned feature rather than the primary conditioning feature’ (Smith-Stark, 2005: 41).

This state of affairs obviously implied that a multitude of transcription conventions existed, even when authors were describing the same language, and even when all the notation systems were based on the Latin alphabet. Another cause for this dishomogeneity was the different degrees of grapheme-to-phoneme correspondence of the writers’ languages of origin, and, more generally, their native writing systems (Pickering, 1820; Koerner, 2004b). Pickering, in *An Essay on a Uniform Orthography for the Indian Languages of North America* (1820) noted that this could be very misleading, for instance, for a reader comparing different descriptions of the same dialect by authors of different nationalities, as some words might not even appear as belonging to the same dialect. But, as Pickering went on to observe, the same issue still remained even when the authors were of the same nationality. As mentioned above, Jonathan Edwards, Jr. also lamented in his *Observations on the language of the Muhhekaneew Indians* (1788) the state of affairs, and stated that ‘[a]lmost every man who writes Indian words, spells them in a peculiar manner’ (Edwards, 1788: 7). Koerner very justly noted that this ‘babelism of transcriptions makes an interpretation of the manuscripts very difficult to the present-day linguist' (Koerner, 2004b: 74).

2.17 Transcriptions by French, English, German authors

As mentioned above, the low grapheme-to-phoneme correspondence in both French and English has rendered the interpretation of the transcription of North American languages a rather difficult process. The value to be attributed to vowel and consonant letters is very often ambiguous, as in the orthography of both languages one symbol could represent more than one sound, and one sound could be represented by different symbols. Pickering (1820) commented specifically about vowel notation in English, and considered all the different sounds that the letter <a> could represent: /ɔ/ in 'fall', /ɑ/ in 'far', /æ/ in 'fat' or /eɪ/ in 'fate' (Pickering 1820: 10). However, Pickering went on to observe, this did not tend to happen for continental languages, which retained 'a uniform pronunciation of the vowels [...] which is generally supposed to have been handed down to our own times, in conjunction with the letters themselves, from the Romans'. In addition, earlier English authors tackling Native American languages very rarely offered clarification on the symbols used and the sounds they were supposed to represent. The formula '<vowel> as in English' was fairly ambiguous to nineteenth century commentators, as it is now.

This is not to say, however, that the French material features strict adherence to the one sound/one symbol rule, that it is completely unproblematic, or that there is no variation in the transcription practices of missionaries. The interpretation of the value of vowels was similarly problematic, as the usage of symbols was not explained. The most common issues lay with the transcription of the semivowels <j> and <w>, and they were very closely linked to the variations and development in the French spelling of the time and the influence of Latin orthography (Hanzeli, 1969; Tranel, 1987). Tranel (1987) noted that until the eighteenth century ‘i/j could stand for [i] ~ [j] or [ʒ], and u/v could stand for [y] ~ [ɥ] or [v]’ (Tranel, 1987: 217). In the French corpus, <i> represents both /i/ and /j/. However, as Hanzeli (1969: 76) noted, ‘The fact that the majority of missionaries found no direct and consistent method of marking semivocalic /i/ does not mean that they were unaware of its occurrence’. The symbols <ȣ>, <ŏ> and the digraph <ou> could represent both the vowel /u/ and the approximant /w/.

As far as German-speaking writers are concerned, an element of possible ambiguity is highlighted by Heckewelder (1819), who, commenting on German orthography in a series of letter exchanges with Peter Stephen Du Ponceau, explained that in the case of the transcription of the Delaware language <c> and <g> were employed in place of <k> ‘to shew that this consonant is not pronounced too hard’ (Heckewelder, 1819: 382). Less reassuringly, however, he also remarked that often this substitution was also due to the fact that German printers had a low availability for that particular character.

2.17.1 Practical considerations

However, it is clear that there are some objective issues with the linguistic works of missionaries, which will be discussed in greater detail in the following sections. The great dishomogeneity and the idiosyncratic nature of the transcription systems are seriously problematic, especially in the case of those studies devoted to the description of the notation practices adopted by the authors. In addition, as Koerner (2004b) noted, analysis and comparison even across accounts of the same language proves rather difficult, due to the different transcription models employed by missionaries of different nationalities. It is also true that phonetic and phonological aspects of language were in some cases not recognised, noted incorrectly, or ignored, and that the missionaries’ educational background influenced their linguistic approach greatly. Moreover, as Nowak (1999b) points out, in many cases not even the scientific standards agreed within the scientific community of the time were always met. However, it would be erroneous to infer from these observations and the discussions above that missionary works are completely devoid of any merit.

2.18 Mohawk

Mohawk, or *Kanien’kéha* (Mohawk people: *Kanien’kéha:ka* - Mohawk being an exonym), is a Northern Iroquoian language spoken across Québec, Ontario, and New York State in the territories of Kahnawake, Kanehsatake, Oshweken, Tyendinaga, Wahta, and Ahkwesahsne.

As Lounsbury (1960), Mithun (1979; 1992a) and Michelson (1981) report, the inventory of sounds is fairly limited in the language, which results in an equally limited inventory of letters. Lounsbury (1960) observed that

> [t]he Mohawks write their language with eleven letters*: a, e, h, i, k, n, o, r, s, t, w*. It is almost a point of national pride with them - something special that makes their language unique - and they are not generally happy if someone [...] employs more than this Spartan minimum (Lounsbury, 1960: 31).

Michelson (1981) reported that ‘Mohawk may be written with just fifteen letters: *a, e, i, o, v, u, k, t, s, n, r, w, y, h, and ?’* (Michelson, 1981: 91). Finally, Mithun (1992a) noted that

> le Mohawk moderne s’écrit à l’aide de douze lettres '*t, k, s, n, r, w, ', h, i, e, a et o* (le ' représentant le coup de glotte) auxquelles s'ajoutent trois symboles ´, ` et : qui servent à indiquer l’accentuation et la durée des voyelles.[…]. Le mohawk a deux voyelles nasalisées, représentées par les séquences *en* et *on* (Mithun, 1992a:_235)

Mithun’s remark is consistent with what was established in 1993 by the Committee at the Mohawk Language Standardisation Conference (Mohawk Language Standardisation Project, 1993). Mohawk lacks labials (Mithun, 1992a), in contrast with what European writers assumed to be a universal feature of languages. This deficiency was not particularly problematic for authors in terms of transcription. More problematic features as far as notation was concerned were the presence of glottal stops, duration, both heavily underdifferentiated, and the appearance of the voiceless laryngeal fricative /h/, all phonemic in the language (Dinneen, 1990). Also problematic for the authors was the allophonic variation in Mohawk. In the language /t/, and /ts/ have voiced allophones, [d] and [dz] respectively, before a vowel, and /k/ has a voiced allophone [g] before a vowel and before /w/ and /y/ (Mithun, 1979; Michelson, 1981). The rule is represented as follows:

$$\begin{bmatrix} t \\ k \\ ts \end{bmatrix} \begin{bmatrix} d \\ g \\ dz \end{bmatrix} \quad /\$\_\_\_\_\_ \left(\begin{Bmatrix} w \\ y \end{Bmatrix}\right) V$$

where $ = syllable boundary (Mithun, 1979: 45).

2.19 Main works on Mohawk

The French Jesuit missionary Jacques Bruyas (1635-1712), superior of the Iroquois missions and, later, of the Canadian missions, was the author of a manuscript on Mohawk. The work, despite having being composed towards the end of the seventeenth century, was not published until the second half of the ninetenth century. As explained in earlier sections, this has been a fate common to many similar works of that period. Bruyas's *Radices Verborum Iraquaeorum,* published by John Gilmary Shea in 1863, provides the reader with a brief grammatical description of the Mohawk language in Latin, as well as a translation into French of Mohawk verbs (Dinneen, 1990; Mithun, 1999). The orthography includes the symbol <ȣ>, which is often found in other texts belonging to the French tradition for /o/, both short and long, or in place of 'ou' or 'w' (Hanzeli, 1969). A less common notation mark appearing in Bruyas's orthography is <^{c}>, which represents a pre-consonantal /h/. Also interesting is <n̈> for a glottal stop when followed by a nasalised vowel. In terms of the graphemic inventory, *Radices* is consistent for the major part with what has been outlined above by Mithun (1992a), with the exception the above-mentioned symbols, the absence of <w> and <y> in the text, and the addition of <g>

(Dinneen, 1990).

Another Tongue Brought In (1707) is a catechism '[p]ut into a Tongue used among the Iroquois Indians' (Mather, 1707: front) attributed to the Puritan minister and politically active figure of Cotton Mather (1663-1728), although it was probably the work of Bernardus Freeman. Edwards (2008) points out that in this and in the titles of other linguistic works in the British Library collection, the terms 'Iroquois' or 'Iroquoian' refer to the Mohawk language and the Mohawk people. The text was aimed at English and Dutch traders so that they could (and were in fact decidedly invited to do so by the author) '[c]onvey the Garments of Righteousness and Salvation, among the Naked Salvages' (Mather, 1707: 3). The 16-page catechism is in a question-and-answer format about the principles and practices of the Christian faith and about the nature of God and Jesus Christ. It features text in Mohawk, English, Dutch (Blackletter), and Latin. *Another Tongue Brought In* does not provide any indication on pronunciation nor grammatical descriptions. It can however be noted that the author uses <oo> in place of /w/, and the symbol < ' > to denote a glottal stop. <g> is also present.

A different audience was instead intended for another Mohawk text, that is, *A Primer for the use of the Mohawk Children,* published in 1781 in Montréal. Another catechism, similar in content to Mather's work, it has no official author, but Edwards (2008) reports it being attributed to Christian Daniel Claus (1727-1787), a German-born Commissioner of Indian Affairs. Similarly to *Another Tongue Brought In,* it does not offer instruction on the pronunciation of Mohawk, although Claus does include at least information on the alphabet in use. The *Primer* had the double purpose to teach Mohawk children to read prayers in Mohawk and learn to read in English, too. The opening presents the Mohawk (Iroquois) alphabet and the English alphabet side-to-side, and a list of double-letter clusters of both languages. Claus continues with a syllabary and a list of English and Mohawk words containing one and up to eight syllables each. The first part is also in a question-and-answer format between a catechist and a hypothetical Mohawk child; the second part contains an explanation of the Ten Commandments, and a series of prayers. It also includes previously unpublished materials of other missionaries.

2.20 Mohawk material at the British Library

Mohawk is the most represented language among the Northern Iroquoian languages within the British Library collection, with a wealth of works which greatly surpasses in number even those other idioms within the Iroquois Confederacy, that is, Seneca, Oneida, Onondaga, Cayuga and Tuscarora. This is due to a number of reasons. For instance, the Mohawk population was particularly open to the Christian message brought by missionaries, both Catholic and Protestant. Moreover, there was a political interest in converting the Mohawks and therefore, in creating texts in their language, as they were the most powerful within the Confederacy. Finally, the missionaries and other settlers were in proximity of the Mohawk territories in the State of New York and Québec, something which favoured contact (Monaghan, 2005; Edwards, 2008).

Edwards (2008), Lead Curator at the Department of Printed Historical Sources provides us with a survey of Northern Iroquoian books in the British Library, which, in addition to Mohawk and the other languages of the Confederacy, also feature Huron and Wyandot, Laurentian, and Susquehannock. The material available within the Mohawk corpus is varied, but it is almost completely religious in content. There are a few exceptions, such as the two almanacs edited by Joseph Guillaume Laurent Forbes and published in 1899 and 1900. Other exceptions are also *Études philologiques sur quelques langues sauvages de l'Amérique* (1866) and *Jugement erroné de M. Ernest Renan sur les langues sauvages* (1869), both by the Sulpician missionary and philologist Jean-André Cuoq. Born in France in 1821, Cuoq arrived in Québec in 1846 and joined the mission at Lac des Deux-Montagnes (Oka) the year after. He continued his mission in Oka until his death in 1896 (Lagarde, 1990). In 1848, Cuoq started learning Mohwak with the help of Joseph Marcoux, whose dictionary he copied, and who thus influenced his later writings. Joseph Marcoux (Tharoniakanere), a Roman Catholic missionary, was instead born in Québec in 1791. An extremely knowledgeable and accomplished linguist, he worked with the Mohawk populations at the missions in Saint-Régis, Lac des Deux-Montaignes and Caughnawaga, where he spent the majority of his religious life. He died of typhoid in 1855 (Béchard, 2003).

The great majority of texts available are therefore nineteenth-century translations of books of the Bible, of the Gospels, of the Book of Common Prayer or of other liturgical texts, such as the Liturgy of the Hours in the case of Catholic texts. Also present are the two primers attributed to Daniel Claus and to Cotton Mather, conceived as an aid to evangelization through reading within the religious community, and three hymnals. There is however also a limited number of texts published in the eighteenth century.

For the purpose of the analysis, I have deemed it useful to refer to three additional works that are not included in the BL Collection. These are *Radices verborum Iroquæorum* by Jacques Bruyas, a list of Mohawk words by the Dutch barber-surgeon Harmen Meyndertsz Van de Bogaert (c.1612-1648) and another wordlist by the clergyman William McMurray (1810-1894), included in a letter to Henry Schoolcraft. Although not part of the corpus per se, these works have provided me with additional details on notational practices.

2.20.1 Attribution and language collaborations

The attribution of authorship of a part of the British Library corpus of Mohawk, despite being explicitly indicated in almost the totality of cases, is nonetheless problematic. Many of the titles contain formulas like ‘with corrections by’, ‘corrected by’, or ‘with corrections and additions by’, which inevitably complicates the task of differentiating the input of the author from that of the corrector. However, for the purpose of this study, this does not generally affect the outcomes of the discussion, as author and corrector (or reviser) tend to operate within the same linguistic tradition (e.g. a work by an English-speaking Mohawk person with corrections by a native English speaker). An instance of multilingual collaboration can be found in *The Morning and Evening Prayer* (1715) attributed on the title page to Lawrence Claesse. Claesse often collaborated with English missionaries, including the Anglican William Andrews, who is also cited on the titular page. However, he was not as proficient in English, being only able to translate to and from Dutch and Mohawk. A third man was then needed as translator from Dutch back to English and, in this case, to William Andrews: John Oliver, a parish clerk (Axtell, 2000; Monaghan, 2005). Despite the attribution to Lawrence Claesse on the titular page, *The Morning and Evening Prayer* might not in fact be Claesse's work, or at least, not entirely, but is probably that of Bernardus Freeman instead, later corrected and revised by Lawrence Claesse (Goddard, 1996). Another example of multilingual efforts is *The Book of Common Prayer and Administration of the Sacraments* (1787) which included a translation of the Gospel of St. Mark by Joseph Brant, a translation of the Evening and Morning Prayer and of the Gospel of St. Matthew by Bernardus Freeman, and a translation of the Catechism and Litany by Lawrence Claesse (Field, 1873).

2.20.2 Missionaries and other authors

In this section, the focus has been decidedly on Missionary Linguistics for the reason outlined in the introductory segment. Given the highly religious nature of the Mohawk corpus at the British Library, many of the authors that will be taken into consideration are indeed missionaries or ministers of various denominations. There are a few instances, however, where this is not the case. The abovementioned Lawrence Claesse, for example, was an interpreter in the Schenectady area. Similarly, John Norton (fl.1784-1825) **(**Teyoninhokarawen**)** and Joseph Brant **(**T'hayendanegea**),** were also interpreters and Mohawk chiefs, who worked in close contact with the missionaries. Christian Daniel Claus was a German commissioner, and John Aston Wilkes (1782-1867) was a merchant. Others, however, were lay members of the various Churches, such as Henry Aron Hill (?-1834) (Kenwendeshon), who was a Mohawk catechist and translator for the Church of England, and to whom 'the Mohawks owed the bulk of the scriptures and hymns in their own language'. He married Christiana Brant, daughter of Joseph Brant (Ruggle, 1987: online). William Hess, was a schoolmaster appointed by the Church of England through the S.P.G..

2.21 Diachronic and dialectal variation

2.21.1 Diachronic variation

Julian (2010) identifies three phases in the historical development of Mohawk: Old Mohawk, Common Mohawk, and Modern Mohawk. Traces of Old Mohawk are present, for instance, in Bruyas's *Radices Verborum Iraquaeorum.* With regards to Common Mohawk, Julian (2010) explains that

> [p]honological and morphological changes which are present in all modern dialects of Mohawk [...] are assumed to have been present in Common Mohawk, while phonological changes which are evident in some modern dialects of Mohawk but not others [...] are assumed not to have been present in Common Mohawk (Julian, 2010: 210).

Finally, Common Mohawk is the stage of the language which is still observable today in the modern dialects. Apart from a few exceptions, like the abovementioned text by Bruyas, the texts analysed belong to this stage of the language.

The differences between Old Mohawk and Common Mohawk have again been identified and helpfully summarised by Julian (2010), and are as follows:

- jh > hj
- Ø > e / w_j
- Ø > e / n_k, kʷ
- Ø > e / t, k_ɹ
- Ø > e / t, k_n
- Ø > e / t_w
- Ø > e / #s, Vs_n, w[31] (Julian, 2010: 218).

As can be seen, they are all instances of epenthesis, except for the change from /jh/ to Common Mohawk /hj/.

2.21.2 Dialectal variation

Modern Mohawk has 6 dialects. These are Akwesasne (St. Regis Mohawk Reservation), Caughnawaga (Kahnawake Mohawk Territory), Oka (Kahnesatake Mohawk Territory), Wahta, Tyendinaga and Six Nations.

Dialectal variation does not affect mutual intelligibility among the communities of speakers. A few variations, mostly phonological and mostly affecting consonants, can nonetheless be identified (following data is from Julian, 2010: 218-221). Before vowels, /ts/ is realised as [ʤ] in Akwesasne Mohawk, but is pronounced [dz] in the same environment in the Oka, Wahta and Caughnawaga dialects. Before /j/, /t/ is pronounced as [k] in Akwesasne Mohawk. Conversely, /k/ becomes [t] in Caughnawaga Mohawk, Oka Mohawk and Wahta Mohawk, in the same environment. Also before /j/, /t/ is [ʤ] in the same dialects. Before /hj/, the voiceless alveolar affricate /ts/ is pronounced as the voiceless postalveolar affricate [ʧ] in the Oka, Wahta and Caughnawaga speaking communities. Another departure from Common Mohawk concerns /ɹ/, which has changed to /l/ in Akwesasne Mohawk and to /ɭ/ in Caughnawaga Mohawk, Oka Mohawk and Wahta Mohawk. As far as vowels are concerned, Julian (2010) identifies a change from

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[31] Epenthesis occurring between /s/ and /n/ or /w/ after a vowel or a word-boundary (Julian, 2010: 217)

Common Mohawk /wλ̃/ to /ũ/ after /h/ and /s/ in Akwesasne Mohawk, Wahta Mohawk, Oka Mohawk and Cuaghnawaga Mohawk.

2.21.3 Authors and dialects

With regards to dialectal variation, it is possible in part to link the authors to a particular variety of Mohawk[32]. The works of Cuoq and Marcoux feature the variety associated with the speakers at Ahkwesahsne, or St. Regis, Québec, and Kahnawake (Caughnawaga) and Kahnesatake, in the Montréal area in Québec. Hills, Nelles and Hess are associated with the Six Nations of the Grand River Reserve (Mithun, 1999; Edwards, 2008; 2013; Julian, 2010). More in general, territories at Ahkwesahsne, Kahnawake and Kahnesatake adopted the writing system devised by French missionaries, including territories at Wahta, while Six Nations of the Grand River and Tyendinaga used that system created by Anglican missionaries (Mohawk Language Standardisation Project, 1993).

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[32] Thanks to Adrian Edwards who has pointed out these links to me in a series of e-mail exchanges in 2013.

Case Study: Analysis

2.22 Purpose and 'deficiencies'

Lounsbury (1960) differentiated between two types of 'deficiencies' that can be observed in the Mohawk corpus. These, however, Lounsbury continued, are not created equal, in the sense that they can have a more or less serious impact on the decoding of a text. The first involves the failure to note features such as accent, tone, glottal stops, /h/ in post-vocalic position or vowel length. The second is specifically relevant for the French corpus, and involves avoidance of symbols for the voiced alveolar and velar plosives, that is, <d> and <g>. If failure to employ <d> in a Gospel translation is mitigated by the activation of some specific phonological rules of Mohawk involving /t/ or /k/, omitting to note a glottal stop or post-vocalic /h/ can instead create phonetic and semantic ambiguities, and a correct interpretation of the text would require a deeper knowledge of the language.

While I agree with Lounsbury's assessment, I find the term 'deficiencies' partially problematic with regards to the specific characteristics of this corpus. I concur with the fact that failure to note glottal stops or post-vocalic /h/ is a deficiency in the sense that they are, after all, phonemes of the language, in the same way that /n/ or /w/ are, and modern orthography rightly includes symbols for them. With regards with prosodic features, such as tone, accent and vowel length, however, one has to consider the nature and purpose of the texts in the corpus. A main factor differentiating the material in the corpus from linguistic-centred work both in Mohawk and other languages is that they were obviously created for different purposes and for different audiences than, for example, sixteenth- and eighteenth-century grammars and dictionaries. With the exception of primers, which had a similar but only partially overlapping purpose to that of the texts in this corpus, earlier material was composed by missionaries for missionaries (or for traders). This, as we have seen in previous sections, was especially true within the French tradition, where manuscripts were passed down to generations of new missionaries to speed up and facilitate the process of evangelisation. Primers constituted a first shift in audience and purpose, as they were mostly aimed at Native American children, so that they would acquire the necessary literacy level to pray both in the native tongue and in the language of the missionaries. As a result, they were mostly educational in intent. The term 'deficiencies' is justified and appropriate in the case of these kinds of material (i.e. grammars, dictionaries and primers), due to their analytical, descriptive and pedagogical aims. On the other hand, translations of liturgical material, of parts of the Bible, or of the Gospels represented a final step in the religious and linguistic education of newly converted populations, as has been noted, for example, in the discussion of the Anglican Ordinary Road. These texts were aimed at native speakers of the language, they were often translated with the aid of native speakers, and 'serve[d] as mnemonic devices, as for the recitation of Scripture' (Mithun, 1979: 343). As such, they assumed an established knowledge of the language, for which the orthography adopted by French writers was, I believe, only partially deficient (i.e. the failure to note glottal stops and post-vocalic /h/ was still rather problematic). Therefore, as Lounsbury (1960) conceded,

> the Mohawk writing serves very well for the practical purposes of writing messages (be they personal letters or books) and for reading them back - always provided however, that the one who reads them back know and speaks the language without deficiency and can automatically supply what the written text fails to indicate (Lounsbury, 1960: 33).

It should perhaps not appear particularly surprising that the various Mohawk translations of the Gospels, of the Book of Common Prayer, or of other liturgical books, have received less attention as a whole in the literature. In my opinion, this is to be attributed to the fact that their content is not 'overtly' linguistic in nature, as they are not primers, grammars, word lists or dictionaries. As mentioned above, they are also not a direct transcription of native speech, but are rather ‘orthographic rendition’ of Mohawk. These transcriptions, as has been observed, later formed the basis of current Mohawk orthography, in particular those of Cuoq and Marcoux. Anglican orthography also influenced some Mohawk communities, especially those at Six Nations and Tyendinaga (Mohawk Language Standardisation Project, 1993). I believe, however, that the corpus provides interesting insight into the process of transcription of a previously unwritten language, and sheds light on the tackling of ‘problematic’ Mohawk sounds and their resolution.

2.23 Brief notes on Onasakenrat and Brant

Joseph Onasakenrat, or Sosé, was born in 1845 at Lac-des-Deux-Montagnes (Oka) to Iroquois parents, who were converted Catholics. The community had been founded by Sulpician missionaries, and Onasakenrat was thus initially brought up as a Catholic himself. Sosé (his Iroquoian name) received formal education at the Petit Séminaire de Montréal at the age of 15. After being chosen to become Chief seven years later, however, he began rebelling against the Sulpicians and abandoned Catholicism in favour of Methodism, as did many other Iroquois at Oka, due to malcontent over the community’s administration. He subsequently collaborated with Methodist missionaries to the translation of the Bible and of the Gospels from English to Mohawk, which are present in this corpus. Onasakenrat later became a Methodist minister himself, and was appointed to the St. Regis and Caughnawaga communities (Smith, 1982). Very interesting is the fact that his translation of the Gospels is ‘from the authorized English version into the Iroquois Indian dialect, under the supervision of the Montréal auxiliary to the British and Foreign Bible Society’ (Onasakenrat, 1880: title page). However, the influence of Onasakenrat’s formal education in a French-based environment is immediately evident from his orthographic rendition of Mohawk, which does indeed follow the French orthographic conventions for Iroquoian language. Onasakenrat died in 1881 at Oka.

Joseph Brant, or Thayendanegea, was born around 1742/43 and was also a Mohawk and a Chief, although his parents had Wyandot origins. His upbringing was not as surrounded by religion as that of Onasakenrat, and Brant had initially begun serving with the British military service at age 15. Around the age of 19[33], however, Brant too had the chance to take part in formal education: initially at Moor's Indian Charity School, in Connecticut, where he also began teaching Mohawk to future missionaries, and later at the College of New Jersey (now Princeton University), where he reprised his role as a teacher of Mohawk, while perfecting his English language skills at a nearby institution. His linguistic skills led to his collaboration with the Anglican missionary John Stuart to translate parts of the Bible and the Gospel of St. Mark (included in this corpus), to a later translation of the Book of Common Prayer for the Church of England, and to his appointment as Interpreter for the Six Nations Language (Graymont, 1983). The influence of the educational background is evident in Brant's orthography, too, which, in the Gospel of St. Mark, employs an unmistakeable English-based notation. Brant died in 1807 in Ontario.

2.24 Methodology

The possibility to compare texts in a same target language but transcribed by authors of different native idioms has been one of the main appeals of working with Mohawk. As one of the best represented languages in the British Library corpus, this Native American language offered a good collection of material that was suitable for an analysis of this kind. The religious nature of most texts was also an added value, as the similar content (or even identical at times) facilitated the search for the lexical items to be compared across different native languages. The presence in the corpus of various translations of the Book of Common Prayer or the Liturgy of the Hours, of the Gospels or of passages of the Ancient Testament meant that in some cases it was possible to locate the same passages or verses across different works.

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[33] Brant's exact date of birth is not certain due to the change from the Julian to the Gregorian calendar in 1752 in the United States (Graymont, 1983).

The French material has been used as the basis for comparison. The reason is twofold: firstly, it is the most homogenous, as has been noted above; secondly, its orthography is the most similar to the one adopted for Mohawk today, a proof of some of its merits and of its traditional status (Mithun, 1992b). The occurrence of corresponding words across traditions has dictated the choice of lexical items, meaning that only Mohawk words which had a counterpart in the works of one or two more traditions have been taken into account. As mentioned above, the possibility to identify passages of religious manuscripts, facing page translations in English and semantic context, allowed me to identify different notations as being the same lexical unit with a degree of certainty. In addition, my familiarity with the notational correspondences between traditions was also helpful to identify these items. The words have been selected insofar as they display the linguistic features that will be discussed below and show how different writers have tackled them in their transcriptions and resolved their problematic nature.

2.24.1 Referencing conventions

In the following analysis, texts will be referred to by name of author and abbreviation of title or main content, which should hopefully appear sufficiently straightforward to the reader. For example, Hill [Luke] will refer to the translation of the Gospel of Saint Luke by Henry Aron Hill. The Book of Common Prayer will be abbreviated as BCP. In the case of those works translated by one main author and corrected by one or two more writers, these will be all be mentioned, with the surname of the principal translator in first position and the name of the correctors following after a forward slash /, or by a plus sign + if there is more than one main translator. For instance, Hess/ Wilkes [Hebrews] will refer to a work that has been translated by William Hess and corrected by John Wilkes (in this case the title abbreviation refer to the Letter of Paul to the Hebrews), whereas Hill + Wilkes [Revelations] will mean that both authors have been indicated as main translators of the Book of Revelations. This notation will be especially useful in the case of works authored by writers of different nationalities.

2.25 Points of divergence

With the expression 'points of divergence', I refer to the phonemes or phonological features in Mohawk which posed challenges to the writers attempting to record the Native American language, and generated different notational responses. As mentioned in earlier sections, an incorrect phonetic and phonological analysis resulted in overdifferentiation, underdifferentiation, and displacement. The phonological influence of the native language or other known idioms also played an important role in the resulting linguistic analysis. As has been observed, this in many cases had a strong impact on the perception of phonological aspects of Mohawk, such as non-contrastive voicing. The sounds deemed to create 'points of divergence' in the context of this case study (i.e. voiced and voiceless stops, nasal vowels, /h/) are not intrinsically or problematic per se, being all present in European languages. These elements, however, are sources of inhomogeneity in the transcriptions within the corpus, as different writers tackled them with different approaches and solutions. One of the challenge for transcribers of Mohawk lay with the different phonological patterns of the language. These could be, especially in the case of non-contrastive voicing, in contradiction with phonological rules active in European languages, or could feature known sounds in unfamiliar environments, as in the case of /h/. Other issues were of a perceptual nature, as with regards to the variation in the notation of nasal vowels. As a result, the discussion will have a twofold aim:

- to identify and clarify the problematic nature of particular phonetic or phonological features within the corpus in relation to the different traditions, and
- to describe and analyse the orthographical solution achieved.

2.25.1 Notational variations

In some cases, the divergence is to be attributed to purely notational choices. Two main notational variations can be found in the corpus:

- the use of <Ȣ> by Marcoux, <8> by Onasakenrat and <w> by Cuoq for /w/[34] or short /o/, and the corresponding <w> in the non-French corpus;

- <i> for both /j/ and /i/ in the French corpus, and the corresponding <i> for /i/, along with <y> for /j/ in non-French texts.

Despite their frequent appearance in the corpus, these notations do not bear any particular significance or implication. As such, while they were deemed worthy of mention, they will not be discussed in the analysis.

2.26 Voicing of stops

The influence of previous language knowledge, both native and foreign, becomes especially evident in the case of the treatment of voicing, and it has a clear impact on how writers decided to engage with it.

With regards to non-distinctive voicing, in addition to the above-mentioned differences in the notation of the velar stop /k/, we also find another discrepancy between the two traditions: where Marcoux, Cuoq and Onasakenrat note a <t>, the Anglican missionaries and other Protestant writers employ <d> in the majority of cases. Although not an omnipresent correspondence, as there are a few instances where non-French writers note a <t> in an environment where we would expect a <d> (pre-vocalic), the equivalence between the French <t> and the non-French <d> is a standard in the corpus of Mohawk texts.

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[34] Cuoq decided against the use of <8> or <ȣ> to facilitate the printing process (Cuoq, 1882).

Below are a few examples from the corpus to illustrate the issue (underlined items belong to the French tradition, which will be used as the standard for comparison):

1. <rontatekenhokonha> (Onasakenrat [John - 2.12])
   <rondaddegen ogònwa> (Norton [John - 2.12])
   <rondade kenhokonhah> (Hill / Wilkes [John - 2.12])

2. <teseniteron> (Onasakenrat [Matthew - 1.20])
   <Teghsenideron> (Brant [Matthew - 1.20)]

3. <iontonkariaksk8e> (Onasakenrat [Luke - 1.53])
   <yondonhkaryaksgwe> (Hill [Luke - 1.53])
   <yondoghkariakskwe> (Claus [Liturgy of the Hours])
   <yondoghkariakskwe> (Claesse [Liturgy of the Hours])

4. <satatenatonk8a> (Onasakenrat [John – 1.22])
   <sadaddenadonghkwa> (Norton [John - 1.22])

5. <enhon8anatonk8e> (Onasakenrat [Luke - 1.62])
   <enghhonwanadonghkwe> (Hill [Luke - 1.62])

6. <akwekon> (Williams [BCP - 1.63])
   <agwegon> (Norton [John - 1.9])
   <agwegouh> (Claesse [Liturgy of the Hours])

7. <kanakwaienteri> (Cuoq [Syllabaire])
   <kanaghkwayenderi> (Claesse [Liturgy of the Hours])

8. <ni8ennitake> (Onasakenrat [Luke - 1.26])
   <niwehniddakeh> (Hill [Luke - 1.26])

9. <niatewenniseroke> (Cuoq [Syllabaire])
   <Niyadewighniseroge> (Claesse [Liturgy of the Hours])

Alternation between the use of letters for voiced or voiceless phonemes, however, can occur within the non-French corpus, even when the same sounds appear in the same phonological contexts. If we observe example 9, <t> and <k> in Cuoq's orthography find their voiced counterparts <d> and <g> in Claesse's notation. However, in example 9, <k> in Onasakenrat's text is also present in Hill's translation of the Gospel of Saint Luke, where we would expect <g> to feature instead. The phonological context where /k/ --> [g] is the same in both examples: after a syllable boundary and before a vowel, or $____V. Similarly, in example 10 below, we would expect the first <k> in Norton's orthography to be noted as <g>, given the phonological environment. However, Norton employs <g> for the second <k> in Onasakenrat's translation, where, again, we would expect to find a the voiced velar: $____(w)V.

10. <sakoienhokonha> (Onasakenrat [John - 1.12])
    <s'hakoyea-ongonwa> (Norton [John - 1.12])

In Hill's translation of the Gospel of Saint Luke shown in example 11 below, the same occurs:

11. <nakenikonra> (Onasakenrat [Luke - 1.46])
<nakenigonra> (Hill [Luke - 1.46])

The presence of inconsistencies within the corpus has already been amply discussed in previous sections, and the examples cited show that variation can occur not only within the same page, as Hanzeli commented, but even within the same lexical item. Nonetheless, non-French writers appear more consistent, in their use of <d> in the $_____V context. However, <t> is generally employed when preceded by /h/, or <h> and <gh>.

2.26.1 Discussion

The orthographic renditions in the corpus composed by the French, English, Dutch and German traditions, as such, are not to be considered phonetic transcriptions of Mohawk, nor were they conceived to be, as Postal (1964) noted: they are phonemic. If the need to state this can seem surprising, such a statement was not obvious to Franz Boas. Postal (1964) observed that Boas, in analysing Cuoq's Mohawk texts and Hewitt's *Iroquoian Cosmology*[35] (1903), '[interpreted] both Hewitt's and Cuoq's transcription as PHONETIC. And in these terms he [found] them at fault' (Postal, 1964: 270 – small caps are the author's own). And indeed Boas, in his *Notes on the Iroquoian Languages* (1909) declared, that '[t]he method of rendering sounds in the works of J.A. Cuoq, which in other respects are of rare excellence, is very inadequate' (Boas, 1909: 427) The fact that we would now consider the notations of the French[36] corpus to be phonemic is also extremely interesting for two reasons. Firstly, it is important to note that despite the fact that they were analysing Mohawk in a pre-phonemic era, French writers were nonetheless aware of the non-contrastivity of voicing and of the phonological environment in which it operated. Secondly, these authors clearly made a conscious decision to note both voiceless sounds and their respective voiced allophones with one symbol, that for the voiceless phoneme. I agree with Lounsbury (1960: 35) in defining such an achievement 'truly remarkable' Crucially, Hanzeli (1969) also observed that a lack of explicit statements on linguistic phenomena did not necessarily imply a lack of awareness of their presence or the inability to correctly identify them.

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[35] Hewitt's *Iroquoian Cosmology* does not include <d> or <g> either, and in this it follows the French tradition. However, it included symbols for the glottal stop < ̓>, vowel length, < ˘ > and < ¯ >, and accent < ́>. It also differentiated between a nasalized vowel <V + ñ> and a vowel followed by a nasal <V + n>.

The notation included in the non-French corpus is equally phonemic, but it appeared to be leaning towards a different approach in the transcription of voiced and voiceless plosive, which will be discussed in more detail in the sections below. Here, however, an *ante litteram* awareness of the phonological processes of Mohawk, or indeed other Native American languages, is far more complex to ascertain, mostly due to the notation variations in the transcriptions, highly idiosyncratic, and to the difficulty of establishing previous linguistic knowledge, given the lack of a shared educational background. Conversely, the ability to make more general observations about the French corpus as a whole, and with relative ease, is linked to the fact that the notation in the French corpus is extremely homogenous. So homogenous, in fact, that one single author can be representative of the corpus as a whole. This, in turn, is a result of the centralised nature of the Catholic missions, to the continuous exchange of knowledge and material between generations of missionaries (the collaboration between Marcoux and Cuoq is an excellent example relevant to this corpus), and to a common formal language education.

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[36] With the word 'French', I refer to the French tradition, rather than French-born writers. The same applies to the terms English and Dutch.

A key question, in this particular case, could be: were the writers of the French tradition under-differentiating, or were those of the non-French tradition over-differentiating? Given what has been outlined about the phonology of the Mohawk language (i.e. non-contrastive voicing), I believe one must argue for the latter. The approach adopted by the non-French writers highlights once again the concept of ‘bricolage attitude’ that has been discussed in earlier sections. The orthography reflects what was known about European languages specifically (or assumptions about languages in general), that is, that voicing is contrastive. As a result, non-French writers kept this contrast alive in their orthography, and noted down the letter most appropriate for the plosives they heard. In other words, <t> or <k> were used when a /t/ and /k/ occurred, while <d> and <g> where employed when the corresponding voiced plosives were heard. Interesting observations about this particular perceptual issue have been included in a study carried out by Mithun (1979) involving native speakers and teachers of Iroquoian languages (including Mohawk, on which Mithun’s paper focuses) who were also fluent speakers of English. Mithun reported that, in their attempt to create a working orthography for their native language, ‘[t]he teachers [...] often failed to perceive the non-distinctive voicing differences in Mohawk’ (Mithun, 1979: 344). This perceptual failure, Mithun (1979) continued, was probably due to the influence of the French orthography, which, as we have seen, does not distinguish between voiced and voiceless plosives, therefore making the identification of the phonological pattern even more difficult. However, due to the fact that the subjects of the study were also speakers of English (and users of its orthography), they agreed that the new orthography should nonetheless include the voicing contrast. These observations could explain why the collaboration with native speakers (especially those who were directly educated or otherwise influenced by one tradition or the other) did not result in the approach adopted by French writers in the composition of the religious texts of the non-French tradition.

In earlier sections, it has been noted that the success of a transcription can be highly dependent on individual linguistic abilities. It has also been explained that, along with individual linguistic skills, individual linguistic education, both in terms of native language and of a foreign or ancient language, undoubtedly had a significant impact. However, the reasons for the dichotomy in the approaches between the French and non-French traditions is not necessarily only correlated, in my opinion, with an inherent lack of linguistic skills of the members of the latter group. There are other contextual aspects that need to be considered. It is worth noting that missionary writers (although this is equally true of lay writers as well) were not particularly prone to innovation, and as Nowak (1996) explained, efforts to further evangelization and literacy ‘included the extensive use of material already compiled, which consequently proved to be highly influential for the subsequent linguistic work of the respective missionary group’ (Nowak, 1996: 157). Such a statement holds true for all traditions in this corpus, but its truthfulness is especially evident in the transcriptions created by the non-French groups, who relied on works outside of their missionary denomination or tradition. And indeed, while French missionaries and other authors only made wide use of the material created by their direct predecessors (i.e. previous generations of French missionaries), English-speaking transcribers of Iroquoian languages based their works on previous English, Dutch and Swedish-based writings, and this is visible in their orthographies. Goddard (1996) reported that *Another Tongue Brought In* (1707), a catechism attributed to Cotton Mather, and which is also the first published text in a Five Nation language, might instead have been the result of the studies of Bernardus Freeman, who also collaborated with other

English writers in the composition of Mohawk religious texts. Also strictly linked to Freeman's work, were the activities of Lawrence Claesse, who, as was explained above, was an interpreter to Freeman and to other English ministers. Claesse's work was later revised by the German Daniel Claus, and the 1787 version included Joseph Brant's Gospel of Mark (Goddard, 1996). The account of the spreading of the material within *Another Tongue Brought In* is thus the perfect exemplification, within the non-French corpus, of Nowak's statement. The reason why this is relevant for this discussion is that the majority of the orthographic conventions used by writers of the non-French group, albeit a few idiosyncratic variations, are, in a way, 'inherited' and rarely questioned, especially in the case of English-based texts. Therefore, an initial decision to keep voicing contrast alive and evident in the orthography, might have been a conscious decision carried out by the Dutch writers, and an acknowledged and accepted one by the English.

In addition to the issue of traditional orthographies and 'inheritance', it is still worth reminding ourselves of perceptual issues regarding plosives in French and English. An important difference between French and English plosives is the presence of aspiration in the latter. French voiceless stops, on the other hand, are not aspirated word initially or intervocalic position. It follows that English speakers might perceive, to quote an example relevant to this particular discussion, non-aspirated voiceless stops, like those in Mohawk, as voiced (Tranel, 1987).

2.27 Nasal vowels

Another aspect that is interesting to observe in the texts regards the transcription of nasalised vowels, which are another feature of Mohawk. Cuoq and Marcoux, who 'used largely what has come to be the traditional orthography of Mohawk' (Postal, 1964: 270), note the nasalised vowels /ʌ̃/ and /ũ/ as <en> and <on>, as was indicated by Mithun (1992a) above with regards to the current Mohawk standard orthography. In the non-

French texts, on the other hand, the same nasalised vowels are instead noted as <ou> or <oe> in the case of /ũ/ and <ea> in the case of /λ̃/. However, these translations also employ the French notation, such as in *Ne Kaghyadonghsera ne royadadokenghdy ne Isaiah,* a translation of the book of Isaiah by William Hess (1839), rendering the notation inconsistent and highly variable.

Examples from the corpus to illustrate the issue are below (underlined items belong to the French tradition):

12. <kannatakon> (Onasakenrat [Matthew - 2.23])
    <kanàdakough> (Brant [Matthew - 2.23])

13. <Enekentsi> (Onasakenrat [Luke - 1.32])
    <Enekeaghtsi> (Hill [Luke - 1.32])

14. <onakenke> (Onasakenrat [Luke - 1.24])
    <oghnakeageh> (Hill [Luke - 1.24])

15. <Ori8atokenti> (Onasakenrat [Gospels])
    <o-righwadogeaghty> (Hill [Luke - 1.72])
    <Orighwadogeaghti> Claesse [Liturgy of the Hours])

16. <Ionterennaientakȣa> (Marcoux [BCP])
    <Yoedereanayeadaghwa> (Hill + Nelles [BCP])
    <Yondereanayendakhkwa> (Claus [Liturgy of the Hours])

17. <Sakotatenni> (Onasakenrat [Luke - 1.53)]
    <Sagoghtaghteani> (Claesse [Liturgy of the Hours])

<Sakogaghteani> (Claus [Liturgy of the Hours])

18. <8asakotokaten> (Onasakenrat [Matthew - 2.12])
    <waghs-hakodogatea> (Brant [Matthew - 2.12])

However, these alternative orthographic renditions of /ʌ̃/ and /ũ/ occur along the traditional notations <en> and <on> in the non-French corpus, as exemplified below:

19. <kaiaton> (Onasakenrat [John - 2.17)
    <kaghyadon> (Norton [John – 2.17])

20. <Tahontati> (Onasakenrat [John - 2.18])
    <tahhondady> (Norton [John - 2.18])

21. <tehok8enion> (Onasakenrat [Luke - 1.22])
    <deghhokwenyon> (Hill [Luke - 1.22])

22. <sahon8ari8anontonse> (Onasakenrat [John - 1.19])
    <sanhonwarighwanondonse> (Norton [John - 1.21])

23. <ȣahenron> (Onasakenrat [John - 4.13])
    <wahhenron> (Hill / Wilkes [John - 4.13])

2.27.1 Nasalized vowels vs. oral vowels followed by a nasal

The notations <en> and <on>, generally employed by French missionaries for the Mohawk nasal vowels /ʌ̃/ and /ũ/, can lead to ‘phonetic ambiguity’, as pointed out by Lounsbury (1960: 32). These orthographies do not allow for differentiation between nasalised vowels, and oral vowels which are followed by a nasal consonant. Examples are the Mohawk word *tekeni*, ‘two’, which is pronounced /'tekeni/, and *tsikenenstakwènhten*, ‘holly berry’, pronounced /tsikenʌ̃stɑ'kwʌ̃:htʌ̃/. However, Lounsbury (1960) also observed that lexical context, in addition to the phonological context underlined above (oral vowels in these examples all precede another vowel), should be of guidance in these instances. In Mohawk, nasalised vowels generally occur in pre-consonantal position, while oral vowels followed by the nasal /n/ generally occur before vowels, as vowel sequences are extremely uncommon (Mithun, 1979). Cuoq, however, did differentiate between nasal vowels and oral vowels followed by a nasal consonant in the *Lexique de la Langue Iroquoise* (1882): ‘[p]our indiquer que l’N est nasale, qu’elle termine une syllable et ne commence pas la suivante, je me sers d’une apostrophe renversée’ (Cuoq, 1882: vii). Therefore, <V+nʿ> for a nasalised vowel, and <V+N> for an oral vowel followed by a nasal.

2.27.2 Discussion

The French notation of nasal vowels, that is <V+n> is obviously not surprising, as it was (and still is) the notational standard in French orthography, and has been retained in the current orthography of Mohawk. Such a notation was first employed for Mohawk by Bruyas in the second half of the seventeenth century. As we have seen, it is possible to differentiate between nasal vowels and oral vowels followed by a nasal by taking into account whether the sequence <V+n> precedes a consonant (i.e. nasal vowel), or another vowel (i.e. oral vowel followed by a nasal consonant).

What appears more perplexing, however, is the orthographic rendition of nasal vowels in the non-French tradition and its alternations: <ea> and <en> for the central nasal vowel /ʌ̃/, and <oe>, <ou> and <on> for the high back nasal vowel /ũ/. The notation of nasal vowel /ũ/ with either <oe> or <ou> is, again, not particularly surprising, given that the Dutch-based spelling <oe> and the English-based spelling <ou> both correspond to the high back vowel /u/. On the other hand, the reason for indicating nasality with these particular notations is not immediately evident, and invites discussion on issues of perception and phonemic awareness and orthographic practice. Was nasality not perceived? Was it perceived but not included in the notation? Once again, the key to the puzzle is multilayered.

Firstly, what has been observed within the French corpus, holds true, in my opinion, in the non-French tradition, too. That is, the lack of an immediately explicit notation of a linguistic phenomenon does not automatically imply that it was unnoticed or that writers were unaware of its occurrence. Under closer inspection, however, it can be suggested that these vowel digraphs, not employed to indicate the other oral Mohawk vowels /a/, /e/, /i/, and /o/, did indeed symbolise the Mohawk nasal vowels /ʌ̃/ and /ũ/. The reason to employ digraphs was likely of a practical nature, and related to the difficulty of printing special characters. As explained above, the correspondence between the digraphs <oe>, <ou>, <on> and /ũ/ is not particularly problematic. Conversely, the digraph <ea> for /ʌ̃/, is less straightforward to interpret. I suggest that such notation served to indicate a vowel sound that was perceived to be between /e/ and /a/, that is, /ʌ/, which is absent in German and Dutch. As will be discussed with regards to the transcription of the Berliner Lautarchiv recordings, the practice of using a superscript vowel symbol on top of another vowel symbol in German-based notations indicated a ‘mid-way’ pronunciation between the two. This was noted by John Pickering in his *Essay on a Uniform Orthography for the Indian Languages of North America* (1820). Despite the different application of vowel symbols in this corpus (i.e. horizontal placing rather than vertical, presumably due to the abovementioned printing issues), the concept behind Pickering’s statement, which was included in a discussion over the need to find alternatives to the cumbersome diacritics, is equivalent:

> We might, perhaps, conveniently enough, designate the modified vowel by placing a small *letter* over it, as is done in the German language, where, for example, the vowel *a* [...] if it has a small *e* over it ($\overset{e}{a}$) takes a sound like *a* in fate; and the vowel *o* with a small *e* over it ($\overset{e}{o}$) loses its usual sound and takes one resembling French *eu* (Pickering, 1820: 14) [italics are the author's own]

The alternations of the digraphs <oe> and <ou> vs. <on> for /ũ/ and <ea> vs. <en> for /ʌ̃/, and the phonological contexts in which they are employed, however, are still puzzling. Observably, the variation is not due to an attempt to differentiate between nasal and oral vowels, as the digraphs are found both before another vowel, thus resulting in vowel clusters that do not generally appear in Mohawk[37], and before consonants. However, it can be observed that <ou> but not <on> is generally employed before /h/, or <h> and <gh> in the orthography in word-final position. On the other hand, still in word-final position, the reverse is true if the nasal is not followed by /h/. Therefore: <on__#> but <ough__#> or <ouh__#>.

The alternation in orthographies might in fact be related to perceptual issues. Michelson (1973) and Beatty (1974) reported that nasal vowels can have denasalised allophones in certain context. Beatty observed that can occur in non-careful speech, but /ʌ̃/ would be fully nasalised in stress position.

2.28 /h/

The representation of /h/ in Mohawk within the corpus is observably varied, both in terms of orthographical choices, and in terms of its very presence or absence within the compositions of different transcribers. Good examples of this state of matters can be found in the religious texts of the various traditions, as below.

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[37] 'There is a general phonotactic constraint against two-vowel sequences across morpheme boundaries. Morpheme-internal two-vowel sequences are rare but do occur' (Hopkins, 1987: 445).

24. <ins><8asaka8enhase></ins> (Onasakenrat [John - 2.16])
<wahs'hakawenhaghse> (Norton [John - 2.16])
<waghsakawenhhaghse> (Hill / Wilkes [John - 2.16])

25. <ins><rawenheion></ins> (Cuoq [Syllabaire])
<rawonhheyough> (Claus [Liturgy of the Hours])

26. <ins><ronistenha></ins> (Onasakenrat [Luke - 1.15])
<rònisteaah> (Hill [Luke - 1.15])

It is important to clarify that /h/ can appear in various contexts in the Mohawk language: in inter-vocalic and post-vocalic position, in post-consonantal position, in word-initial position. [h] is also inserted before sonorants in certain contexts, as Mohawk also features preaspiration between a vowel and a sonorant followed by /h/ or word-finally (the examples and explanations below are from Mithun, 1979: 344)

$\emptyset \rightarrow h/V \underline{\quad\quad} R \begin{Bmatrix} \# \\ h \end{Bmatrix}$ as in /kór/ > [góhr][38]

R = n, r, w, y (i.e., $\begin{bmatrix} C \\ +\text{sonorant} \end{bmatrix}$)

2.28.1 Discussion

What is immediately apparent from these example is that the occurrences of <h> or <gh> are far more frequent in the notation of the English and Dutch corpora than in the French texts. One of the contexts where <h> is noted by all traditions is between a nasalised vowel and a following vowel, <ṼhV>, as in examples 24, 25 and 26 above. In my opinion, this is especially interesting to note with regards to the French-based corpus.

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[38] Due to the devoicing of sonorants that also occurs, this should be [góhr̥] (Mithun, 1979).

In Mohawk, as noted above, nasalised vowels appear before consonantal sounds (in this case /h/), whereas oral vowels followed by a nasal precede another vowel, as vowel sequences are rare[39]. Standard French does not allow a nasalised vowel to precede another vowel, as in *ṼV. However, the insertion of *h-aspiré* allows for this rule to be disobeyed, as in ‘enhardir’ /ɑ̃ardir/’ (Walker, 1984: 40). It is not unreasonable to hypothesise, therefore, that French writers might have recognised the similarity between Mohawk and their own language of this pattern, which English, German or Dutch would lack. In this case, therefore, <h> could be a display of an unexpressed (and, again, *ante-litteram*) phonological awareness. This observation is even more interesting if we consider that the French authors fail to note [h] in other phonological contexts, unlike the other traditions, as will be explained below. However, for all traditions, the inclusion (or lack thereof) of [h] is generally fairly challenging to interpret.

27. <8ationon8eraton> (Onasakenrat [Luke - 1.41])
<watyononghweradon> (Hill [Luke - 1.41])

28. <kaiatonsera> (Marcoux [BCP])
<kaghyadouhsera> (Hill [BCP])
<kaghyadonghsera> (Hess [Isaiah])

29. <niioserasen> (Onasakenrat [John - 2.20])
<niyoghseraghsen> (Norton [John - 2.20])
<niyughseraghsenh> (Hess / Wilkes [John - 2.20])

In example 28, <kaiatonsera>, Cuoq and Marcoux use <i>, whereas the Anglican missionaries use <ghy>, suggesting the presence of a different phoneme other than /j/, that is /h/, therefore giving /hj/. The word appears in its current orthographic form as *kahiatónhsera* (First Voices, 2013), and does indeed include <h> which represents /h/. As noted by Lounsbury (1960), Mithun (1992b) and Walker (1996), Cuoq, and other authors of the French tradition, did not note post-vocalic [h] when not followed by another vowel, as well as pre-consonantal [h]. This might explain why texts from the English, German and Dutch traditions feature <gh> or <h> more frequently than those written by French-speaking authors. The analysis of the English, Dutch and German corpus would indeed suggest that these writers included postvocalic *h* far more regularly. For instance, the word in example 29, written by Onasakenrat as <niioserasen>, <niyoghserahgsen> by Norton and <niyughsseraghsenh> by Hess (and Wilkes) suggests the presence of post-vocalic *h*, not noted by the French, but included by the other traditions. In addition, matters are further complicated by the lack of distinction between the notation of /h/ and /ʔ/ by all traditions, rendering the interpretation of <h> and <gh> more challenging. It can be hypothesised, however, that <h> in word-final position in the Dutch, English and German corpus represents the glottal stop, as in the example just discussed. The state of affairs regarding /h/ is not too surprising, given that features like, for example, pre-consonantal *h*, are not predictable (Mithun, 1992b).

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[39] In the French-based copris, the sequence < ii > represents < ij >.

Summary

2.29 Conclusion

Case Study 1 has introduced the reader to the North American religious corpus held at the British Library, and more specifically, to those texts written in the Mohawk language. The section opened with a figure comparing the titles of two translation of the Book of Common Prayer: one written by the Canadian-born and French-speaking Marcoux, and one by the English-speaking catechist John Hill. The diagram was created in order to provide the reader with an initial overview of the kind of the main notational differences between the works of the French tradition and those of the English, German or Dutch traditions. The section has then continued with an overview of the literature available on the North American missionary corpus, highlighting how divisive its evaluation and recognition has been from the point of view of academics. The chapter has provided a detailed account of a series of factors affecting, positively or negatively, the writers' notations of Mohawk. These included, for example, the kind of linguistic education the missionaries received. I explained how the the Greaco-Roman framework of analysis and the assumptions the writers had about the structure and main characteristics of languages (e.g. contrastivity of voicing in consonants) were often inadequately applied to the analysis of North American languages, resulting in inaccurate notations. Quite naturally, I have also illustrated how the writers' native language influenced not only what was ultimately noted, but what was heard as well. The issue of perception was thus investigated, in relation to the degree in which it conditioned the notation of the North American languages.

Chapter 2 has also discussed how the personal attitudes of the writers towards the new populations encountered and their languages could also have an impact on the general quality of the notations. For instance, I focused on those so-called 'flashpoints', or the (often negative) reactions that the divergence between one’s own notions about languages, their structure and universal characteristics and the reality presented by ‘unconforming’ languages provoked in the authors discussed. These ‘flashpoints’, in turn, often resulted in feelings of anxiety, hostility, helplessness or fear that one’s own *status quo* might be at risk. This investigation of the missionaries’ attitudes towards the North American populations has uncovered how deeply these were linked to the success and accuracy of their dictionaries, primers, grammars or translations of religious texts and, as a few commentators pointed out, to the recognition of their scientific value. As mentioned above, earlier transcriptions were also affected by more practical issues. For example, letters were often substituted for one another according to the availability of a particular printing character. In addition, the lack of a standard notation created ambiguity and confusion, for audiences then and for readers now. However, as I pointed out in the Case Study, dismissing the missionary contributions to the study of these languages as devoid of any merit and completely inadequate would be not only unjust, but also inaccurate. Many authors, like Eliot, Williams, Heckewelder, Zeisberger or Cuoq, to name but a few, demonstrated remarkable linguistic acumen and accuracy.

Moving on from these premises, the Chapter has then focused on the comparison between the works on Mohawk of the French tradition, and those from the English, Dutch or German traditions. In particular, the analysis has compared the notation of the voicing of stops, of nasalised vowels, and of the phoneme /h/. Quite interestingly, the discussion has revealed that, for example, the French writers were aware of the non-contrastivity voicing in stops in Mohawk. Therefore, they only included voiceless stops in their texts, which represent the underlying form in the language. By contrast, the writers of the other traditions noted the surface forms, alternating between voiced and voiceless stops, according to the different contexts in which they appeared. As Lounsbury commented, these achievements were ‘truly remarkable’ (1960:35), as they display an awareness of phonological process before the concept of ‘phoneme’ was explicitly formalised. With regards to the notation of /h/ or of nasalised vowel, I also explained how perceptual issues, such as the presence or absence of the phoneme in the language, and orthographic conventions might have affected the notations in the corpus.

Chapter 3: The Making of the International Phonetic Alphabet, from 1788 to 1888

3.0 Introduction

The International Phonetic Alphabet (henceforth IPA), which is now the standard tool for phonetic transcription, has emerged as a result of a series of decisions that were influenced by earlier debates, many of which took place between the end of the eighteenth and the late nineteenth century. This section will describe the reasons behind these debates and the results that were obtained, and show how these have had an impact on the creation of the IPA. However, instead of attempting to describe every proposal for a phonetic notation over the centuries, this section focuses on those systems that were founded on the Roman alphabet, as this is the base of the IPA (with the exception of Bell's *Visible Speech*). The account begins with Jones's *Dissertation* (1799), first published in 1788. As will be shown, Jones's work constitutes one of the first efforts that aimed to achieve a standard and unified notation, although at the time the scope of this was transliteration rather than phonetic transcription. Before then, the state of affairs was unsatisfactory for most intellectuals, as each scholar would use a system of his own.

As stated above, my aim is to show how the system of phonetic notation we now use and that is nowadays the almost universal standard is the result of experimentations, debates and theoretical discussions that took place in earlier centuries, but that were particularly significant from 1788 onwards. My point of view has been mainly historical, and as such I focused my attention on the description of the events and of the debates that have helped develop the IPA.

(In the discussion < > indicate orthography or refer to a symbol and / / indicate pronunciation)

3.1 A standard for transliteration

Before the Roman alphabet began to be considered as a possible basis for the construction of a system devoted to representing the sounds of the known languages, that is, for transcription, the main concern of the grammarians was to find a suitable methodology for the transliteration of the known non-roman scripts. The focus was especially on classical languages, such as Sanskrit, Persian and other Oriental languages, and on the Holy script, that is Hebrew. A unified and standardised method for transliteration, was needed for a series of reasons:

- There was no previous agreed standard: each grammarian or missionary would adopt a system of his own, creating considerable confusion; for this reason, many of the descriptions were accompanied by a key or an explanation of the pronunciation of a particular letter or sound;
- the system would aid learners to read and write the language more easily and more quickly;
- it would help learners of biblical studies, who did not necessarily need to speak Hebrew;
- it would help the work of merchants and that of missionaries, introducing a writing system for those cultures that were lacking one, thus easing the process of Evangelization;
- it would provide for the need of consistency that was necessary in the creation of geographical maps.

Despite the fact that the Roman alphabet was used in most of the earliest descriptions (i.e. before the seventeenth century), the suitability of this script for the purpose of transliteration was not agreed upon unanimously, as it will be shown.

However, most grammarians and missionaries agreed that it was a viable, sensible and practical approach to non-roman scripts. Nonetheless, as observed above, this system was not free from imperfections, mostly due to the inadequacy of the English orthographical system to render in writing foreign sounds without creating confusion, and to the distinct lack of agreement among scholars on a unified system of notation. This intricate state of affairs, perceived by the grammarians themselves, implied that the notation of the pronunciation of a particular language was in many cases unclear and ambiguous.

One of the strongest advocates of the benefits of Romanisation, and one of the first figures to attempt the creation of a standard method was William Jones. He, together with other Orientalists, such as Halhed and Gilchrist, asserted that application of the Roman alphabets to oriental scripts was ‘convenient and sometimes necessary’ (Jones, 1799: 175), and presented the principles of his system in his *Dissertation on the Orthography of Asiatick Words in Roman Letters,* which first appeared in 1788. It was true that the advantages were multiple, and the reasons behind the application of such a system were mostly concerned with the benefits that a familiar script would bring to the learners of those idioms, especially missionaries or merchants. Moreover, it was recognised that employing an alphabet characterised by more regular division of syllables in consonants and vowels would be extremely useful to transliterate the abjad writing systems that, like Arabic, only partially provide symbols for vowels, significantly complicating the process of reading and learning (Lepsius, 1863). Halhed was also a promoter of such an approach, and he too, in 1776, presented a model for vowel notation which followed the English pronunciation system in *Code of Gentoo Laws,* a work created to comply with the demand of Warren Hastings, the then Governor-General of India.

3.2 William Jones and John Borthwick Gilchrist

The methodologies followed by scholars in order to reduce non-Latin scripts, especially Asiatic ones, to the Roman alphabet were mainly two. The first, followed by William Jones (1746-1794), the letter-to-letter approach, or transliteration, consisted in presenting each character of the foreign script with its correspondent letter from the Roman alphabet, and was not concerned with reflecting pronunciation accurately. This was generally the preferred method that recognised the extreme inconsistency of the English writing system. It thus sought to create a more systematic and coherent notation with it, often employing diacritics and other languages' sound notation, especially Italian or French for vowels. The second approach, applied by, for example, John Borthwick Gilchrist (1759-1841)[40] and Nathaniel Brassey Halhed (1751-1830), on the other hand, aimed to render the pronunciation of the language, often by manipulating the English orthography to resemble particular sounds. However, despite being useful for those who were not acquainted with the language, as it attempted to imitate pronunciation, it was clear that the results could only be approximate, especially with regards to vocalic sounds (Jones, 1799; Aurousseau, 1942).

Both methodologies shared the same theoretical principles. They concurred that 'the two greatest defects in the orthography of any language are the application of the same letter to several different sounds, and of different letters to the same sound' (Jones, 1799: 7). A new notation model would have had then to avoid these faults at all costs. The systems were mostly similar with regards to consonants, as both employed the English notation for them. However, Jones made a wider use of diacritics than Halhed or Gilchrist, and distinguished between lenis and hard sounds of consonants, for example those of the letters <t> and <d> (Prinsep, 1859). The main differences between the two methods lay with vowel notation. Jones employed the so-called continental system, that is, the notation of vocalic sounds according to languages such as Italian, German or French. For instance, /u/ is transcribed as <u> and /i/ as <ī> or <í>. The Halhed-Gilchrist methodology, on the other hand, was dependent on the English orthography and on the alternation between standard typeface and italics, and generally noted long vowel sounds with two symbols. For example, the sound /i/ is noted as <ee>, /ɔː/ sometimes as <aw>, and the vowel sounds in the words 'poor' and 'good' can be transcribed as <oo> and <*oo*> respectively (Trevelyan, 1859b; Aurousseau, 1942). Below in Figure 2 are the two systems:

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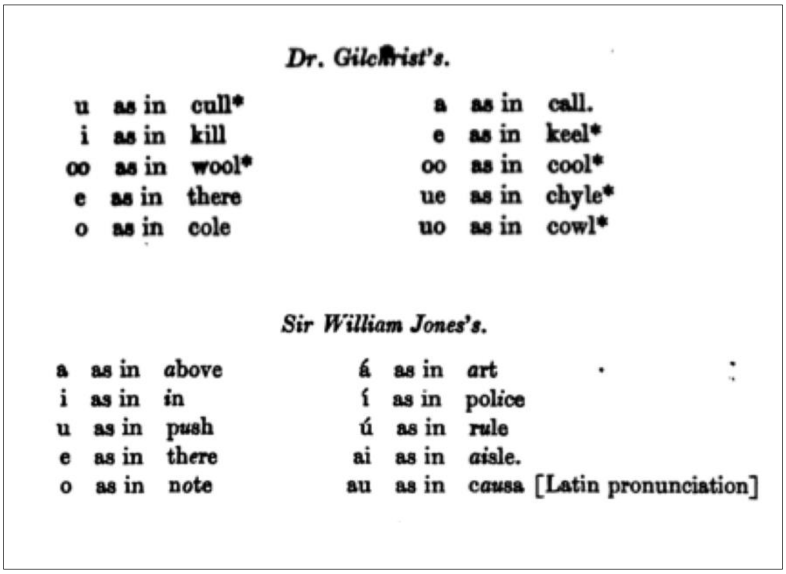
[40] Gilchrist, J.B. (1796) *A grammar, of the Hindoostanee language, or part third of volume first, of a system of Hindoostanee philology.* Calcutta: Chronicle Press
(1787-90) *A dictionary, English and Hindoostanee, in which the words are marked with their distinguishing initials; as Hinduwee, Arabic, and Persian. Whence the Hindoostanee or what is Vulgarly, but Improperly, called the Moor Language, is evidently formed*. Calcutta: Stuart and Cooper
(1804) *The Hindee-Roman orthoepigraphical ultimatum or A systematic, discriminative view of oriental and occidental sounds.* Calcutta



Dr. Gilchrist's.

u	as in	cull*	a	as in	call.
i	as in	kill	e	as in	keel*
oo	as in	wool*	oo	as in	cool*
e	as in	there	ue	as in	chyle*
o	as in	cole	uo	as in	cowl*

Sir William Jones's.

a	as in	*a*bove	á	as in	*a*rt
i	as in	*i*n	í	as in	pol*i*ce
u	as in	p*u*sh	ú	as in	r*u*le
e	as in	th*e*re	ai	as in	*ai*sle.
o	as in	n*o*te	au	as in	c*au*sa [Latin pronunciation]

Figure 2: Jones's and Gilchrist's vowel systems compared. (Trevelyan, 1859b: 149)

The Halhed-Gilchrist model had the chance to gain ground, especially in India after both methods were compared and Jones's method was discarded. Appraised by many, it was the most widely used model for the first three decades of the nineteenth century, with Lepsius (1863) marking the ending date in 1834 (Aurousseau, 1942). This success was perhaps also due to the support of such a prominent Orientalist as Sir Charles Wilkins.

3.3 The Roman alphabet or the original scripts? The debate over Romanisation

However, even approximately four decades since William Jones's *Dissertation on the Orthography of Asiatick Words in Roman Letters* (1799) first appeared in 1788, the members of the Asiatic Society, founded by Jones himself, were engaged in a lively debate on the merits and on the drawbacks of substituting Asiatic scripts with the characters employed by the Roman alphabet. This methodology was viewed as being desirable, rational and advisable, but also as unsuitable, illogical and destined to fail. The reasoning behind both views was mainly of a practical nature, including issues such as those of printability, financial expenditure, intelligibility, and cultural advantages. The main arguments put forward over the years in favour of one side or the other are listed in the series of responses that followed the presentation of Joseph Thompson's *Dictionary of Urdu* composed entirely using the Roman alphabet in 1833. These were collected, arranged chronologically and given to print by Monier Monier-Williams (1819-1899) in his *Application of the Roman Alphabet to the Languages of India* (1859).

Among those who opposed it were figures such as James Prinsep and John Tytler. Prinsep (1859) defined the substitution of the Devanagari script with the Roman alphabet to be a form of 'ultra-radicalism' (1859: 2). Similarly, Tytler (1859) was particularly sceptical, fearing that the adoption of the Latin alphabet in place of the oriental scripts would run the risk of making the Society fall below its standards, and he failed to see who would benefit from such an approach. It was, after all, also a matter of prestige. The status of those academics who could interpret and decode languages that were perceived by the rest of the non-academic world as mysterious and unapproachable, would run the risk of being compromised, if the key to such an elitist knowledge was to be made available to the masses. Other objections were of a financial nature. For example, it was argued by both Orientalists that publishing works using the Roman script would not be the desirable course of action, as it was often the case that more than a single foreign character would correspond to multiple letters in the Roman counterpart. Moreover, it was argued that a complete Romanization of Persian, Arabic, Urdu, Hindustani, etc., especially for the means of education, would result in endless inconveniences for the speakers of those idioms, resulting in the system being unintelligible and requiring a long time to be learnt. More importantly, Tytler and Prinsep were contesting the suitability of the Roman letters for that purpose. The Roman alphabet and the English orthography, with its famously irregular and inconsistent writing system, could simply not render the pronunciation of another language without creating confusion, let alone attempting to note sounds that did not exist in English or other European tongues (Monier-Williams, 1859).

On the other hand, those who were favourable to Romanisation, such as Sir Charles Trevelyan or Reverend Alexander Duff defended in their speeches its practicability and logicality, and pointed out the advantages that multiple communities, from European students to Asian speakers, would gain if such a unified system of transcription was agreed upon. This, they argued, would also promote amicability between the East and the West, encourage reciprocal interest in their respective cultures, and provide the speakers of the romanised idioms with a more efficient, regular and stable learning tool, as opposed to the abjads, which do note vowels clearly enough. Again, as opposed to their challengers, Trevelyan and Duff instead observed how much easier and financially wiser it would have been to print the Roman alphabet, surely more widely established in the printing industries than the Asian scripts. Moreover, it was noted how successfully over time the Latin writing system had conquered a multitude of cultures and countries, becoming the most widely used script of the time (Trevelyan, 1859a and Duff, 1859). Finally, Reverend Duff (1859) observed how the Roman characters, as arbitrary entities could have theoretically substituted any script in use, obviously with the necessary addition of diacritics. Moreover, he crucially contested the objection presented by some Orientalists, Tytler being one of them, who tended to confuse the use of the Latin alphabet with the employment of the English writing system. As Monier-Williams (1859) observed, this fundamental misunderstanding was quite peculiar, especially from personalities who were surely experts on such matters. However, the will of the advocates of Romanisation was not that of adapting the foreign script to the irregular writing system of English, but to create a whole new model of notation free from language-particular impositions by the means of the Roman script (Monier-Williams, 1859).

Despite the initial resistance, in the following phases of this debate the concept of Romanisation and its applicability 'gathered strength, till at last, in the healthy atmosphere of liberal and open enquiry, this grand conception [...] acquired a force and a vitality which nothing [could] now extinguish' (Monier-Williams, 1859: vi). This change of scenery can be attributed to the above-mentioned speeches given by Reverend Duff and Charles Trevelyan that, in a way, won the argument. And surely, whatever was agreed in the Asiatic Society would subsequently dictate the course of action to be followed, at least for matters related to the Oriental languages. This 'victory' led to a series of chain events. The most important one is that romanised books started to be published, and funds were gathered for this purpose from around 1836. Also, Romanisation began to be adopted by colonies and by a series of societies, missionary ones, and even by the Royal Geographic Society, and used for official papers and documents, all of this contributing to the spread of this approach (Monier-Williams, 1859; Aurousseau, 1942). In spite of the debate still continuing with a much softer tone in some of the newspapers in the second half of the nineteenth century, notably on the pages of the *Times*, it was clear that Romanisation had won its battle. From the second half of the nineteenth century, constant improvements to the known systems of Romanisation, predominantly William Jones's, that is, the Jonesian system, were being presented, leading, for example, to Lepsius's

Standard Alphabet and eventually to the International Phonetic Alphabet (Monier-Williams, 1859; Aurousseau, 1942; Cannon, 1990).

3.4 A method for transliteration: Halhed-Gilchrist and the Jonesian system

After it was established that Romanisation was the right approach to follow with regards to Asian alphabets, it had still to be decided which system of transliteration would be the most suitable for the purpose. The two main candidates were the Jonesian system and the Halhed-Gilchrist system.

In his speech defending the superiority of Gilchrist's system, Henry Thoby Prinsep (1859), brother of the above-mentioned James, attempted to explain why the Jonesian methodology just did not manage to be successfully adopted. He suggested that perhaps this was due to 'some inherent defect in the system that induced its rejection, and led to others being preferred' (Prinsep, 1859: 141). And this, he went on to note, was despite its being recommend by the Asiatic Society, and despite being employed in official documents. The flaw, as Prinsep saw it, was that the Jonesian system was ideal for those who were already acquainted with the languages of the East and familiar with their pronunciation, who therefore did not especially need a detailed account of it, whereas the Gilchrist system provided beginners with a more accurate rendition of the correct pronunciation. Moreover, Prinsep noted that the Jonesian system would certainly have been useful for learners of Sanskrit, as most of the grammar and dictionaries of that language employed it, but not as much for Persian, or Hindustani, whose grammars and dictionaries were mostly composed using the Gilchrist model. Finally, the vowel notation employed by Jones was felt to be odd, and in contradiction with what readers of English had been used to since infancy. For example, he remarked that Jones's use of ' 'au' for the sound of ow in how was so unnatural that it was gladly discarded for ou' (Prinsep, 1859: 142).

However, once again the intervention of Charles Trevelyan was decisive in settling the debate (Monier-Williams, 1859; Lepsius, 1863). In another one of his interventions in 1834, he praised the Jonesian system for its regularity and linearity as opposed to the Halhed-Gilchrist model. In particular, he remarked how in Jones's methodology 'in every case in which an analogy exists between different sounds, a corresponding analogy will be found to pervade the signs by which they are represented' (Trevelyan, 1859b: 150). For instance, the long sound of the letter a is <à> and the short one is <a>; the long sound of the letter i is <ì> and the short counterpart is <i>, etc.. The analogy is also preserved when noting diphthongs, which are only expressed by the characters that are employed to produce them. Hence the diphthong /aʊ/ as in the word 'how' is noted as <au>, a notation that includes the vowels required to pronounce the diphthong. On the other hand, the same sound is represented by Gilchrist as <uo>. The clarity of representation of the Jonesian approach, Trevelyan went on to comment, which also reflected the regularity of the Devanagari alphabet, facilitated enormously the learning process. Moreover, Jones followed more thoroughly the one sound /one character principle, as opposed to Gilchrist who would often employed double symbols for a simple vowel sound. Trevelyan, who also had in mind financial matters and practicality, noted how printing books which applied Jones's method was therefore going to be less expensive, as fewer characters would have to be printed. Finally, in reply to H.T. Prinsep's observation about the lack of success of Jones's methodology, he simply retorted this could not be attributable to any flaw in the system, but it was instead merely due to the fact that Gilchrist 'wrote, and taught, and published' (Trevelyan, 1859b: 160). In other words, the Jonesian approach had not been as successful as its counterpart simply because it had not been promoted and divulged enough.

As was noted, the words of Trevelyan, who demonstrated with coherent and unquestionable arguments the superiority of William Jones's methodology, contributed greatly to the success of the Jonesian system and to its establishment as the designated model of transliteration for Asiatic scripts (Monier-Williams, 1859). This, as was shown, was after a series of lively debates that eventually declared Jones's approach to be the most suitable one for Romanisation. After 1834, the model was applied by missionary societies, teachers, and almost every author dealing with matters concerning the East (Trevelyan, 1859b). In other words, it became popular, as Sir Trevelyan had advocated. However, as Aurousseau (1942) observed, the decline of the Halhed-Gilchrist system was also caused by the technological development occurring around the middle of the nineteenth century. In particular, the advancement of techniques of sound and speech recording, and the introduction of phonetic symbols meant that more accurate transcription methods were required.

Although not perfect, as parts of the alphabet devised by William Jones were successively modified, even by Trevelyan himself, the Jonesian system influenced the vast majority of the works that followed. For example, 'the systems of transliteration presently used by the Royal Geographic Society, are directly traceable to the proposals of Jones's (Wellisch, 1978: 199). Some of the flaws were due to Jones's somewhat faulty knowledge of sounds themselves and of their physical production (Lepsius, 1863). Moreover, as more and more languages were being discovered, new symbols had to be introduced and diacritics applied to highlight phonemic differences not previously caught by Jones's ear. Nonetheless, however modified, the principles that were at the basis of its creation, were praised by most academics, and used in devising other unified and standard alphabets. As noted by Wellisch (1978), Jones's paper 'marks the beginning of phonetic transcription based on scientific principles' (Wellisch, 1978: 199).

3.5 The pursuit of a Universal Alphabet: The Volney Prize

Debates of a similar nature, although it will be seen that the reasons behind the pursuit of a standardised alphabet were different in purpose, were taking place in France. ‘What Sir William Jones had done for the English-speaking scholars, the French Orientalist Constatin-François Volney (1757-1820)[41] undertook to do for French philologists’ (Wellisch, 1978: 202).

Volney, a statesman who was made Count by Napoleon, was a scholar of Oriental languages and had the chance to travel widely through Egypt and Syria (Lepsius; Wellisch, 1978). Volney made similar remarks about the current state of affairs with regards to the pursuit of a suitable system as those made by William Jones. He noted that the lack of a standardised and unified method was the cause of great confusion among scholars, and in particular he noted that the consequences of this were especially felt in the ambit of geographical mapping.

In 1794, Volney published the *Simplification des langues orientales, ou méthode nouvelle et facile d’apprendre les langues Arabe, Persane et Turque, avec des caractères Européens,* which was intended to provide scholars with a method of phonetic transcription for Arabic, Persian, and Turkish. A great part of the work was devoted to the description of the grammar of Arabic, which constituted the first publication on the subject in France since 1613[42]; the attitude of the work was practical, rather than theoretical (Kemp, 1999). The one sound/ one symbol rule was disobeyed in the work only once, when it uses the notation <ai> for /e/, following the French orthography (Lepsius, 1863). The method employed mostly Latin characters, with only a few Greek symbols for implementation. For example, he used <χ> and <θ> for the same sounds those symbols represent in the IPA. He also created some new symbols, such as one similar to <ψ> for /ʃ/. The devising of the new characters was based on the shape of the emphatic Arabic vowel it attempted to transliterate, a process that Volney defined ‘syngrammatisation’ (Kemp, 1999). In other cases, he proceeded to modify existing characters, not necessarily only roman, but without the use of diacritics, such as <ƌ> (Lepsius, 1863).

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[41] Constantin-François Chassboeuf, Compte de Volney.

[42] Erpenius, T. (1613) *Grammatica Arabica, quinque libris methodicè explicata.* Leidae: In Officina Raphelengiana

After the publication of the *Simplification des langues orientales,* Volney sent a letter to the Commision Exécutive des Affaires Extérieures, in which he proclaimed his intent to establish in Europe a common method to ‘write’ oriental languages and to prepare the way for the creation of a universal alphabet [43]. In his proposition he also deemed it necessary to observe that an accurate knowledge of the anatomy of the vocal organs was vital for a sound method of transcription. As Kemp (1999) notes, an approach to the topic of this kind was uncommon at the time.

A Commission was instituted in 1803 in France to aid the publication of a Geographical Atlas, containing maps of Egypt employing over 5,000 Arabic words, which was to be included in Napoleon’s *Description de l’Egypte*. The project needed a coherent system of transliteration, as each word was to be indicated via the use of the Latin alphabet (Lepsius, 1863; Kemp, 1999).

The Commission did adopt Volney’s system, or at least attempted to follow some of the principles that guided it, but modified it substantially, and often in open contrast with what was outlined by Volney. One of the most blatant violations of Volney’s system was the introduction of several digraphs, a clear disobedience to the one sound/ one symbol principle (Lepsius, 1863; Kemp, 1999).

Volney was clearly dissatisfied with the proceedings, and in 1819 published a revised and enlarged version of the previous method, *L'Alphabet Européen appliqué aux langues asiatiques* (1819). In the hope of gaining some support, the work was dedicated to the Asiatic Society of Bengal which, however, rejected it, stating that 'the time was not yet ripe' (Kemp, 1999: 483) for its adoption. The work was intended to serve the purpose of transliteration for more languages and scripts than its predecessor, such as Syriac, Hebrew and Ethiopic. This model included a larger number of roman-based symbols, having 60 in total, and relied a little more on diacritics than the previous attempt. Volney still rejected digraphs, but also discontinued the use of Greek characters (Kemp, 1999).

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[43] ‘de répandre en Europe une méthode commune d’écrire les langues orientales, et de preparer les voies à un alphabet universel’ (Kemp, 1999: 498).

Despite being driven by the right theoretical reasoning, such as, for example, the one sound/ one symbol concept, Lepsius (1863) observed that these three versions of Volney's transliteration models were never adopted and therefore never achieved a wide spread recognition, 'because his proposal was based neither on scientific nor upon practical principles' (Lepsius, 1863: 36). In other words, Lepsius noted the several inaccurate phonetic observations present in the work, and lamented a lack of practicality that, in Lepsius's view, consisted in the fact that the system was only meant to be employed for transliteration of the Arabic alphabet, not even including Indian languages, and was therefore too limited in scope (Lepsius, 1863; Kemp, 1999). The work, however, was still influential for all following French attempts and transcription systems at least until the end of the nineteenth century (Wellisch, 1978).

Recognising the flaws in his own work, Volney donated 24,000 francs in his will as a prize, the Prix Volney, to be awarded to the scholar who could create a system capable of expressing all the foreign scripts of the world with the Roman alphabet (Kemp,1999; Wellisch, 1978). The prize was then meant to encourage scholars to find a viable, suitable and 'harmonic' solution to the question of transliteration, but the author also hoped that through the system itself, the culture of the East could become more accessible, and vice versa, as the system would also serve the purpose of educating those cultures. The Prize was to be conferred by a joint commission of a few selected members of three French Academies, the Académie Française, the Académie des Inscriptions et Belle-Lettres, and the Académie des Sciences (Kemp, 1999).

In 1821 the Commission read and analysed Volney's intention and provided their interpretation of it. The decisions made as a consequence of this were the following:

- the method would not need to provide a notation for each of the sounds the human vocal organs were thought to be able to produce. This then ruled out some of the earlier attempt at universal languages, such as those of Francis Lodowyck[44] and John Wilkins [45]. This was for practical reasons as the intention was to speed up the process of creation of the system;
- the system could not be based on the writing system used by one country in particular (so, for example, it could not be based on the Greek alphabet);
- the meaning of 'Asiatic' was extended further than what Volney had mentioned, so that Semitic and Indian languages were to be included in the scope of the system as well (Kemp, 1999).

This last decision was a cause of controversy among the participants, those who were satisfied of including only a few languages, and those who felt that this was a betrayal of Volney's will, which hinted at a much wider plan. In 1822, when the first competition took place, the winning essay had to answer in a satisfactory way four questions posed by the joint commission:

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[44] Lodowyck, F. (1686) *An Essay Towards An Universal Alphabet.* London

[45] Wilkins, J. (1668) *Essay Towards a Real Character and a Philosophical Language*. London, Sa. Gellibrand and John Martin

- the means for realising Volney's plan;
- the scope of the application of the alphabet to languages;
- the procedure to be followed;
- the results to be expected (Kemp, 1999).

The four contestants who took part were Joseph Scherer, Ivan Aleksandrovich Goulianoff, Andreas August Ernst Schleiermacher, and a fourth unknown one (Kemp, 1999). Joseph Scherer won the prize together with Schleiermacher, and in his essay he dealt with some of the issues that had been discussed in William Jones's *Dissertation* and that would later be evaluated by the members of the Asiatic Society. One of these issues regarded the interpretation of the word 'transcrire' in French in accordance with Volney's intentions. Scherer referred to what was stated by Jones in his piece regarding the debate on whether to convey pronunciation (to transcribe) or orthography (to transliterate). Scherer concluded that Volney's will intended to find a system that would achieve both, and that perhaps William Jones had managed in the intent. However, he decided to choose one of the two, and pursued the goal of conveying pronunciation (Kemp, 1999). Scherer indicated some of the problems that such a choice would pose. For example, one would have to choose a single variety of a language, which could be difficult and controversial; even when such a decision was made, one needed to consider that languages change over time; finally, he felt that recording pronunciation exactly was unattainable. In summary:

- the new system would have to represent pronunciation or both pronunciation and orthography;
- the new system would have to include an explanation of how to employ it;
- it would have to follow the one sound/ one symbol principle;
- it should be based on 'familiar' characters (that is, on the Roman alphabet),

with implementations from the Greek alphabet or other symbols (diacritics);

- it should be easy to handwrite and print;
- in theory, it could be employed for any language (Kemp, 1999).

The system would also have a beneficial impact on the learning of these languages, as it would speed up learning times, the characters would be easy to print so these languages would be known to a wider audience, and it would aid communication in the colonies, trading and commerce (Kemp, 1999).

Schleiermacher's essay was significantly less thorough than Scherer's. Unlike Scherer, Schleiermacher agreed on the objections posed by those who opposed conveying pronunciation and opted for orthography instead. He decided to include fewer languages into the scope of his system, limiting himself only to those Asian ones that had a literary tradition, with the addition of Russian. He was also more careful and realistic than Scherer in evaluating the benefits of the system, emphasising those for literature. Schleiermacher, however, if less thorough in the discussion of the question proposed by the Commission, provided a very detailed appendix in which he presented quite knowledgeable descriptions of the sounds of Asiatic languages, Indian ones in particular (Kemp, 1999).

The topic of the 1823 competition was the creation of a harmonic [46] alphabet, based on the Latin writing system and on the one sound/one symbol principle, which would be completed by the addition of only a few and necessary diacritics, and which, if possible, would convey both orthography and pronunciation. Scherer and Schleiermacher [47] participated again, together with Gilchrist, François Ricardi and Pierre Charles Andries. Scherer was again the winner, but the Commission felt that his proposal was not satisfactory, as they felt it would never be adopted by any of the Orientalists (Kemp, 1999). The essay presented suggestions for three kinds of notation systems, which were, however, not particularly accurate from a phonetic point of view, as it did not deem it necessary to convey phonemic differences. The first, which Scherer defined ‘phonographic’, aimed to convey pronunciation; the second, ‘semiographic’ attempted to represent orthography; the third was meant to be a merger of the previous two, employing both the lower case characters he used for the phonographic notation, and the upper case letters from the semiographic one. Overall, the notation systems allowed for the introduction of newly created symbols or of modified versions of Roman characters like, for example, turned letters, and employed some Greek characters (Kemp, 1999).

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[46] 'Harmonic' in the sense that it had to 'harmonize' all previous attempts (Kemp, 1999).

[47] Schleiermacher's contribution was substantially the same as his 1822 entry (Kemp, 1999).

Abandoned for a few years, the topic of the creation of a system was reprised in the 1827 competition,[48] won by Schleiermacher. This version formed the basis of what would be later modified in 1835 and finally merge with the *Harmonic Alphabet,* [49] published posthumously in 1864. The scope of the work was to solve undisputedly the question of transliteration of non-roman alphabets. It contained 100 characters plus diacritics, for a total of 275 symbols, which can explain why the system was never adopted for use (Wellisch, 1978). The work included 32 languages in 1827, and as in the 1822 competition, it represented orthography, and not pronunciation. Schleiermacher rejected the use of digraphs or of non-Roman characters, but was favourable, as was noted, to the large use of diacritics, but not for vowels, unless when indicating tone. The symbols for the vowels were assigned the values they have in Italian, and the consonantal sounds were organised mainly according to physiological principles. However, some of the choices of characters were admittedly arbitrary, the use of diacritics was not always consistent, and the phonetic categories, such as the more modern distinction between place and manner of articulation, were not correctly identified and organised. Kemp (1999) also observes how Schleiermacher adhered more strictly to the one symbol/ one sound principle, some similar but not identical sounds being represented by one character, than to the one sound/ one symbol. Nonetheless, Wellisch (1978) considers Schleiermacher's attempt to be 'the first systematic and scientifically sound system for exact transliteration' (Wellisch, 1978: 206)

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[48] The Commission became disillusioned with the quest, as no satisfactory solution emerged, and later decided to exclude the topic from the following competitions (Lepsius, 1864).

[49] Schleiermacher, A.A.E. (1864) *Das harmonische oder allgemeine Alphabet zur Transcription fremder Schriftsysteme in lateinische Schrift, zunächst in seiner Anwendung auf die slawischen und semitischen Sprachen.* Darmstadt.

3.6 From transliteration to transcription

The last thirty or forty years of the nineteenth century saw an increase of interest in the issue of transcribing the sounds of languages, as opposed to the mere transliteration of foreign scripts. This is not to say that previous attempts at phonetic transcription did not appear before this time, but it is around this period that phonetic transcription began to be based on scientific and systematic principles (Wellisch, 1978). Until then, most grammarians only had an approximate and often inadequate knowledge of articulatory phonetics and even more often no knowledge at all of auditory phonetics; this is not surprising if one considers how instrumental phonetics was basically absent. It began to be agreed by many that a good knowledge of phonetic issues was desirable for effective language description (Morpurgo Davies, 2003). Some of the reasons which prompted this change of attitude were in part similar to those that inspired the creation of transliteration systems, and included:

- notation of sounds of those languages without a writing system and promotion and aiding of Evangelization;
- teaching the deaf;

- aiding the learning of foreign languages;
- notation of language variation for scientific purposes;
- spelling reforms (Morpurgo Davies, 2003).

Other reasons were of a more theoretical nature. We have seen how the concept of Universal Alphabets and their creation were issues discussed in Europe even before William Jones's *Dissertation* (1799). However, they were particularly relevant at this time (e.g. Volney Prize). It has also been shown how the system put forward by various scholars (whether alphabetic, non-alphabetic or iconic) had not been successful enough to be considered for adoption. However, many of the attempts, from the second half of the nineteenth century onwards promoted a more appropriate phonetic knowledge, and the phonetic analyses present in those works were great improvements from previous works (Morpurgo Davies, 2003).

In addition, around the middle of the nineteenth century, works on the recording of human speech and its articulatory and acoustic features were being published (Aurousseau, 1942). Particularly significant were also the works of E. W. Brücke (1856)[50] on the classification of human speech sounds based on articulatory features, of K.L. Merkel (1857; 1866)[51] on the anatomy of speech organs and on the acoustic characteristics of speech sounds, also from a prosodic point of view, and of H.L.F Helmholtz (1863)[52] on vocalic quality and the synthesizing of vowels. Morpurgo Davies indicates this work as being what 'led to the beginning of acoustic phonetics' (Morpurgo

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[50] Brücke, E. W. (1856) *Grundzüge der Physiologie und Systematik der Sprachlaute für Linguisten und Taubstummenlehrer.* Wien: C. Gerold's Sohn

[51] Merkel, K.L. (1857) *Anatomie und Physiologie des menschlichen Stimm- und Sprach-Organs (Anthropophonik.): Nach eigenen Beobachtungen und Versuchen wissenschaftlich begründet und für studirende und ausübende Ärzte, Physiologen, Akustiker, Sänger, Gesanglehrer, Tonsetzer, öffentliche Redner, Pädagogen und Sprachforscher*. Leipzig: A. Abel
(1866) *Physiologie der menschlichen sprache: physiologische Laletik.* Lepizig: Wigand

[52] Helmholtz, H.L.F. (1863) *Die Lehre von den Tonempfindungen als physiologische Grundlage für die Theorie der Musick.* Braunschweig: F. Vieweg und Sohn

Davies, 2003: 162).

Finally, another motivation for the need of a deeper phonetic knowledge came from historical and comparative linguistics. It began to be recognized, thanks to figures such as Karl Moriz Rapp[53] [54], and the above-mentioned works by Merkel and Brücke, that phonetics was a valid and helpful tool to this field, especially with regards to the historical reconstruction of sound change in languages. Moreover, since the etymological relationship between languages had already been somewhat exhaustively explored by Bopp and Grimm, amongst others, it was time to explain those relations from a phonetic point of view, also. Ernst W. Brücke and Karl L. Merkel also put forward plans for transcription systems. These had a physiological basis, as a result of the fact that most of the German academics involved in phonetic studies were physiologists or physicists, and thus included particularly successful explanations of the mechanisms of speech production, and of the physiology of the speech organs, influenced by Manuel Garcia's introduction of the laryngoscope (Sweet, 1877). Sweet praised these descriptions, and, for example, stated that Merkel's physiological account 'for fullness and accuracy stands quite alone' (Sweet, 1877: vi). Brücke's system, described in *Grundzüge der Physiologie der Sprachlaute* (1856), was Roman-based but included some Greek characters and diacritics in the form of superscript numerals to represent places of articulation. In *Über eine neue Methode der phonetischen Transkription* (1863) Brücke described an iconic system, in which symbols were formed by the conjunction of two main elements, one indicating place and one manner of articulation. Other elements were employed to indicate phonation types and other suprasegmental features (Kemp, 1994). Merkel's notation, developed in *Anatomie und Physiologie des menschlichen Stimm- und Sprachorgans* (1857) was also iconic but was deemed to be too complicated for practical use. As a result, none of these system were adopted (Kemp, 1981; 1994). A similar fate was shared by the attempts of Felix Henri du Bois-Reymond, who in *Kadmus* (1862) developed a notation system which employed the Roman alphabet but according to iconic criteria, and of Moritz Thausing, who described a method for transcription which employed a system similar to that of music notation in *Das natürliche Lautsystem der menschlichen Sprache* (1863) (Kemp, 1981; 1994).

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[53] Rapp, K.M. (1836-41) *Versuch einer Physiologie der Sprache, nebst historischer Entwicklung der abendländischen Idiome nach physiologischen Grundsätzen.* Stuttgart und Tübingen: Cotta

[54] In *Versuch einer Physiologie* (1836-41) Rapp presented a proposal for a roman-based transcription system, which included Greek and Old English characters and had a physiological basis (Kemp, 1981; 1994).

If this was the situation in Germany, the state of affairs in England was not too dissimilar, and the works of Alexander John Ellis and Alexander =Melville Bell promoted a similar approach (Morpurgo Davies, 2003).

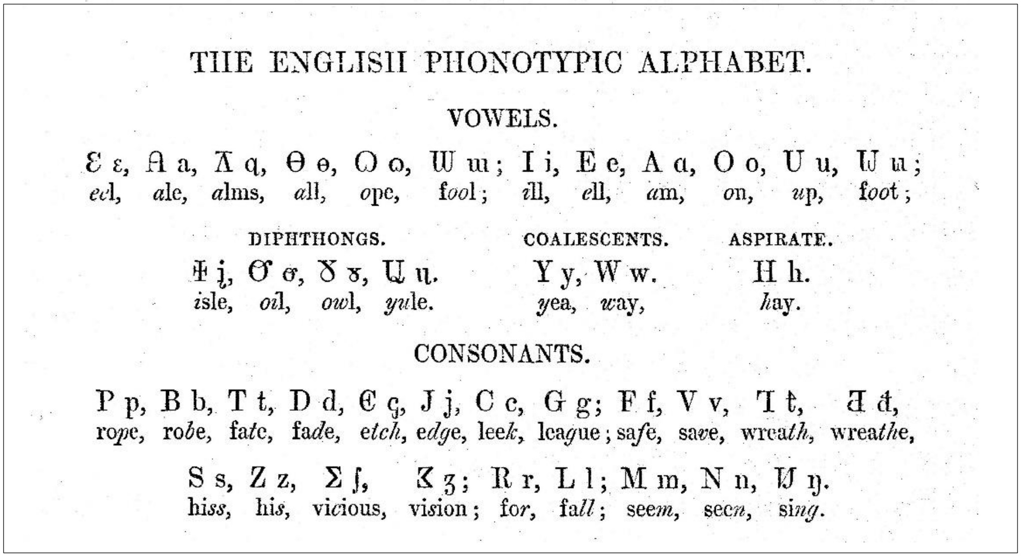
3.7 The 1847 Alphabet

Despite focusing essentially on English, A.J. Ellis (1814-1890) is certainly one of the most important figures in the development of phonetic notation. Particularly famous is his collaboration with Isaac Pitman, who had been attempting to advance a proposal for an English spelling reform, also known as Phonetic reform.

Attempts to reform the English spelling system date back to as early as the beginning of the 13th century with the appearance of The Ormulum of the monk Ormin, which is considered to be the earliest example of spelling reform, and was conceived as an aid for the reading of religious texts (Venezky, 1999). Renewed efforts appeared in England and France in the sixteenth century, with works by Louis Meigret (1550), Thomas Smith (1568), John Hart (1569) and William Bullokar (1580), and followed in the seventeenth century, with Alexander Gill (1619), Charles Butler (1633) or John Wilkins (1668). The main aim was to propose alphabetic systems which would be more representative of the actual pronunciation, as writing was considered to be ‘a mirror for speech' (Venezky, 1999: 214), through the devising of innovative means of notation, mostly based on the Roman alphabet, with the adjunction of a few Greek characters or newly created symbols (Kemp, 1994; Venezky, 1999). In the eighteenth century similar approaches, which were, however, motivated by social issues, continued, and had the scope to reduce class inequalities by promoting a more regular writing system to improve literacy levels. Significant works include the suggestion of new spelling system by Thomas Sheridan (1780) and John Walker (1791) (Kemp, 1994). In the nineteenth century, the spelling reform was strongly related to developments of the phonetic sciences and the requirements of language teaching. Most of the attempts intended to create phonetically founded writing systems, alphabetic or iconic, such as those by Isaac Pitman (1837; 1847) and A. J. Ellis (1847). However, such aims soon proved unfeasible, as it became apparent that both phonetic accuracy and practicality could not be achieved by any orthographical system (Robins, 1997).

In his *Phonography* (previously known as *Stenographic Soundhand*), first published in 1837, Pitman (1813-1897) created a system which employed shorthand notation based on the sound system of English, rather than on its spelling. The work was very successful: it was reprinted 8 times with a series of modifications and improvements. The Phonographic Journal, edited by Pitman, presented some experimental alphabets devised by him, some Roman-based, some based on the phonographic system. However, he later became convinced that a roman-based system would have been more suitable (Kelly, 1981). 'The possibility is, that we shall progress far more by using the old letters, than we should by adopting new ones' (Pitman, 1843 in Kelly, 1981: 253). Ellis, who shared Pitman's interest in spelling reform, learnt Phonography, mastered it after a few weeks, and attempted the devising of phonetic alphabets, but his achievements were nowhere near those of Pitman at around that time (1843). A.J. Ellis started sending Pitman letters introducing himself, and describing his own experimenting on the creation of systems for phonetic notation and his studies on the phonetics of languages. The product of the collaboration between the two was ‘The 1847 Alphabet’ or English Phonotypic Alphabet (Pitman, 1847; Kelly, 1981). Another example of the system is also in another work by Ellis published in 1848 and called *Essentials of Phonetics* written entirely with the Phonotypic Alphabet.

The reform A.J. Ellis and Pitman advocated was never realized, but much of the work carried on by the two influenced Ellis’s subsequent works, and many of the symbols that appeared in the work inspired those that would be later employed to form the alphabet of the International Phonetic Association (Kemp, 1999; Kelly, 1981). An example of the Phonotypic Alphabet is below in Figure 3:



THE ENGLISH PHONOTYPIC ALPHABET.

VOWELS.

Ɛ ε, Ꭿ a, Λ q, Θ ɵ, Ѡ ѡ, Ɯ ɯ; I i, E e, A ɑ, O o, U u, Ɯ ɯ;
*ee*l, *a*le, *a*lms, *a*ll, *o*pe, f*oo*l; *i*ll, *e*ll, *a*m, *o*n, *u*p, f*oo*t;

DIPHTHONGS. COALESCENTS. ASPIRATE.

Ɨ ȷ, Ơ ơ, Ȣ ȣ, Ų ų. Y y, W w. H h.
*i*sle, *oi*l, *ow*l, *yu*le. *y*ea, *w*ay, *h*ay.

CONSONANTS.

P p, B b, T t, D d, Ȼ ç, J j, C c, G g; F f, V v, Ŧ ŧ, Đ đ,
ro*p*e, ro*b*e, fa*t*e, fa*d*e, e*tch*, e*dg*e, lee*k*, lea*g*ue; sa*f*e, sa*v*e, wrea*th*, wrea*th*e,

S s, Z z, Σ ʃ, Ʒ ʒ; R r, L l; M m, N n, Ŋ ŋ.
hi*ss*, hi*s*, vi*c*ious, vi*s*ion; fo*r*, fa*ll*; see*m*, see*n*, si*ng*.

Figure 3: The English Phonotypic Alphabet. (Pitman, 1847: 2)

Ellis’s most famous work, *On Early English Pronunciation* (1869), presented another system of phonetic transcription, called Palaeotype, meant for the transcription of the pronunciation of every language, or at least of all the sounds known until then.[55]

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[55] ‘As now presented, Palaeotype is believed to contain characters for all the sounds considered by Rapp,

It employed 266 letters; these were mostly digraphs or even trigraphs, and were sometimes a combination of italic and roman type, upper and lower case characters, plus 46 diacritics for suprasegmental features. The basis of his system was the Roman Alphabet: ‘In order to write intelligibly on speech sounds, some systematic means of representing them must be adopted […] In order to be generally intelligible, the letters of the Roman Alphabet in their original Latin senses, as nearly as may be, should form the nucleus of the system of symbolization’ (Ellis, 1869: 1). He went on to explain: ‘In order to be convenient to the Printer and Writer, the old types, παλαιοί τύποι, should be used, and no accented letters, few turned, and still fewer mutilated letters should be employed’ (Ellis, 1869: 1). However, he also specified that his system had not been created for general use, but only for scientific purposes, meant as a way to harmonize all previous systems. Some characteristics of the system are below:

- the vowels had to be pronounced as they are in Italian, and <ü> and <ö> as the German /y/ and /œ/. These could be modified by the use of the italic type;
- <h j w> were always diacritics. However, their uppercase counterpart did represent sounds (the ones those symbols would represent in the IPA). Interestingly, <q> represented the sound /ŋ/;
- long vowels were represented by a reduplication of the vowel character (e.g. <aa> for a long /a/ sound);
- ulterior articulatory details were indicated via the use of a few alphabetic, analphabetic or numeric symbols. For example, <†> indicated a sound to be articulated by protruding the tongue, <0> signalled the distension or widening of the pharynx, <w> the rounding of the lips (Ellis, 1869).

Lepsius, Brücke, Max Müller, Haldeman, Merkel and Melville Bell, and hence to be the most complete series of phonetic symbols which has been published’ (Ellis, 1869: 1).

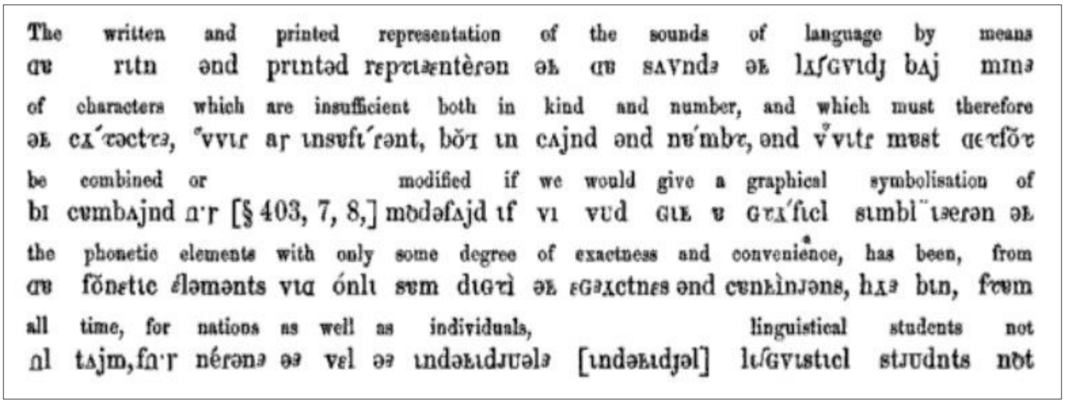
A key explaining how to use it and therefore indicating the pronunciation of each set of symbols accompanies the system. As Ellis stated in the Introduction of *On Early English Pronunciation*, the system was not meant to be used for every day notation, as it was too complicated. He devised a simplified version of the Palaeotype, which he called Glossic, and that employed Glossotype. The aim of Glossotype was to be 'useful to all who may occasionally wish to indicate pronunciation with some degree of exactness, but do not care to enter upon general phonetic investigation' (Ellis, 1869: 13) His Glossic system was borne out of a different purpose. It sought to aid the spelling reform of English via the use of a transcription system, using characters based on the symbols of English orthography. His views were considered too drastic, and his system for a spelling reform was never adopted, and neither was the Palaeotype system (Kemp, 1994; Wellisch, 1978). According to Sweet (1877) Glossic '[could not] be regarded as a consistently phonetic system' (Sweet, 1877: 204).

3.8 Spelling reform in North America

The interest in a spelling reform for English was also present among American intellectuals, such as Benjamin Franklin, Noah Webster, William Thornton, and President Theodore Roosevelt, to name but a few. However, it was from the last quarter of the nineteenth century that the first associations began to be founded to further aid the purpose. In 1876, the International Convention for the Amendment of English Orthography successively developed into the foundation of the Spelling Reform Association. In 1906, Andrew Carnegie founded the Simplified Spelling Board. The American Philological Association, in collaboration with the Philological Society of England, was also an advocate of the simplification of the spelling of 300 words, some of which were represented by two or more alternative spellings. Some of the main principles that inspired the various movements could have been shared by the public, and comprised alterations such as the dropping of <e> after <dg>, promoted the use of final <-er-> instead of <-re> as in ‘centre/center’, or the substitution of the past tense ending <-ed> with <t> after voiceless stops, for example ‘dipt’ instead of ‘dipped’. The hoped for reforms, however, never took place (Venezky, 1999).

3.9 Samuel Haldeman

In 1858, Sir Walter C. Trevelyan, the President of the Phonetic Society of Great Britain, instituted a prize to be awarded to the best proposal that would contain an analysis of the sounds of the English language, and an alphabetic system of notation (Haldeman, 1860; Kemp, 1994). It was also suggested that the new system would have to include ‘as few new types as possible’ (Haldeman, 1860: 6). The Commission awarded the Prize to the essay *Analytic Orthography: An Investigation of the Sounds of the Voice and their Alphabetic Notation; Including the Mechanisms of Speech, and its Bearing Upon Etymology* (1860) by Samuel Haldeman, a Professor of Comparative Philology at the University of Pennsylvania (Haldeman, 1860; Kemp 1994; Kemp, 1981), which was based on Haldeman’s earlier Phonographic Alphabet. Haldeman (1812-1880) was acquainted with the works of other notable philologists and phoneticians, such as William Jones, Volney, Lepsius, Ellis, Pitman, Müller, etc.. Like his predecessors, his notation too was based on the Roman alphabet, it followed the one sound/ one symbol principle, with the exception of a few digraphs, it had a phonological basis, and the letters employed were assigned the value they had in Latin (Haldeman, 1860). Haldeman welcomed the introduction of newly created or modified symbols for those sounds that could not be represented unambiguously by the Roman Alphabet: he considered Müller’s choice to include only Latin characters ‘too stringent’ (Haldeman: 1860: 21). Some of these modifications included the turning of the letters or in some cases their truncation, that is letters missing some of their strokes (e.g. an <E> missing half of the top stroke). Another device included employing characters in different widths so to indicate a difference in duration (Kemp, 1981). As Kemp (1981) notes, these modifications did not serve the purpose satisfactorily, and Haldeman’s alphabet was never adopted. An example of the system is below in Figure 4:



The written and printed representation of the sounds of language by means
of characters which are insufficient both in kind and number, and which must therefore
be combined or modified if we would give a graphical symbolisation of
the phonetic elements with only some degree of exactness and convenience, has been, from
all time, for nations as well as individuals, linguistical students not

Figure 4: An example of Haldeman’s system in use (Haldeman, 1860: 127)

3.10 Missionary contributions

As has been mentioned a few times in the course of this discussion, the need for a standardised transcription system was shared not only by intellectuals and academics, but also by church missionaries, and this issue was particularly relevant for those languages that did not possess a writing system of their own. By the nineteenth century, the geographical areas of interest to missionaries were obviously quite vast and so the need to conciliate a variety of systems applied to a large variety of languages was strongly felt by many. Henry Venn, an Anglican clergyman, stated that the lack of standardization had ‘retarded the formation of primers and educational works, and the translation of the Holy Scriptures’ (Venn, 1848 in Lepsius 1863: 40). In his *Rules for reducing unwritten languages to alphabetical writing in Roman characters, with reference especially to the languages spoken in Africa* (1848), produced for the Church Missionary Society of which he became honorary secretary, Venn presented a Roman-based system which adhered to the one sound/ one symbol principle and employed a few diacritics and digraphs (Kemp, 1994; Lepsius, 1863). The African situation was particularly complex, as the discovery of new sounds called for the devising of adequate symbols, and many works were produced towards this end on behalf of different missionary organisations. This state of affairs prompted the Committee of Port Natal to address fellow missionaries in Africa to promote the pursuit of a standard system of transcription. An aid to this appeal came in the form of a piece submitted in 1852 (but published in 1853) for a conference instituted by the American Oriental Society, by Reverend Lewis Grout (1853), who advanced his proposals for the transcription of the Zulu language in *An Essay on the Phonology and Orthography of the Zulu and kindred dialects in Southern Africa* (Lepsius, 1863; Kemp, 1994). Lepsius (1863) praised the attention to detail and the phonetic knowledge demonstrated in the work, especially with regards to clicks, but noted the inadequacy of the phonological theory and the scarcity of languages treated, although this may have been intentional (Lepsius, 1863).

3.11 Lepsius, Müller and the Alphabetical Conference

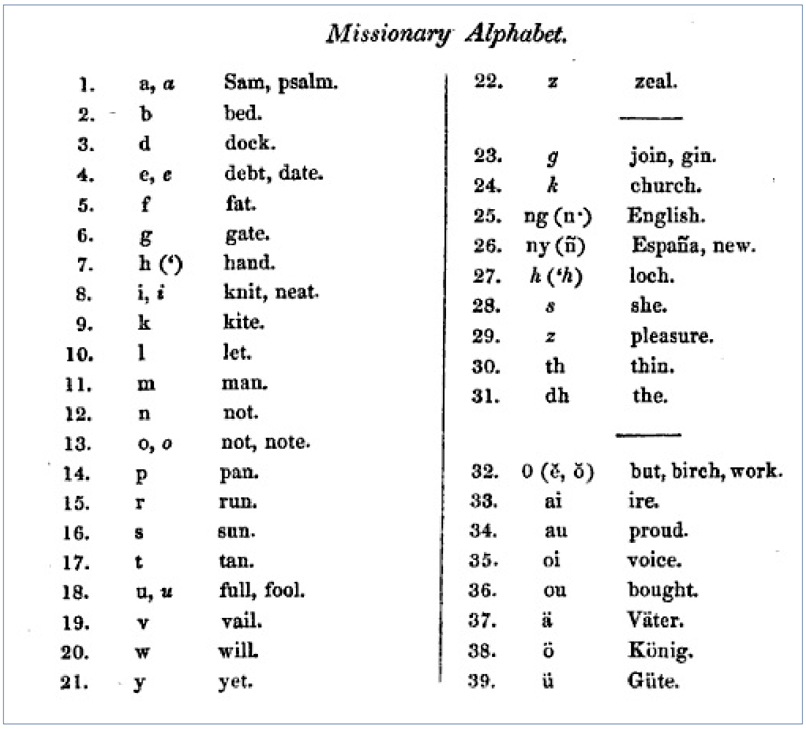
In 1852, as he himself narrates, the egyptologist and linguist Karl Richard Lepsius (1810-1884) was invited by Henry Venn of the Church Missionary Society to revise an alphabet he had previously devised so that it would comply with that described in Venn's *Rules* (1848), becoming suitable for the Society to adopt; however Lepsius, who had other commitments at the time, only provided a basic illustration of his alphabet with no further notes or explanations on its appropriate use (Lepsius, 1863; Kemp, 1994). Later that year, Reverend Kölle contacted him and prompted him to finally put his ideas for a standard alphabet into print. In 1853, he presented the Academy of Berlin with an essay in which he illustrated his methodology and ideas to solve the question, and after receiving the approval of the Committee created to deliberate on the matter, the Academy allowed for the necessary characters to be cut and cast. In 1854, Carl Bunsen, the Prussian ambassador in London, who inaugurated the Alphabetical Conference in order to pursue once again the creation of standard system for transcription, also showed interest in the subject. Many missionary societies took part, such as the above-mentioned Church Missionary Society, the Wesleyan Missionary Society, and the Baptist Missionary Society, but other kinds of associations, like the Asiatic and Ethnological Societies, and many scholars, including Max Müller, Charles Trevelyan, even Lepsius himself, also participated (Lepsius, 1863; Kemp, 1994). The aims and developing phases of the Alphabetical Conferences were somewhat similar to those of the Volney Prize. Firstly, guiding principles for the formation of new alphabets were agreed upon among those submitted in the participants' proposals, and successively, the evaluation of the suggested alphabets took place.

The Commission approved of four motions:

- the system adopted would have to have a physiological foundation, that is, based on scientifically valid phonetic and phonological theories and appropriate knowledge of sound production;
- the Roman alphabet would be used, in order to ease legibility and printing, and where needed it would have to be supplemented by the addition of suitable and consistently applied symbols;
- only sounds representative of human speech would be included;
- the adopted system would become the standard and the merit of all following attempts would have to be measured against it (Kemp, 1994).

Other than Lepsius, Trevelyan and Müller also presented their plans to the commission:

- Trevelyan: suggested the adoption of William Jones’s system, due to its success and widespread usage in India and due to the proved superiority of this system compared to that of Gilchrist; however the system needed improvement as it lacked a physiological theory behind it (Lepsius, 1863);
- Müller: in his *Proposals for a Missionary Alphabet* (1854) proposed a system where the distinction between ‘European sounds’ (i.e. those languages using the Roman alphabet) and foreign ones would be marked by using normal types for the former and italics for the latter. In his time Jones was opposed to this solution, already adopted by Gilchrist, but it was also evident that the simple opposition in the Roman-based alphabet between normal and italic type would not be sufficient to express all the phonemes of non-European languages (see Figure 5 below) (Müller, 1854; Lepsius, 1863);



Missionary Alphabet.

1.	a, *a*	Sam, psalm.
2.	b	bed.
3.	d	dock.
4.	e, *e*	debt, date.
5.	f	fat.
6.	g	gate.
7.	h (‘)	hand.
8.	i, *i*	knit, neat.
9.	k	kite.
10.	l	let.
11.	m	man.
12.	n	not.
13.	o, *o*	not, note.
14.	p	pan.
15.	r	run.
16.	s	sun.
17.	t	tan.
18.	u, *u*	full, fool.
19.	v	vail.
20.	w	will.
21.	y	yet.
22.	z	zeal.
23.	*g*	join, gin.
24.	*k*	church.
25.	ng (n·)	English.
26.	ny (ñ)	España, new.
27.	*h* (‘*h*)	loch.
28.	*s*	she.
29.	*z*	pleasure.
30.	th	thin.
31.	dh	the.
32.	0 (ĕ, ŏ)	but, birch, work.
33.	ai	ire.
34.	au	proud.
35.	oi	voice.
36.	ou	bought.
37.	ä	Väter.
38.	ö	König.
39.	ü	Güte.

Figure 5: Müller’s Missionary Alphabet. (Müller, 1854: 46)

- Lepsius: his system proposed for the 1854 conference was what would be published later in 1854 in Germany under the name of *Das allgemeine linguistische Alphabet* and in 1855 in English with the title of *Standard Alphabet for reducing unwritten languages and foreign graphic systems to a uniform orthography in European letters* (he also published a German version of it the same year), successively enlarged in 1863. The 1855 version, which included 54 languages, was largely considered to be a success, and began to be employed by philologists and even by the cartographers of the Austrian Empire. The Church Missionary Society was favourably impressed, and invited Lepsius to expand his work, a request he satisfied and which resulted in the 1863 version of the *Standard Alphabet,* which now covered an impressive 117 languages, both with a writing systems and not. The system was very elaborate, and Lepsius had based his alphabet on that physiological basis desired by the members of the commission; however, his alphabet was decidedly too complicated for general use, mainly due to the particularly high amount of diacritics employed; Sweet calculated a total of 280 different symbols (see Figure 6 below) (Lepsius, 1863; Wellisch, 1978; Kemp, 1994)

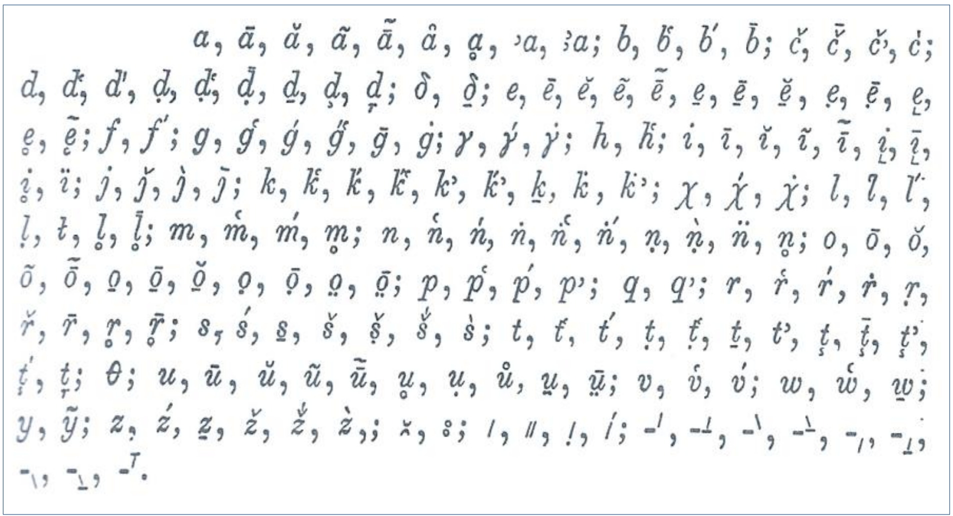


Figure 6: Lepsius's alphabet (Lepsius, 1863:18)

Lepsius recognised this potential difficulty for new learners and commented that ‘many diacritical marks [could] be dispensed with, or [would] gradually drop off of themselves’ (Lepsius, 1863: xii), but did not indicate which ones. The issues with his system were also, as it has been for many of the models analysed, of a practical nature. The printing of the alphabet required numerous characters to be newly cut and could only be found in Berlin, a factor that clearly impeded quick and wide spread. Moreover, the higher the number of symbols to be reproduced, the higher the risk of mistakes (Lepsius, 1863; Wellisch, 1978; Kemp, 1994). Nonetheless, the Church Missionary Society decided to adopt it, and the system had some success in African missions, and was supported by the Berlin Academy. But despite this, and for the reasons mentioned, it never obtained the success it expected (Wellisch, 1978; Kemp, 1994). Wellisch (1978) also provides a political explanation for the failure of Lepsius’s proposed plan, especially in Asia. Feelings of nationalism became particularly strong in the half of the nineteenth century, and the Asian population gained awareness of the significance and value of their own scripts, therefore rejecting attempts aimed at converting their writing systems into the Roman alphabet, which were interpreted by the natives as a delegitimisation of their culture.

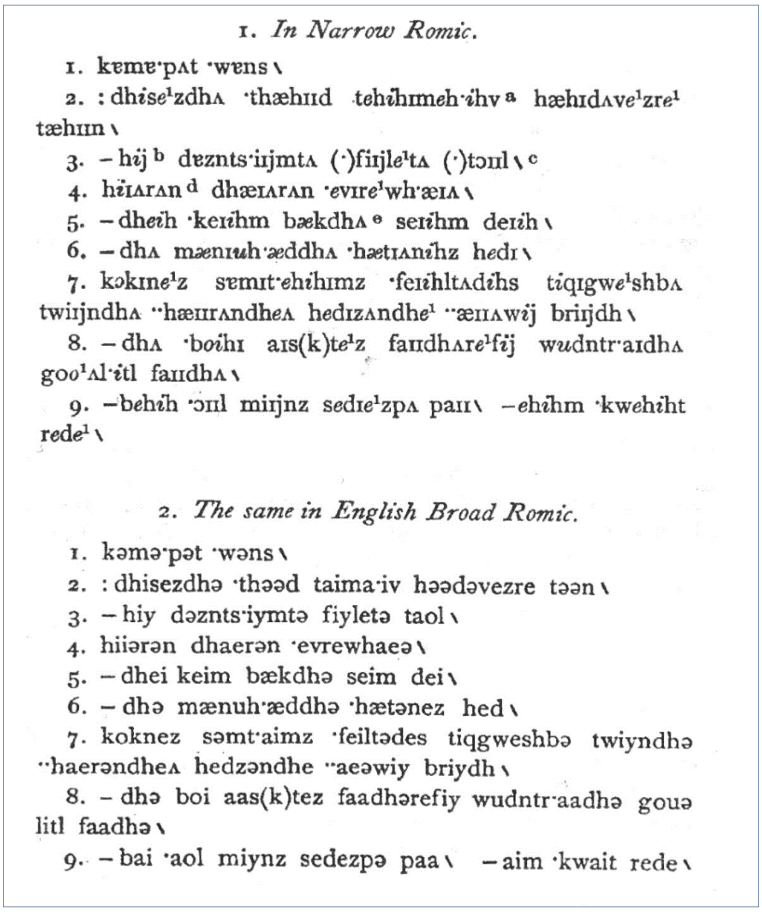
3.12 Bell’s Visible Speech

Despite not being an alphabetic system of notation, the kind that has been the main focus of this study, *Visible Speech: The Science of Universal Alphabetics* (1867) by Alexander Melville Bell (1819-1905) cannot be excluded from this discussion for the great influence this work had on the development of Phonetics, which can be summed up by Sweet’s words: ‘It is no exaggeration to say that Bell has in this work done more for phonetics than all his predecessors put together’ (Sweet: 1877: vii). Bell’s system was organic, or iconic, as the symbols represented the movements or state of the vocal organs involved in the production of a particular sound, but it was generally considered to be an improvement from other iconic systems, as the symbols were better designed (Sweet, 1877). According to Bell (1867), the uses of the system could be multiple: teaching pronunciation to the illiterate, teaching the deaf and dumb to speak, preventing and solving speech impediments, conveying the exact pronunciation of sounds of foreign languages, or the standard pronunciation of one’s own mother tongue. Sweet (1877) praised Bell’s analysis of vowels, which was almost completely original, and the quality and accuracy of Bell’s phonetic description, although he recognized it was not perfect, and deemed the notation to be practical for both printing and handwriting. The notation, as was observed, intended to be a representation of the movements involved in speech production, and the turning or the modification of a basic <C> shape illustrated each consonant. The orientation of the curve, and the presence or lack of a gap, indicated the position of the active articulator, the place, and the manner of articulation. For example, <ᴄ>, being a fricative because of the gap, signaled a sound articulated by the back of the tongue constricting the air stream at the velum, /x/, whereas <ᴗ> symbolized a sound produced by the tongue tip constricting the air stream at ‘the upper gum’ (Bell, 1867: 52) or a dental articulation, /θ/. Each symbol had various modifiers: for example, a stroke closing the gap indicated a plosive consonant, as in <ʊ> /t/. Other modifiers included for example, symbols for nasality, advance or retracted articulation, etc.. As far as vowels characters were concerned, they originated from the original shape for voice, <I>, modified by a ‘definer, whose position depended on where in the vocal tract the vowel sound was produced’ (Bell; 1867; Sweet, 1877). Bell’s notation system was fairly accurate from a phonetic point of view, so that it could note not only language sounds and dialectal differences, but, as Sweet (1877) claimed, it could also be used for all possible speech sounds, and indeed in a table Bell included notation for sounds denoting chuckling, hissing, gargling, etc.. Sweet was greatly inspired by Bell’s work, which influenced much of his following studies, and considered Bell to be one of his biggest teachers (Morpurgo Davies, 2003). However, Sweet (1877) recognized the bigger desirability of the Roman alphabet, more flexible and easier to modify at the appearance of phonetic discoveries, than that of such a fixed system. For this reason, and for the fact that so many new characters would have needed to be cut cast and, more importantly learned, Bell's alphabet was neither adopted nor did it achieve public success (Kemp, 1994).

3.13 Henry Sweet's Romic

Henry Sweet (1845-1912) was at the beginning of the century the most prominent figure in British phonetics, and his theories were greatly influenced by the works of Alexander John Ellis and Isaac Pitman and their 1847 Alphabet, and by Alexander Melville Bell (Kemp, 1981; Morpurgo Davies, 2003). In his *Handbook of Phonetics* (1877), Sweet dealt with Alexander Melville Bell's *Visible Speech: The Science of Universal Alphabetics* (1867) in great depth, and adopted most of its descriptive terminology and analytical framework, but at the same time introduced a new system called Romic 'because based on the original Roman value of the letters' (Sweet; 1877: 102), which was founded an Ellis's Paleotpye (Sweet, 1880). However, despite having been deeply inspired by Bell's *Visible Speech,* Kelly and Local (1984) noted how Sweet's work was far more systematic and consistent, especially with regards to articulatory categorisation, and even more accurate in terms of phonetic analysis and description, while Collins and Mees (1999) observe how it 'provided a methodological framework of description which had been previously lacking' (Collins & Mees, 1999: 43) and how Sweet 'awakened the minds of many people – in Britain, continental Europe and elsewhere – to the very existence of phonetics' (Collins & Mees, 1999: 43). As those of

Ellis and Pitman before it, the system was inspired by the urge for a spelling reform of English, and it was Roman-based, like Ellis's Palaeotype or the 1847 Alphabet, as Sweet believed than the Roman alphabet would be more suitable to accommodate the eventual changes in phonetic theory. It was divided into 'broad Romic', that is considered to have been the basis for the creation of the IPA (Collins & Mees, 1999; MacMahon, 1996; Morpurgo Davies, 2003) and 'narrow Romic': the former was meant for only a practical notation, aimed at noting only the contrastive distinctions, whereas the latter was a more precise type of notation which included a higher number of symbols for vowels, as narrow Romic noted phonemic nuances more accurately, and diacritics. This distinction can be considered an early formulation of phonemic theory that was later developed by Daniel Jones (Jones, 1960; Collins & Mees, 1999). A comparison of the two can be observed below in Figure 7:



1. *In Narrow Romic.*

1. kɐmɐ·pʌt ·wɐns \
2. : dh*i*se^{1}zdhʌ ·thæhɪɪd teh*i*hɪmeh·*i*hv [a] hæhɪdʌve^{1}zre^1 tæhɪɪn \
3. – h*i*j [b] dɐznts·ɪjmtʌ (·)fɪjle^{1}tʌ (·)tɔɪl \ [c]
4. h*ï*ɪʌrʌn [d] dhæɪʌrʌn ·*e*vɪre^{1}wh·æɪʌ \
5. – dhe*i*h ·keɪ*i*hm bækdhʌ [e] seɪ*i*hm deɪ*i*h \
6. – dhʌ mænɪ*u*h·æddhʌ ·hætɪʌn*i*hz hedɪ \
7. kɔkɪne^{1}z sɐmɪt·*e*h*i*hɪmz ·feɪ*i*hltʌd*i*hs t*i*qɪgwe^{1}shbʌ twɪjndhʌ ··hæɪɪrʌndheʌ hedɪzʌndhe^1 ··æɪɪʌw*i*j brɪjdh \
8. – dhʌ ·bo*i*hɪ aɪs(k)te^{1}z faɪɪdhʌre^{1}f*i*j w*u*dntr·aɪdhʌ goo^{1}ʌl·*i*tl faɪɪdhʌ \
9. – beh*i*h ·ɔɪl mɪɪjnz sedɪe^{1}zpʌ paɪɪ \ – *e*h*i*hm ·kweh*i*ht rede^1 \

2. *The same in English Broad Romic.*

1. kəmə·pət ·wəns \
2. : dhisezdhə ·thəəd taima·iv həədəvezre təən \
3. – hiy dəznts·iymtə fiyletə taol \
4. hiiərən dhaerən ·evrewhaeə \
5. – dhei keim bækdhə seim dei \
6. – dhə mænuh·æddhə ·hætənez hed \
7. koknez səmt·aimz ·feiltədes tiqgweshbə twiyndhə ··haerəndheʌ hedzəndhe ··aeəwiy briydh \
8. – dhə boi aas(k)tez faadhərefiy wudntr·aadhə gouə litl faadhə \
9. – bai ·aol miynz sedezpə paa \ – aim ·kwait rede \

Figure 7: Broad Romic and Narrow Romic compared (Collins & Mees, 1999: 44)

Sweet effectively described the issues involved in the transcription of sounds and in the devising of a notation system, and stated that ‘the radical defects of the Roman alphabet are so incurable that any extension of it must necessarily be a very unsatisfactory compromise’ (Sweet, 1880: 180). Sweet observed that adding new letters and diacritics, by turning existing characters and by employing italics and capital letters and digraphs, could rectify these defects. However, Sweet observed how the addition of new characters and diacritics had been the most popular solution, but noted the impracticality and expenses of this methodology, although deeming their occasional use a necessary and practical compromise. Similarly, he judged the use of capitals and italics to be problematic for the same reasons. Instead, Sweet was favourable to the turning of letters and, to a lesser extent, to the employment of digraphs, as it meant that the characters that needed modification were readily available. Finally, Sweet concluded that modifications of the Roman alphabet were of two main kinds, that is, those that required the cutting of new types, and those that made use of already available ones, and suggested that future notation systems should fall into the second category (Sweet, 1880). Like his predecessors, Sweet was a follower of the idea that each sound had to be represented by a distinct symbol, and he recognised the merits of the Roman alphabet in terms of legibility and practicality (Sweet, 1877). Many of the symbols employed by Sweet would later reappear in the International Phonetic Alphabet, such as, for instance the symbol for the vowel sound in ‘fall’, /ɔ/, or /ə/, although, some of the digraphs in *Handbook of Phonetics*, for example <sh> and <dh> were later modified in a revised version of Broad Romic in *Sound Notation* (1880-1) and later in *A Primer of Phonetics* (1890), and were substituted with the symbols that are now used in the IPA, that is <ʃ> and <ð> (Sweet, 1877: 1880-1; 1890; Kemp, 1981; MacMahon, 1996).

It is also interesting to note that Sweet also proposed an iconic system, the Organic Alphabet, developed on the base of Bell’s *Visible Speech*, in *A Primer of Phonetics*

(1890). Sweet intended it as a supplement of his Romic notation, and retained most of the terminology, the features and the symbols already adopted by Bell (Sweet, 1890). However, the Organic Alphabet shared the same fate of all the iconic alphabets before it, and was thus never adopted for use (Kemp, 1994).

3.14. Towards the International Phonetic Alphabet

3.14.1 The International Phonetic Association and the first alphabets

Following the efforts of a group of French teachers of English who employed phonetic notation for the practical teaching of pronunciation of foreign languages in schools, Paul Passy founded Dhi Fonètik Tîtcerz' Asóciécon, which originated from the Phonetic Association of Teachers of English (L'Association Phonétique des Professeurs d'Anglais) in 1886 (Jones, 1935; International Phonetic Association; 1999). The aim of the newly founded Association, as Daniel Jones (1935), who would join the Association in 1905 explained, was to promote and spread this approach to language teaching to wider audiences. The Association had its own publication, edited by Passy, *Dhi Fonètik Tîtcer*[56], which included examples of phonetic transcription put forward by Passy and by other writers. However, at the time of the foundation there was no agreement within the Association on the methodological principles to be applied and followed, and as a result, each contributor adopted a system of his own. Jones (1935) noted that the alphabet used by Passy was fairly different from what later became the International Phonetic Alphabet, at least in its earliest versions. For example, this version employed <dh> for /ð/, <c> for /ʃ/ in English but <x> for /ʃ/ in German, <ɴ> for /ŋ/, or <h> for the length marker < ː > (Jones, 1935). This state of affairs, especially with regards to the lack of uniformity among the writers, prompted Otto Jespersen to call for the creation of an international standard alphabet for *Dhi Fonètik Tîtcer.* After an exchange of correspondence, it was decided that Passy would be the most suitable figure for the purpose. As has been described in the course of this piece with regards to other historical periods, the members of the Association, which also included Henry Sweet and Wilhelm Viëtor, discussed the feasibility of the project, and after an epistolary debate, in 1888 Passy announced that members were favourable to the creation of 'one alphabet for all languages' (Jones, 1935: 45); later that year it was communicated that there was consensus on an international phonetic notation system based on the revised 1847 alphabet of Ellis and Pitman and on Sweet's Broad Romic (Jones, 1935; Kemp, 1994; International Phonetic Association; 1999; Collins&Mees, 1999) (see section 3.14.3 for a description of the alphabet). In 1889, the members of the Association decided to adopt French as the official language, to change the name of the Association to L'Association Phonétique des Professeurs de Langues Vivantes, and the title of the journal to *Le Maître Phonétique*[57]. In 1897, the name of the Association was modified one last time into its current name, L'Association Phonétique Internationale or International Phonetic Association (International Phonetic Association, 1949; 1999). Although the initial focus was on the teaching of English, the Association quickly began to deal with an ever increasing number of languages, and expanded its attention from the practical application of phonetics for language teaching to an interest in phonetic issues in general (Jones & Dahl, 1944; Pullum & Ladusaw, 1986; International Phonetic Association, 1999).

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[56] The title was successively transcribed as *dhə fɔnetik tîtcər* from May 1887, as *də fɔnetik tîtcər* from September 1887, and as *də fonetik tîtcər* from August 1888 (International Phonetic Association, 1949).

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[57] In 1971 the *Journal of the International Phonetic Association* substituted *Le Maître Phonétique*, English was adopted as the official language, and regular orthography was employed in place of phonetic notation (International Phonetic Association, 1999).

3.14.2 The International Phonetic Alphabet: the principles

In August 1888, after the Association met Jespersen’s call for an international alphabet, a first version of the Alphabet was presented in *də fonetik tîtcər* alongside a list of principles that had been followed for its creation. These were as below (the following is reproduced as in International Phonetic Association, 1949: endsheet):

> (1) There should be a separate letter for each distinctive sound; that is, for each sound which, being used instead of another, in the same language, can change the meaning of a word.
>
> (2) When any sound is found in several languages, the same sign should be used in all. This applies also to very similar shades of sound.
>
> (3) The alphabet should consist as much as possible of the ordinary letters of the roman alphabet, as few new letters as possible being used.
>
> (4) In assigning values to the roman letters, international usage should decide.
>
> (5) The new letters should be suggestive of the sound they represent, by their resemblance to their old ones.
>
> (6) Diacritic marks should be avoided, being trying for the eyes and troublesome to write.

It is important to note that ‘(1) [was] an early statement of what we know call the ‘phonemic’ principle of writing’ (International Phonetic Association, 1949: endsheet). Since 1888 the Principles have been reprinted in various different languages on behalf of the Association[58]. From 1911, these were also accompanied by a demonstration on the use of the phonetic alphabet via the phonetic transcription of the fable of *The North Wind*

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[58] For example, French in 1900, German in 1928, Italian in 1933, Spanish in 1944 (International Phonetic Association, 1999)

and the Sun (International Phonetic Association, 1999).

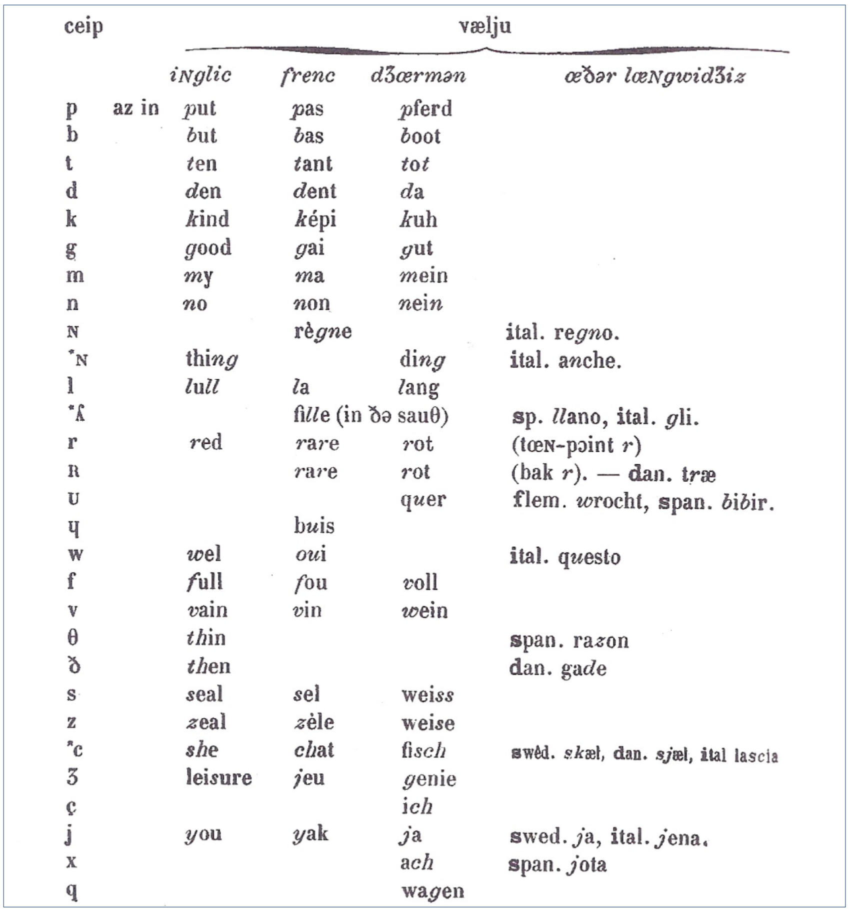
The *Principles* were later revised mainly by Daniel Jones with the collaboration of Passy and republished in 1912. This version included a brief history of the Association, a higher number of transcribed languages, a more detailed explanation of the principles, especially with regards to narrow and broad transcription, and guidance on the transcription of not previously transcribed languages (Passy & Jones, 1912; Collins & Mees, 1999). Although with some variations over the years [59], for example, with regards to diacritics, these principles determined the shaping of the following versions of the alphabet and contributed to the creation of what is now the IPA.

3.14.3 The development of the Alphabet

As it has been described, an early version of the IPA, created by Passy and based on the 1847 Alphabet and by Sweet's Broad Romic, appeared in 1888 in *də fonetik tîtcər.* The alphabet was Roman-based, a choice motivated by pedagogical and typographical reasons and by the aim to make it suitable for international application. It was presented in the form of a list, where an explanation of their values in English, French, German, and occasionally other languages accompanied each symbol. There was not yet the customary division in place and manner of articulation, and the alphabet was not yet in its common chart form. This alphabet included most of the symbols that are now present in the current version of the International Phonetic Alphabet, but it featured some differences, such as, for example, the use of <ɴ> for /ɳ/, <U> for /β/, <c> for both /ʃ/ and /ʧ/, (Jones, 1935; Passy, 1888). Below in Figures 8 and 9 is the alphabet:

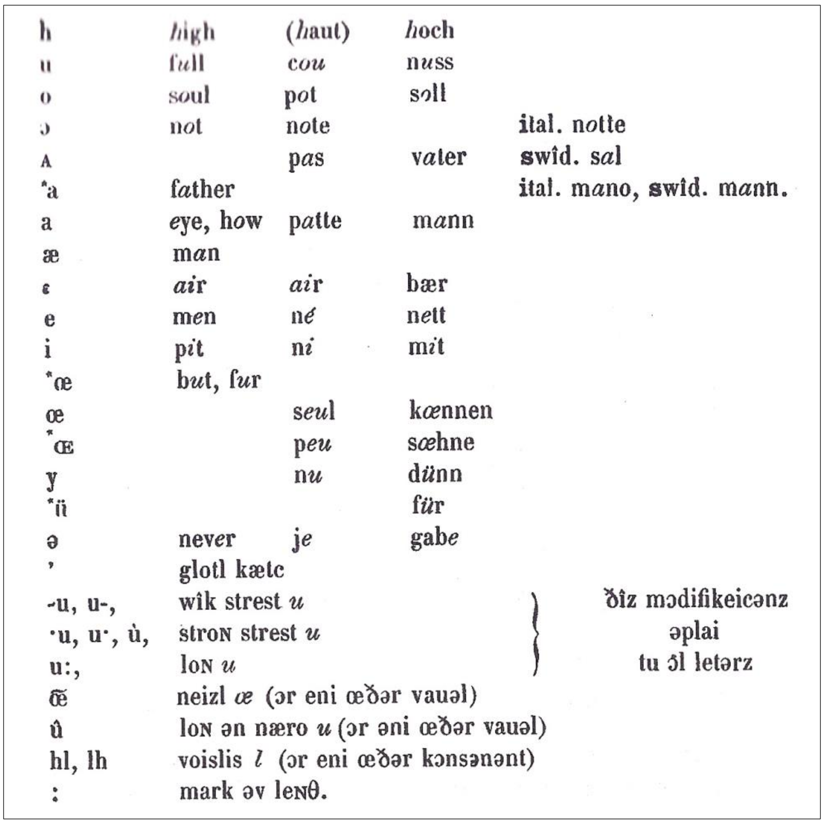
---

[59] 'In regard to (5) it is now considered that letters should have unmistakable forms, and be as unlike as each other as possible' (International Phonetic Association, 1949: endsheet).



ceip		vælju			
		iɴglic	*frenc*	*dʒœrmən*	*œðər læɴgwidʒiz*
p	az in	*p*ut	*p*as	*p*ferd	
b		*b*ut	*b*as	*b*oot	
t		*t*en	*t*ant	*t*o*t*	
d		*d*en	*d*ent	*d*a	
k		*k*ind	*k*épi	*k*uh	
g		*g*ood	*g*ai	*g*ut	
m		*m*y	*m*a	*m*ein	
n		*n*o	*n*o*n*	*n*ei*n*	
ɴ			rè*gn*e		ital. re*gn*o.
*ɴ		thi*ng*		di*ng*	ital. a*n*che.
l		*l*u*ll*	*l*a	*l*ang	
*ʎ			fi*ll*e (in ðə sauθ)		sp. *ll*ano, ital. *gl*i.
r		*r*ed	*r*a*r*e	*r*ot	(tœɴ-pɔint *r*)
ʀ			*r*a*r*e	*r*ot	(bak *r*). — dan. t*r*æ
ᴜ				q*u*er	flem. *w*rocht, span. *b*i*b*ir.
ɥ			b*u*is		
w		*w*el	*ou*i		ital. q*u*esto
f		*f*ull	*f*ou	*v*oll	
v		*v*ain	*v*in	*w*ein	
θ		*th*in			span. ra*z*on
ð		*th*en			dan. ga*d*e
s		*s*eal	*s*el	wei*ss*	
z		*z*eal	*z*èle	wei*s*e	
*c		*sh*e	*ch*at	fi*sch*	swêd. *sk*æl, dan. *sj*æl, ital la*sc*ia
ʒ		lei*s*ure	*j*eu	*g*enie	
ç				i*ch*	
j		*y*ou	*y*ak	*j*a	swed. *j*a, ital. *j*ena.
x				a*ch*	span. *j*ota
q				wa*g*en	

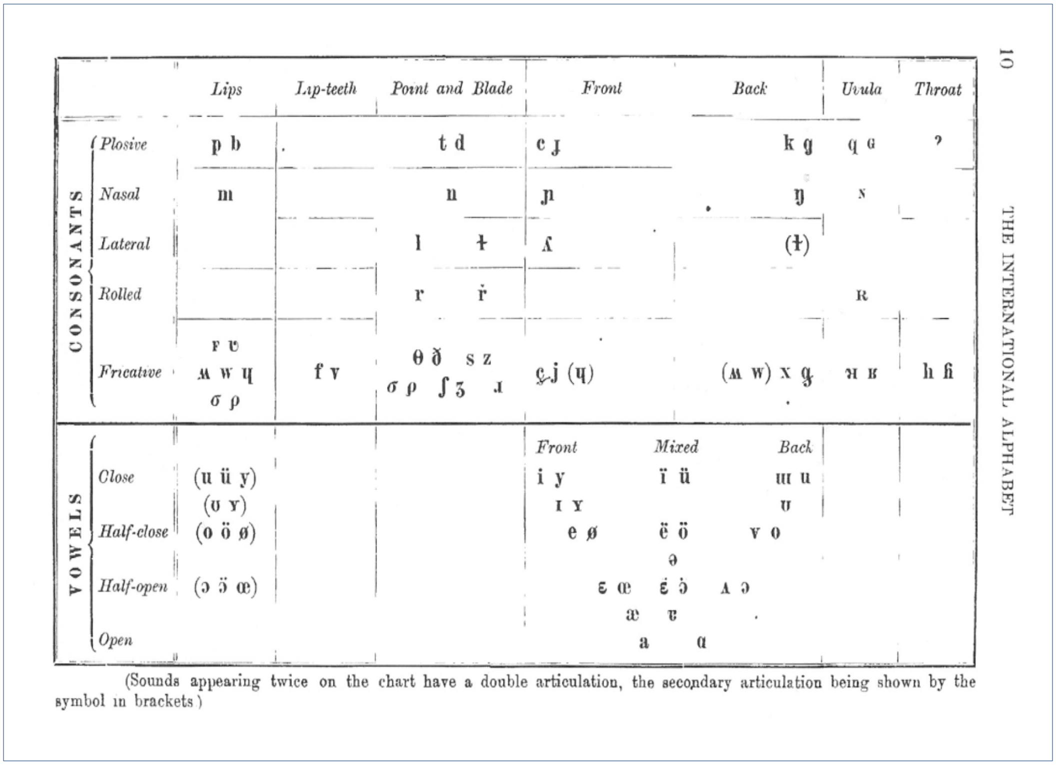
Figure 8: The 1888 Alphabet. (MacMahon, 1996: 833)



h	*h*igh	(*h*aut)	*h*och	
u	f*u*ll	c*ou*	n*u*ss	
o	s*o*ul	p*o*t	s*ɔ*ll	
ɔ	n*o*t	n*o*te		ital. n*o*tte
ᴀ		p*a*s	v*a*ter	swîd. s*a*l
*a	f*a*ther			ital. m*a*no, swîd. m*a*nn.
a	*e*ye, h*o*w	p*a*tte	m*a*nn	
æ	m*a*n			
ɛ	*ai*r	*ai*r	b*æ*r	
e	m*e*n	n*é*	n*e*tt	
i	p*i*t	n*i*	m*i*t	
*œ	b*u*t, f*u*r			
œ		s*eu*l	k*œ*nnen	
*ɶ		p*eu*	s*œ*hne	
y		n*u*	d*ü*nn	
*ü			f*ü*r	
ə	nev*e*r	j*e*	gab*e*	
’	glotl kætc			
-u, u-,	wîk strest *u*			ðîz mɔdifikeicənz
·u, u·, ù,	stroɴ strest *u*			əplai
u:,	loɴ *u*			tu ɔ̄l letərz
œ̃	neizl *œ* (ɔr eni œðər vauəl)			
û	loɴ ən næro *u* (ɔr əni œðər vauəl)			
hl, lh	voislis *l* (ɔr eni œðər kɔnsənənt)			
:	mark əv leɴθ.			

Figure 9: The 1888 Alphabet. (MacMahon, 1996: 834)

Passy (1888) noted that some symbols were only temporary, a sign that the members of the Association felt it was not yet satisfactory, and started modifying it from 1889 onwards. The successive changes to the alphabet mostly included different choices for symbols, the introduction of new symbols for newly analysed languages, the creation of diacritics for narrow transcription, or the organisation of the symbols in different articulatory categories. In later versions, the alphabet was expanded with the inclusion of other characters, only employed as long as they could be made to harmonise with the existing Roman characters for typographical motivations. For example, <β> was preferred to <*β*>, or <θ> over <ϑ>. The Association recognised for later developments of the IPA that at least some diacritics were necessary, and restricted their use for the notation of suprasegmental features, for allophonic distinction, when it avoided the creation of new symbols, as is the case for <~> denoting nasalised vowel, or for narrow transcription. The symbols were given the values they had in the majority of the languages which had a Roman-based writing system, and thus the Association admitted that some international readers would have found some of the symbols confusing; the vowels had Italian values (Passy & Jones, 1912; International Phonetic Association, 1944). Later versions of the IPA were presented in the form of a chart that indicated the places of articulation horizontally at the top of the table, and the manner of articulation vertically on the left side. Some of the names of the categories were quite different in the earlier versions from what they are now. For example, the labial place of articulation was classed as ‘lips’, the labiodental as ‘lip-teeth’, the dental, alveolar and postalveolar as ‘point and blade’, or the palatal as ‘front’ (Passy & Jones, 1912). An example is in Figure 10:



10 THE INTERNATIONAL ALPHABET

		Lips	Lip-teeth	Point and Blade	Front	Back	Uvula	Throat
CONSONANTS	Plosive	p b		t d	c ɟ	k ɡ	q ɢ	ʔ
	Nasal	m		n	ɲ	ŋ	ɴ	
	Lateral			l ɫ	ʎ	(ɫ)		
	Rolled			r ṙ			ʀ	
	Fricative	ꜰ ʋ ʍ w ɥ σ ρ	f v	θ ð s z σ ρ ʃ ʒ ɹ	ç j (ɥ)	(ʍ w) x ǥ	ᴙ ʁ	h ɦ

		Lips	Front	Mixed	Back
VOWELS	Close	(u ü y)	i y	ï ü	ɯ u
		(ʊ ʏ)	ɪ ʏ		ʊ
	Half-close	(o ö ø)	e ø	ë ö	ɤ o
				ə	
	Half-open	(ɔ ɔ̈ œ)	ɛ œ	ɛ̇ ɔ̇	ʌ ɔ
			æ	ɐ	
	Open		a	ɑ	

(Sounds appearing twice on the chart have a double articulation, the secondary articulation being shown by the symbol in brackets.)

Figure 10: The IPA in 1912. (Passy & Jones, 1912: 10)

The IPA has been subject to adjustment, and since the foundation, the members of the Association have always been aware that the Alphabet was not perfect, nor did it aim to be. A quote from a version of the Principles published in 1912 states: ‘Completeness and perfection are ideals unattainable in this world, and the International Phonetic Alphabet lays no claim to it’ (Passy & Jones, 1912: 17). Such a statement reveals a change in attitude towards the phonetic sciences from the ones that have been surveyed in this discussion, and demonstrates the understanding that transcription systems should always be devoted to continuous improvement, rather than being considered as the definitive solution to the issues of transcribing languages. The Association recognised that phonetic and phonological theories were in constant development, and that the continuous testing of hypotheses was necessary for an accurate analysis.

Over the years the symbols of the IPA have been slightly modified numerous times in terms of shape, for example the variation from <ɩ> to <ɪ> or from <ꜰ> to <ɸ>, in term of value assignation, as is the case of <ʋ>, which was initially used in place of <β> and subsequently adopted its current value as a labiodental approximant, new symbols or new schematic representations have been added, such as <ʘ>, introduced in the IPA in 1979, or the Cardinal Vowels chart (Jones, 1935; Pullum & Ladusaw, 1986). The most recent version has been presented in 2005. In general, attempts to modify the IPA have not always been successful or met with enthusiasm by the members of the Association. For example, of the proposals presented in the Conference on Phonetic Transcription and Transliteration, inaugurated by Jespersen and held in 1925 in Copenhagen, only a few were incorporated in the IPA, such as the abovementioned introduction of <ɸ β> for the labiodental fricatives, the use of symbols like <ʈ ɖ ʂ> for retroflex sounds, or the adjunction of < ̪> for dentals (International Phonetic Association, 1999; Kemp, 1994).

3.15 Final remarks

The success of the IPA was indisputable even since its earlier representations, and this is in my opinion also due the to the fact that the IPA was perhaps the first concrete attempt at trying to find international consensus, rather than serving the purpose of a single Association or Society, or merely providing the solution to immediate practical scopes. None of the other alphabetic or analphabetic systems that were present around the time of the Association's foundation and in following years, such as those of Bell, Sweet, Lundell,[60] Jespersen,[61] and Pike[62] had the results or achieved the almost universal adoption that the IPA managed. The IPA began to be used in textbooks and dictionaries, by teachers and by other individuals with a non-phonetic background and, remarkably, some symbols of the IPA were also accepted and integrated into the orthographies of previously unwritten languages, especially African idioms (Jones, 1935; International Phonetic Association, 1949; 1999). Moreover, after the Kiel Convention in 1989, an extension of the IPA chart, the ExtIPA, was created in order for the notation of disordered speech (International Phonetic Association, 1999).

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[60] Lundell, J.A. (1879*) Det svenska landsmålsalfabetet: tillika en öfversikt af språkljudens förekomst inom svenska mål.* Stockholm: P.A. Norstedt & Söner, Kongl. Boktryckare

[61] Jespersen, O. (1889) *The Articulations of Speech Sounds Represented by Means of Analphabetic Symbols.* Marburg: N.G. Elwert(1890) *Danias lydskrift*. Dania, I, pp-33-79

[62] Pike, K.L. (1943) *Phonetics: a critical analysis of phonetic theory and a technic for the practical description of sounds.* Ann Arbor: University of Michigan Press

Nonetheless, many have indicated the failures and the theoretical inadequacies of the IPA. According to Ladefoged and Halle (1988), some of the weaknesses of the IPA consist of, for example, in the problematic distinction between vowels and consonants which does not account for the phonological interactions between the two, the absence of voicing in relation to vowels, the limitation of nasals to plosives and the symbolisation of other nasal phonemes via the use of diacritics or, more generally, the detachment of the alphabet from progress in phonological theory. Other areas of improvement could include the integration in the alphabet of symbols for the notation of suprasegmental features (International Phonetic Alphabet, 1999). However, if on the one hand the fact that phonological developments do not seem to have had much influence on the IPA, on the other hand the Association argues that its stability, but not immutability, makes it less susceptible to the frequent changes of phonological theories, offering continuity and reliability instead (International Phonetic Association, 1999).

Chapter 4: ‘A hundred years from now they shall still speak': The Phonetic Transcription of the *Berliner Lautarchiv* (British Recordings) - Vowels

Introduction

4.0 A day in the life of John Eggers, fisherman

On March the 15th 1918 a prisoner of war was recorded by a gramophone while he read the *Parable of the Prodigal Son*[63] in a Yorkshire accent. This ‘dark, medium voice with sufficient resonance’[64] belonged to John Eggers, a Yorkshire-born fisherman from Hull, who was detained in the German prisoner-of-war (henceforth POW) camp of Ruhleben, while the man recording him was Wilhelm Doegen, a German linguist and sound-recording expert. Ninety years later, in 2008, the British Library acquired this recording, and others, as part of the British and Commonwealth Recordings section of the *Berliner Lautarchiv*. The selection comprises 821 recordings of British and Commonwealth speakers telling folk tales, reading word lists, or singing songs (British Library, 2011). This project deals with a subsection of this collection: 66 recordings of prisoners reading the *Parable of the Prodigal Son*. Each of the digitized recordings, which are available to the public online on the British Library website, is linked to a corresponding copy, held at the British Library, of the original paper file. Most of the files contain a questionnaire including personal details about the speaker, such as the date and the place of birth and the dialect spoken (*Personalbogen),* two sets of phonetic transcriptions, created by the Austrian linguist Alois Brandl, and a copy of the text handwritten by the prisoner and modified into his local dialect. Only occasionally, the files also include a personal account of the prisoner's life (*Lebensgeschichte*). For example, in the case of John Eggers, we learn by reading the *Lebensgeschichte* document that when he was 16, he was training as an apprentice house-painter; however, he soon discovered that fishing, not house-painting, was his real vocation. He married a Lincolnshire-born woman at 27, and had six children. Eggers also included the account of how he came to be in the POW camp of Ruhleben:

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[63] Luke, XV, 11-32

[64] This was Doegen’s description of Eggers’s voice in the *Personalbogen*.

> [T]he German warship came along side ow (sic) us, and asked if we were Englishmen. And we said: "Yes, what about it". He said he was a German and was going to take us off board and sink our bord (sic). Ay, and he was as good as his word. We jumped off our ship and over to his ship and then he brought us to Cuxhaven. Nobody was lost, nor injured. We had a fine old time at Cuxhaven, plenty to eat and drink and good clean clothes. We lived there about a month, when we went to Hambourg (sic). We were nine weeks in Hamburg, when we came to Ruhleben and we have been here ever since (British Library copy, C1315.1.754-755 - John Eggers).

This account is sadly in line with the fate of other fishermen and trawlermen in the North Sea, and Eggers was probably just one of the many Yorkshire and Lincolnshire men that were abducted, or worse, killed, by German ships at the beginning of the First World War[65].

Not all files, unfortunately, include all of these details and fascinating accounts, and in some cases, only the *Personalbogen* could be preserved. The *Parable of the Prodigal Son* was chosen because it features a series of grammatical elements that could be easily compared across dialects, such as personal pronouns, or the pronunciation or usage of different verbal tenses. For these reasons, the *Parable* was a common choice for other similar surveys of the same era, for instance, the Linguistic Survey of India. From a more practical point of view, the *Parable* could be read in 3 minutes, which corresponded exactly to the usual length of a shellac disc (Brandl, 1926; Royal Irish Academy, 2011;

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[65] For an interesting account of these events, I point the reader to the BBC documentary *The Trawlermen*, which investigates the attacks on British fishermen and trawlermen in the North Sea by German warships.

British Library, 2011).

4.1 Brief history of the Berliner Lautarchiv

4.1.1 The Royal Prussian Phonographic Commission

With the beginning of World War I, the German and the Austro-Hungarian scientific communities began discussing the opportunities that conducting anthropological research in POW camps would bring[66]. In the eyes of these anthropologists, POW camps offered a number of benefits. For example, they constituted a relatively safe environment for the scientists, and, due to their militarized structure, researchers could count on the military body to control disruptive behaviour and overcome the reluctance of potential participants. Moreover, researchers could create ties with government and military authorities that had a willingness to support such projects with significant amounts of funds; but more importantly, the camps provided, in one place, unparalleled access to people of very numerous and diverse ethnic backgrounds, European and non-European, for physical measurements (Evans, 2010b).

Mahrenholz (2006) and Evans (2010a) note that after a few uncoordinated attempts by academics at study projects in POW camps, both in Austria and Germany, Carl Stumpf, founder of the Berlin Phonogram-Archiv, and Wilhelm Doegen put forward plans for the creation of a commission in 1914. Doegen had a very specific idea of what he intended to collect. In the application he sent to the Prussian Ministry for Education to demand the creation of the Royal Commission, he listed the following categories to be recorded:

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[66] For a discussion on the ideological implications of research in the POW camp environment and how these shaped post-war German anthropological studies, see Evans, A.D. (2010a) *Anthropology at War: World War I and the Science of Race in Germany.* Chicago: Chicago University Press

1. Languages from around the world.
2. All German dialects.
3. Music and songs from around the world.
4. Voices of famous people.
5. Other areas of interest (Doegen, 1925: 9 in Mahrenholz, 2006: 2).

The Royal Prussian Phonographic Commission (*Köninglich Preußische Phonographische Kommission*) was then created in 1915 and Stumpf became the chairman. Its main scope, as outlined by Doegen, was to record speech and music of the prisoners, or as Doegen put it, to 'capture the voices, languages and the music of all the people of the world on gramophone recordings' (Doegen, 1925: 9 in Weber, 2006) in order to build a 'Voice Museum of the People' (Doegen, 1925: 9 in Das Berliner Lautarchiv, 2011). Despite the heavy emphasis on language and music, physical anthropology studies were also carried out under the direction of anthropologist Felix von Luschan, and the dentist Alfred Doegen, Wilhelm's brother, produced X-ray 'palatogrammes' with the purpose of monitoring tongue movements involved in speech production (Mahrenholz, 2006; Weber, 2006; Evans, 2010b; Das Berliner Lautarchiv, 2011). The Commission brought together the efforts of Austrian and German academics from a range of disciplines, from musicologists, to ethnographers, to linguists, and had a total of thirty members. Doegen, who organised the expeditions to the camps and was in charge of the recording process, quickly became the most important figure in the program (Mahrenholz, 2006; Evans, 2010a; Das Berliner Lautarchiv, 2011).

Between 1915 and 1918, the commission made approximately 2,677 recordings in 250 languages and dialects[67] across 70 PoW camps in Germany: 1,022 wax cylinders recorded by the musicologist Georg Schünemann on phonograph, and 1,650 gramophone discs made by Doegen and his team. Doegen's recordings were accompanied by a photograph of the speaker, phonetic transcriptions of the text read by the prisoner, usually the *Parable of the Prodigal Son*, but also folk tales or anecdotes, or word groups of interest, and by a *Personalbogen* (see Appendix 1), a questionnaire about the prisoner's educational, linguistic, social and personal background (Doegen, 1921; Ziegler; 2003; Mahrenholz, 2006; Das Berliner Lautarchiv, 2011). Other recordings were made by Doegen on behalf of the Commission until 1938 (British Library, 2011).

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[67] Mahrenholz (2006) provides a list of the languages recorded: Hindi, Gurmukhi, Rai, Bengali, Khasi, Magar, Garhwali, Old-Hindi (India), Panjabi (Pakistan, India), Baloshi, Pashto, Urdu (Pakistan), Limbu, Nepali (India, Nepal), Magari, Gurung (Nepal), English (Nepal, Great Britain), Vietnamese (Vietnam), Baule (Ivory Coast), Dahomeen, Bariba (Benin), Mosi, Bobo, Samogo (Burkina Faso), Wolof, Pulaar (Senegal), Ful (Mali), Zarma (Mali, Nigeria), Kwa (Togo), Malinka, Soso (Guinea), Swahili, Mwali, Ngazidja, Ndzwani (Comoros), Somali (Somalia), Bambara, Mandara, Kanuri, Haussa (Sudan), Yoruba, Anyin (Ghana), Arabic, Berber (Algeria, Tunisia, Marocco), Malagasy (Madagascar), Maltese (Malta), Sardinian (Italy), Tatar, Avar (Russian Federation), Kirghiz (Kyrgyzstan), Pashto (Afghanistan)

Mahrenholz (2006) explains that in 1920, the recordings made by the Phonographic Commission were divided and assigned to new homes. The wax cylinders, produced by Schünemann, were later incorporated in the Berliner Phonogramm-Archiv, which, founded in 1915 by Stumpf, was a collection of around 16,700 wax cylinders made between 1893 and 1954 from worldwide locations. On the other hand, the gramophone discs recorded by Doegen and his team constituted the basis for the foundation of the Sound Department of the Prussian State Library in 1923[68]. In 1934, the Sound Department became part of the Friedrich-Wilhelms-Universität (now Humboldt-Universität zu Berlin). The collection is now called the Berliner Lautarchiv and is part of the Musicology Department of the Humboldt-Universität zu Berlin (Ziegler, 2003; Mahrenholz, 2006; Weber, 2006; Das Berliner Lautarchiv, 2011).

(Mahrenholz, 2006: 1)

[68] Lautabteilung an der Preußischen Staatsbibliothek.

4.2 Literature review

4.2.1 Previous work on the *Berliner Lautarchiv*

Previous research on the *Berliner Lautarchiv* has been mostly concerned with the history of anthropological, musicological and ethnographic studies in the POW camps of the First World War, and is, unfortunately, not particularly extensive. As Mahrenholz lamented, '[t]hese sound recordings can only be properly appreciated in their respective scientific and historical context, which, however, has not been investigated and reconstructed in sufficient depth as yet' (Mahrenholz, 2011: 188). To my knowledge, aside from sociolinguistic observations on the diachronic variation of the English dialects in the Archive, and the obvious acknowledgement that linguistic research did indeed take place in POW camps, there have not been studies specifically dedicated to the linguistic transcription of the *Lautarchiv* recordings, be that the British ones that are covered in this project, or of other nationalities.

The reason for the scarcity of material on the *Lautarchiv* can be explained by noting that academic research on the collection began quite recently, only in the last 15 years. This, in turn, can be attributed to the troubled history of the Archive, especially after the Second World War. Mahrenholz (2011) explained that after many relocations, renaming and changes in the structure of the various departments to which it belonged since its creation[69], the *Lautarchiv* eventually started losing its prestige and prominence from 1945, and even risked being destroyed in 1981. It was luckily rescued, as Marhenholz (2011) reported, by Jürgen Elsner, a German ethnomusicologist who ensured the collection's survival by organising the archive to be transferred to and preserved in the Department of Musicolgy (*Musikwissenschaftliches Seminar*) of the Humboldt-Universität zu Berlin, which is still the current location of the *Lautarchiv* today. It was only in 1996 that the curator of the collection at the time, Dieter Mehnert (1996), first presented detailed information about the *Lautarchiv* in his article *Historischen Schallaufnahmen - Das Lautarchiv an der Humboldt-Universität zu Berlin* (Historical acoustic recordings - The Sound Archive at the Humboldt-Universität zu Berlin). Jürgen K. Mahrenholz, also an ethnomusicologist who currently works at the Archive, has been involved in the digitization of the *Lautarchiv*, and was one of the first researchers, after Mehnert's publication, to initiate systematic academic study on the Archive and its contents in 1999 (Wissenschaftliche Sammlungen an der Humboldt-Universität zu Berlin, 2014).

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[69] For a detailed account of the history of the Lautarchiv's various changes of location, I direct the reader to Mahrenholz's 2011 essay in the volume *"When the war begun we heard of many kings": South Asian Prisoners in World War I Germany* edited by Roy, Liebau and Ahuja and available in English.

Although not primarily centred on the linguistic aspects of research in POW camps, the material that has been published on the *Lautarchiv* from the point of view of anthropologists, ethnologists and musicologists offers nonetheless a wealth of precious information. The articles, essays, and books presented in the last 15 years help shed light on the underlying principles of the Archive's creation, its development and practical organisation, its cultural impact and the ethical implications of its practices, as well as details on the lives of the academics involved and on the intricate dynamics between interviewers and interviewees. The volume edited by Roy, Liebau and Ahuja, *"When the War began we heard of several kings" - South Asian Prisoners in World war I Germany* published in 2011, as the title suggests, shifted the centre of attention away from the experiences of European prisoners in POW camps, and directed it onto the many South Asian detainees also detained in Germany during the First World War and their interactions with their German captors, an unexplored research area up to that time. As noted by Roy and Liebau in the Introduction, this volume is particularly significant also in view of the fact that it constitutes 'the first work to bring together many of the relevant sources, using, among others, a source corpus located in Germany that has hitherto hardly been used [...]’ (Roy and Liebau, 2011: 2). The contribution in the volume authored by Britta Lange and, once again, the one by Jürgen K. Mahrenholz, have proved particularly relevant and useful to this Case Study, especially for their information on the methodology of data collection, on the historical development of the *Lautarchiv* and for a survey of the various strands of research that concentrated their efforts on the investigation of prisoners of war from ethnographic and linguistic points of view. In her chapter, Lange shared her work on another subset of voice recordings within the *Berliner Lautarchiv*, this time of South Asian prisoners sharing their testimonies of their captivity, made at the ‘Halfmoon’ Camp in Wünsdorf, the place where the first mosque in Germany was erected in 1915. The construction of the mosque, however, was a move that had calculated political implications and a propagandistic intent, being an effort to ‘prove to the rest of the world the exemplary and liberal manner in which the German Empire treated its prisoners’ (Lange, 2011: 155), as well as that of inciting the South Asian prisoners to rebel against the English colonial authorities. Lange joined efforts with the filmmaker Phiilip Scheffner, whose own research on the recordings eventually culminated in the *Halfmoon Files - A Ghost Story* project which was presented as a 90-minute documentary in 2007 at the Berlin International Film Festival. The result of their collaboration and the meeting point of their individual research paths was the creation a video exhibition based on the authors’ investigations of the Halfmoon Camp recordings, titled *The Making of... The Halfmoon Files*, which also premiered in 2007 (The Halfmoon Files, 2014; Wissenschaftliche Sammlungen an der Humboldt-Universität zu Berlin, 2014). Lange’s contribution to the *When the War began...* volume focused in particular on the motives and ideologies behind the creation of what would have become the *Berliner Lautarchiv*, and which will be discussed here in later sections. Lange’s chapter was also particularly useful for its outline of the history of research inside POW camps by linguists, ethnologists, anthropologists and musicologists, and the attraction that the

POW environment exerted over German academic during the First World War. The enthusiasm that grew among the Austrian and German scientific communities for having found a more practicable alternative to a field trip to faraway and 'exotic' lands, was perfectly captured in the quote by the Austrian anthropologist and ethnologist Rudolph Pöch, who very excitedly proclaimed that '[t]he prisoner of war camps provide a hitherto unknown and unique opportunity for scientific research, they are an unparalleled *Völkerschau!*' (Lange, 2011: 156). Mahrenholz's essay in the same tome deals in more detail with the history of the *Lautarchiv* and on Doegen's own role in its creation and expansion, and on his practical expertise in sound recording. The chapter offers precious information on how the prisoners were selected, how data about them was collected and how their testimonies, readings, music and songs were recorded and stored, issues which will also be explored here in the following sections. Mahrenholz also emphasised another aspect of the research in POW camps: '[i]t was not seen as an omission that the recordings were made without a cultural context' (Mahrenholz, 2011: 203). In other words, Mahrenholz observed that the personal background and experiences of the prisoners were completely ignored and deemed essentially unimportant to the execution of the task at hand by the many scientists who converged on the POW camps. Even when some of the personal details of the prisoners were gathered (i.e. in the *Personalbogen*), these consisted mostly of factual information, and were only collected insofar they provided an effective and practical way of speeding up the process of cataloguing and organising the data according to predetermined categories, such as the language or dialect spoken by the interviewees and their ethnicity (Mahrenholz, 2011). This explains quite clearly why, as it was mentioned above, accounts such as that given by John Eggers are extremely rare within the Archive. And again, even when collected, they were only considered as no more than mere specimens of 'authentic' native speech.

The web pages of the Humboldt-Universität zu Berlin dedicated to the *Lautarchiv* and the Accents and Dialects section of the British Library Sound website also provide factual information on the Archive. The pages include information on the single recordings, such as the name and nationality of the speaker, the date and place of the recording, the content and length of the registration, etc.. In particular, the British Library Sound website also offers free access to digital versions of the 66 recordings of British speakers reading the *Parable of the Prodigal Son*, which also include an English translation of the speaker's *Personalbogen.*

Interesting biographical information and details on Brandl's linguistic education and methodology are provided by the linguist himself in the 1936 book *Zwischen Inn und Themse*. *Lebensbeobachtungen eines Anglisten. Alt-Tirol, England, Berlin.* Some of his most interesting (and even amusing) *Life Observations* concern his attempts to improve his own spoken English skills with the tuition of Henry Sweet's and his stay at the phonetician's house, where, as we will see, phonetic training and transcription exercises were accompanied by plenty of mutton and Hungarian wine in the evenings. Aside from humorous episodes, the volume is quite detailed in the description of his academic relationship with Sweet and on the structure of their phonetic study sessions. These constitute an invaluable first-person account of Brandl's own development as a linguist, and even more specifically within the field of Phonetics. Other personal anecdotes, biographical and academic experiences were also included in *Ausbruch aus der Provinz: Adolf Pichler, Alois Brandl, Briefwechsel (1876-1900),* a collection of the epistolary exchanges between Brandl and fellow Tyrolean and teacher of Geology in Innsbruck Adolf Pichler, who was also a writer, and shared a keen interest for literature with Brandl. The experiences of the Austrian professor as an expert of English dialects in POW camps are also included in another work, Doegen's *Unter fremden Vȯlkern: eine neue*

Völkerkunde (1925), while a collection of some of his transcriptions can also be found in Brandl's own *Englische Dialekte* (1926-27). Although not as extensive as the ones found in *Zwischen Inn und Themse*, these accounts nonetheless provide specific information on the notation methodology employed by Brandl for the linguistic transcription of the 66 Phonographic Commission recordings. *English Dialekte* (1926-27), being a printed version of some of these transcriptions, was also especially helpful in those instances where Brandl's handwriting was particularly difficult to interpret. As the initiator of the entire recording mission, Wilhelm Doegen has obviously been very prolific in the publication of material regarding the practical aspects of life and research in the POW camps and on the characteristics of the Archive itself. In particular, *Kriegsgefangene Völker: der Kriegsgefangenen Haltung und Schicksal in Deutschland* (1919) contained detailed accounts of the internal organisation of the POW camps that Doegen gathered during his many visits, including information on storage facilities, sanitary conditions, the provision of food, clothing and cultural entertainment, the regulation of communications and the monitoring of the exchange of mail, the regulations in place to deal with various types of sabotage. The abovementioned *Unter fremden Völkern: eine neue Völkerkunde* (1925) was instead more concerned with laying out the scientific advantages and the possible applications, especially within the fields of Applied Linguistics and language teaching, of research and speech recording in POW camps (Scheer, 2010).

4.3 Works on the contextual background

4.3.1 Linguistic-related works

The Case Study will also investigate studies into various linguistic fields which favoured or inspired the linguistic research in the POW camps, and which can help identify factors that have influenced both Brandl’s own transcriptions and the reasoning and methodologies applied in the collection of the prisoner’s speech samples. For this reason, I have deemed it appropriate to include in this discussion the notation of the German journal *Teuthonista* (formerly *Zeitschrift für hochdeutsche Mundarten*), which first appeared in 1900 and thus developed in chronological proximity to the *Lautarchiv,* and shares many similarities in the notation of vowels with Brandl’s own notation. The material available on the transcription alphabet employed in Teuthonista is again rather scarce, and not commonly available in the English language. However, Peter Wiesinger’s article *Das phonetische Transkriptionssystem der Zeitschrift ‘Teuthonista*’ (1964) offers an excellent overview of the history of the Teuthonista notation and of the development of phonetic scripts that preceded its appearance within the wider history of Dialectology studies in Germany, Austria and Switzerland. Wiesinger also dealt in great detail with the debate over the opportunity of using diacritic or monotypic alphabets for the notation of German dialects, which will be explored in greater detail in the following sections. In addition to the particular example of Teuthonista, the Case Study will also investigate the wider area of dialect studies between the nineteenth and twentieth centuries in Germany, France, England and Italy. This analysis will help to give an even fuller and clearer picture of how Brandl’s transcription developed and how this fitted with the research trends that were developing in Europe at the same time, especially in the German-speaking areas. The treatment of these near-contemporary efforts will serve the purpose of highlighting similarities with Brandl’s work as well as helping define traits that make Brandl’s transcription distinctive. In particular, the discussion will include a brief sketch of the dialect studies of Graziadio Isaia Ascoli in Italy, of Jules Gilliéron and Edmond Edmont in France, and of Joseph Wright in England. In addition to semi-contemporary endeavours, the influence of Richard Lepsius’s *Standard Alphabet* and of Eduard

Sievers's writings on Brandl's work, especially with regards to the notation of vowels, will obviously not ignored.

A more general approach, which discusses trends in Phonetics unfolding in Germany from the nineteenth century onwards, is offered by Klaus Kohler's *Three Trends in Phonetics: the Development of the Discipline in Germany since the Nineteenth Century* (1981). Kohler's contribution to the volume *Towards a History of Phonetics* (1981) helped define the theoretical framework in which Brandl and Doegen operated and the Lautarchiv was created. Particularly relevant for this Case Study is Kohler's account of how and why phonetic transcription had found a new place in the language classrooms in Germany and of the shortcomings of this approach. Kohler's chapter also examined the development of German phonetic studies alongside those simultaneously taking place in England, therefore drawing attention to fundamental differences, such as the focus on the physiological analysis of speech sounds of the German linguists, evident, for example, in Doegen's collection of palatographs, as opposed to the more practical phonetic approach of the English academics. Similarly, Howatt and Widdowson's *A History of English Language Teaching* (2004) also provided a valuable account of how English language teaching evolved over the centuries, and how it was shaped by the introduction of the phonetic-based approach.

4.4 Other fields of enquiry

As Mahrenholz (2011) observed above, the cultural, scientific and historical context of the *Lautarchiv* recordings has not been discussed and explored as much as necessary. While this Case Study does not claim to be a definitive account of the contextual background that facilitated the creation and the development of the Archive, it aims, nonetheless, to contribute to this investigation by presenting and engaging with various other relevant modes of enquiry. Whereas the focus of this analysis is obviously linguistic-oriented, the treatment of other scientific fields, such as anthropology and ethnography, and their engagement with the study of prisoners in POW camps again helps explain the attitudes of German academics, including Brandl, towards prisoners of different nationalities and cultures, and the dynamics of the relationship between researchers and detainees. The POW camp environment, as was noted above, was not only exploited by linguists, but proved particularly fertile for anthropologists, ethnologists and musicologists, too, and the volumes *Doing Anthropology in War Time and Warzones* (2010) edited by Johler, Marchetti and Scheer and *Anthropology at War: World War I and the Science of Race in Germany* (2010a) by Evans describe such endeavours in German-speaking countries and across Europe. In particular, Monique Scheer's contribution to her co-edited book, entitled very aptly *Captive Voices*, specifically deals with the Phonographic Recordings, and includes a very interesting discussion on the relationship between the advent of the gramophone and the phonograph and the foreshadowed revolutionising impact, and the lack thereof, that these had on the scientific studies in POW camps; in fact, Scheer concluded, the newly available opportunities for recording and playing back speech sounds did not have such a groundbreaking effect on these research fields. Scheer also examined the characterisation of prisoners into what the author defines 'ethnicized societies', and how this seemed to fit within and confirm a hierarchical vision of ethnicities German and Austrian scientists shared. As will be seen, this 'hierarchical vision' and attitude towards foreign cultures was somehow sadly similar to some of those observed within the Native American Case study, in terms of the view of the foreign other, usually Black Africans or Australian Aborigines in the POW camps case, as 'savage' or 'barbaric'. *Anthropology at War* by Andrew Evans (2010a) also deals with the development of war time anthropological studies in Germany between the beginning of the 20th century and the 1930s and their theoretical and ideological bases, and has a dedicated section on POW research and the Phonographic Commission. Evans is primarily concerned with the emergence of racial thinking amongst German anthropologists and other academics, and attempts to outline the context and the reasons for its appearance in 20th-century Germany. Evans's section on POW studies presents again the idea of prison camps as extraordinary *Völkerschauen* in the eyes of anthropologists, and the ideological fabrication of 'authentic' racial typologies in the quest for representativeness within the corpus of data collected.

4.5. Aims

4.5.1 The importance of the *Berliner Lautarchiv*

For very different reasons than those put forward by early nineteenth-century German anthropologists, the value of the wealth of speech data recorded in the POW camps which constitute the *Berliner Lautarchiv,* and the importance of the Archive itself, cannot be overestimated, even today. In terms of cultural and scientific significance, the *Lautarchiv* and the material within, still offer scope for interdisciplinary studies and lends itself to research from various fields of enquiry, as it has already proven during the First World War and the interwar period. As Mahrenholz (2011: 187) explained, the *Lautarchiv* 'is the earliest and most comprehensive systematic sound archive created for documentary and scientific purposes'. As such, it set the high standard for the creation of other similar archives, also by virtue of the fact that the documentation attached to each recording, which included photos, palatogrammes, questionnaires, handwritten texts, phonetic transcriptions, was impressively extensive, even for relatively short audio extracts (Mahrenholz, 2011). For this Case Study in particular, and the whole project in general, the opportunity to observe the development of a phonetic notation contemporary to the emergence of the IPA, so strongly influenced by one of its main contributors, Henry

Sweet, and one of the very first phonetic transcription methods to take advantage of recording technology in its dawn, is inestimable. Finally, a concluding consideration on the historical value of the recordings within the Archive, come from the words of Brandl himself included in Doegen's *Unter fremden Völkern: eine neue Völkerkunde* (1925):

> Here resounds a choir of participants in the war, whose voices otherwise would have faded away; a hundred years from now they shall still speak as that portion of England's soul which, in critical times, had to act and endure but did not have a say in public [...] One day the better England [...] will awaken once more and honour this cultural work [...]; until then, let it stand in the shadows as mere 'dialectology', as bizarre philologism, as German reverie (Brandl, 1925 in Mahrenholz, 2011: 204).

4.5.2 Aims

As for Case Study 1, this Case Study is not only limited to the presentation and analysis of a specific example of linguistic transcription, but rather, it attempts to present a much wider web of influencing factors that contributed to the emergence and observable characteristics of the 66 *Berliner Lautarchiv* transcriptions. As will be discussed in greater depth in the following sections, these factors can take various shapes: they can be of a practical nature, such as, for example, the technical advancement in the instrumentation for auditory and phonetic studies; theoretical, with regards to the study of the production of vowel sound in the German tradition, or the introduction of phonetic scripts and recordings for the purpose of language teaching; personal, in the case of Henry Sweet's Phonetics tuitions to Alois Brandl; or field-related, especially when one takes into account the prominence of Dialectology studies, towards the end of the nineteenth century and a new-found interest of the German academia for live languages.

Although the analysis will inevitably discuss examples of imprecision or other inconsistencies in Brandl's transcriptions, these will be used as prompts for investigation and explanation of Brandl's methodology rationale, rather than as evidence of the dialectologist's alleged inadequacy. In other word, Brandl's inaccuracies will only be considered as such insofar as they provided glimpses into another stage in the History of Linguistic Transcription and into the mental world of the transcriber. These inaccuracies, as will be seen in later sections, mostly fall in three main categories:

- different symbols used for the same phoneme or the same symbol used for different phonemes;
- approximate notation of English vowels;
- incorrect identification of phoneme (which, however, might be due to the poor quality of the recordings).

As previously mentioned with regards to the issue of validity and ‘linguistic merit’ of the North American material, it must be pointed out here again that it would be unreasonable and incorrect to evaluate the achievements and the methodologies of early 20th-century linguistic enquiry in light of the methodological standards and acquired knowledge we hold in our scientific community at present. In addition, the concept of ‘mental world’ expressed in earlier sections will be presented here as well to illustrate the intricate relationship between auditory impression and linguistic knowledge, between what is heard and what is known and the way these influence each other, and to demonstrate the complex theoretical, practical, cultural and social processes that are involved in the practice of translating voices into text.

The following consideration might shed light on just how interlinked previous linguistic knowledge and acoustic impressions are. A quite crucial practical advantage that 20th-century linguists in the POW camps had over missionaries in North America was undoubtedly the newly available opportunity to check back on the interviewees’ utterances and exact pronunciations, allowing fieldworkers to check their transcription against the recording, rectify any mistakes or removing doubts about any unclear pronunciation, without having to rely solely on what was caught on paper after a first listen. Although greatly aiding and speeding up this process, this technological advancement, however, did not necessarily render the transcription practice any less complex or straightforward. As we will see in later sections with regards to the transcription of vowels in the *Berliner Lautarchiv* and other works of the German tradition, the description of the formation of vowels greatly influenced, and in actual fact restricted, the effectiveness of vowel notation, rendering it almost inflexible and unsuitable to successfully account for the system of vowels of the English dialects. This, as will be explained in Brandl's specific case, was observable even with, or despite, Henry Sweet's careful tuition to the Austrian Anglicist. Thus, another important difference between the experiences of POW-camp researchers and those of the missionaries working in the North American lands between the sixteenth and the nineteenth century, was also the degree of formal linguistic training received and the context in which it was imparted (i.e. outside of the sphere of influence of religious denominations).

The focus of this Case Study is obviously on Alois Brandl, his educational background and his linguistic production, as he is the author of the transcriptions of the 66 recordings that are the centre of this project. As a result, it is obviously acknowledged that a discussion of Brandl's system of transcription would not be possible without also considering Henry Sweet's work on linguistic notation, given how influential the contribution of the English phonetician was for Brandl's subsequent career (by his own admission, as will be shown below) and for the field of Phonetics. However, it is also acknowledged that the recordings of the Phonographic Commission would have simply not existed without Wilhelm's Doegen contributions and initiative. As a result, this Case

Study will also investigate aspects of Doegen’s work, to add further detail to the history of the *Berliner Lautarchiv* and the rationale behind its creation.

As was mentioned above, various research fields have appreciated in the past the great opportunity for scientific study that the *Lautarchiv* and POW camps have provided. The history and historiography of disciplines such as Anthropology, Ethnology, Ethnomusicology, Applied Linguistics, and Phonetics cannot but be enriched by engaging in a thorough investigation into the Archive and the ideologies and methodologies behind the scientists who gave rise to its creation. To use, once again, Mahrenholz’s words,

> [i]t is now more than 90 years since the beginning of the First World War. This distance should allow for this collected material, which is not only a repository of recorded language samples but an important part of world cultural heritage, to be evaluated and analysed more comprehensively and from various academic angles’ (Mahrenholz, 2011: 205).

In line with these considerations, this Case Study will thus endeavour to add a new chapter to the History and Historiography of Linguistics and Phonetics, and will attempt, albeit to a much smaller extent, to pursue and apply such an interdisciplinary approach, as it is hoped that this will facilitate the task.

Contextual Background

4.6 Two key figures: Wilhelm Doegen and Alois Brandl

4.6.1 Wilhelm Doegen: brief biography

Wilhelm Doegen, born in Berlin in 1877, was initially a student of Law and Economics, but eventually decided to pursue the study of Modern Languages at the Friedrich-Wilhelms-Universität in Berlin (later renamed Humboldt-Universität zu Berlin, where the *Lautarchiv* is now located). He developed an interest for Phonetics, and during his semester at Oxford University between 1899 and 1900, he was a pupil of Henry Sweet, and thus became acquainted with Sweet's method of transcription, and also studied under Alois Brandl. Doegen, who quoted Sweet as being the biggest influence in his subsequent research, became a strong advocate of the use of Phonetics and phonetic transcription in Modern Languages teaching, especially English, making this the topic of his dissertation entitled *Die Verwendung der Phonetik im Englischen Anfangsunterricht* (The Use of Phonetics in Elementary English Instruction) for his graduation in 1904 (Mahrenholz, 2006). He then became a teacher of English, German and French at various secondary schools in Berlin, the Lessing-Gymnasium, the Andreas-Gymnasium and the Borsig-Realschule, making extensive use in his lessons of phonetic transcriptions, which were accompanied by recordings of the target language made by native speakers.

The recording technology provided Doegen with the means of further developing his methodology, and from 1909 onwards, he started creating the *Doegens Unterrichtshefte für die selbständige Erlernung fremder Sprachen mit Hilfe der Lautschrift und der Sprechmaschine* (*Doegen's Instruction Booklets for the Independent Learning of Foreign Languages with the Help of Phonetic Transcriptions and the Talking Machine)*, a series of volumes of language teaching books and recordings of native speakers reading passages of French, German and English classics. The work, aided by the Odeon Recording Company, turned out to be quite successful, especially the recordings, and this persuaded him to push forward his proposal for the creation of the Phonographic Commission for his ‘Voice Museum of the People’ (*Stimmen-Museum der Völker*) (Mahrenholz, 2006; Das Berliner Lautarchiv, 2011). Despite being the initiator of the whole project, the chairmanship of the Royal Prussian Phonographic Commission was eventually assigned to Professor Carl Stumpf, as Doegen was not deemed to have sufficient academic status (Scheer, 2010).

The rest of Doegen’s career was closely linked, for many years, to the vicissitudes of the *Lautarchiv,* its movements and restructuring across different academic departments in Berlin. As Mahrenholz (2006) explained, Doegen managed to take over the gramophone recordings 1918 he created, and incorporated them in 1920 into the newly founded *Lautabteilung an der Preußischen Staatsbibliothek* (Sound Department of the Prussian State Library), of which he became director. As was explained above, on the other hand, the phonograph recordings, which were music recordings, and therefore outside of Doegen’s influence, were instead integrated into the *Berlin Phonogramm-Archiv*. Doegen’s success continued, and in 1932 he became the President of the Association of American-English Cultural Studies and of the *Internationalen Phonographischen Liga*. Nevertheless, in 1933, Doegen was dismissed from his position, due to alleged financial irregularities (Das Berliner Lautarchiv, 2011). However, Kaplan (2013) comments that Doegen was instead gently pushed out, after the *Lautkommission* judged Doegen’s lack of scientific training, especially in philology, inadequate and no longer feasible or beneficial:

> The Lautkommission has concluded that fruitful scientific work under the direction of Herr Doegen, who has shown himself over the course of many years to be lacking in all scientific credentials, is by no means to be expected. The scientific work of the Lautabteilung must be preserved at all costs, a task for which Herr Ketterer is certainly well suited (Doegen, 1912 in Kaplan, 2013: 302).

What is quite interesting to note is that Brandl himself was a signatory of this statement. Doegen died in Berlin in 1967.

4.6.1.1 Dogen's recordings in Ireland

As mentioned above, Doegen carried on recording speakers after the war under the direction of the *Lautkommission*, and between 1928 and 1931 he recorded Irish native speakers across the Ulster, Munster and Connacht provinces with the support of the Royal Irish Academy and of the Irish Department of Education, and the involvement of the Universities of Cork, Galway and Belfast (Hickey, 2011; Royal Irish Academy, 2011). As for the recordings in the *Lautarchiv*, the *Parable of the Prodigal Son* was again used for the Irish project (although not for every informant), as well as the filling in of a *Personalbogen*. Initially, the scheme was only meant to include the study of Ulster Irish speakers, due to lack of funding, with special attention paid to those counties where Irish spoken as a native language was at risk of disappearing. In a report to the Council of the Royal Irish Academy (1928) it appears that Doegen was quite specific in his instructions for the selection of speakers: informants had to possess 'clear articulation, strong voices, and, above all, well-preserved teeth' (Royal Irish Academy, 1928: 21). However, as the Academy reported, '[t]he latter qualification involved not a little difficulty; the best native speakers are, of course, advanced in years, and most of them have defective teeth' (Royal Irish Academy, 1928: 21). At an average of two recordings per informant, Doegen and his assistant Tempel (from the *Lautabteilung*) made recordings in Ulster of interviewees who were driven especially to Cork, at the University College. In total, 134 informants from the three Irish provinces were recorded reading the Parable of the Prodigal Son, singing traditional songs, telling anecdotes, reciting prayer or pronouncing words in their dialect: 41 in Ulster, 64 in Connacht, 29 in Munster, for a total of 216 recordings (Royal Irish Academy, 1928; 1931; 1931-32).

As will be seen in later sections, these kinds of recording session resembled more a staged performance than an example of natural speech. In the case of the Irish project, Doegen had laid out very precise directions on how the recording sessions ought to be carried out. In these sessions, informants were supported by ‘trainers’, or teachers, who were in charge of modifying the text of the *Parable* into the local dialect for the speakers to perform. Interviewees were expected to speak with good enough diction, but still maintain naturalness in their speech. In addition, their voices were tested beforehand by the appointed trainers before the recording session could take place, ‘and repeated if necessary until the experts were satisfied’ (Royal Irish Academy, 1928: 22).

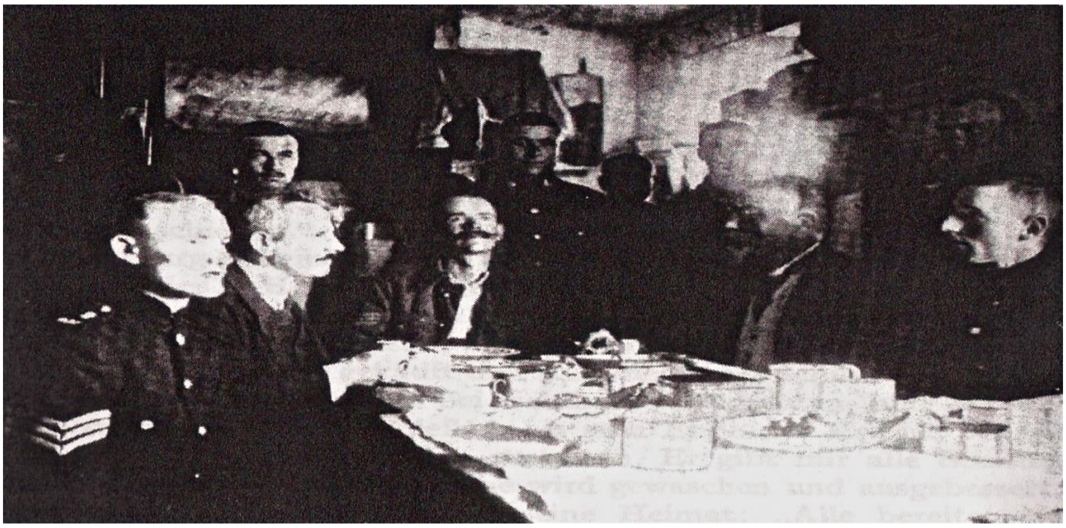


Figure 11: Wilhelm Doegen (second from the left) and Alois Brandl (second from the right) having five-o’-clock tea in Quedlinburg camp (Doegen, 1921: 260).

4.6.2 Alois Brandl: brief biography

An even more important figure to this project is Alois Brandl, who provided the phonetic transcription to the 66 recordings of the British prisoners reading the *Parable of the Prodigal Son* analysed here and of the rest of the recordings of English dialects. Alois Brandl, born in Innsbruck in 1855, was a Professor of ‘Anglistics’ at the Friedrichs-Willhelms-Universität and Chair of English Philology in Berlin. His university career began when he was a student of Classical and Germanic Philology under Julius Zupitza, who was the Chair of that Department at the Friedrichs-Willhelms-Universität at the time, and who, as we will see below, introduced Brandl to Sweet during his first visit to England. After gaining his PhD in 1878, Brandl met Sweet for the first time in 1879, aged 24, when he was researching material for his post-doctoral dissertation: an edited version of *Thomas of Erceldoune* (1880). The meeting left a lasting impression on Brandl, both on an academic level and on a personal one (details of their encounters will be discussed below), and influenced deeply his following career. However, Brandl's way of approaching his fellow English philologists betrayed an attitude shared by most of his German colleagues, as Utz (2006) explained, which considered British scholars as 'mere enthusiasts and kindly amateurs' (Utz, 2006: 34). Sweet was perhaps the only exception Brandl was prepared to make. The English phonetician, on his part, was not particularly impressed by what he defined 'parasite philology' (Sweet, 1885 in Utz, 2006: 36). Sweet perceived the numerous studies of the German philologists on English text as a form of cultural appropriation, an authentic 'invasion'. He also lamented the fact that the large German presence in his own field of study greatly hindered his personal research and that of his British colleagues (Utz, 2006).

After his *Habilitation* in 1881 in Vienna, Brandl pursued his research in the field of Anglistics. He gained his *Privatdozent* title in 1884, and initially taught in Prague as an *außerordentlicher Professor* (professor without chair). The Austrian philologist became an *ordentlicher Professor* (professor ordinarius) at 33, and went on to teach in English Philology in 1888 in Göttingen, moving to Strasbourg in 1892. Brandl then reached the Friedrichs-Willhelms-Universität in Berlin, and in 1895 he became the Chair of the Department of English Philology, following Zupitza's death (Wölcken, 1955; Mair, 2013; Österreichisches Biographisches Lexikon, 2014). During his career, Brandl contributed greatly to furthering knowledge within the field of English Studies in Germany, but his publications had a much wider audience and following across Europe and North America.

His works covered topics on philology, literature, historical linguistics, modern languages and German and British dialects. Brandl also dealt with a variety of authors, including Chaucer, Byron, and Wordsworth. He worked on critical editions of Old and Middle English texts and anthologies, published extensively on topic in English literature, and edited a three-volume *Geschichte der englischen Literatur* by Bernhard ten Brink, a work later translated into English (*History of English Literature*) by Dora Schmitz. However, where Brandl's authority in the field fully established itself was in the studies of Shakespeare, and his critical edition of his works, *Shakspere...Mit Porträt* of 1894, which Brandl re-edited and re-published in 1922 under the title *Shakespeare. Leben-Umwelt-Kunst. Neue Ausgabe mit sieben Abbildungen* had been particularly influential. As will be discussed below, Brandl also joined the heated debate on the English and German national claims over Shakespeare and his works, and Brandl's lecture entitled 'Shakespeare and Germany' (1913) given to The British Academy as the Third Annual Shakespeare Lecture had been a great contribution for the German side of the argument. Between 1901 and 1921 of was the Chairman of the Deutsche Shakespeare-Gesellschaft Brandl's research on Coleridge was also particularly influential, and his *Samuel Taylor Coleridge und die englische Romantik* (1886), constitutes the first work on the author in a language other than English (Paley, 2008). Brandl's academic prominence was also reflected in the fact that he was a member of some of the most important cultural societies and academies of the time, including the Royal Prussian Academy of Sciences, the Royal Society of Literature, and the Vienna Academy of Sciences. He also co-founded and edited the series *Palaestra* with Erich Schmidt, as well as being editor of the publication *Archiv für das Studium der neueren Sprachen und Literaturen* and of the organ of the Deutche Shakespeare-Gesellschaft, *Jahrbuch der Deutschen Shakespeare-Gesellschaft.* (Firchow, 2008)

Due to his academic expertise and previous research experience, Doegen included him in the Phonographic Commission as the specialist on English and Scottish dialects (Mahrenholz, 2006; Utz, 2006). As Mahrenholz (2006) noted, each main language or linguistic group had its own specialist. For example, Adolf Dirr was in charge of Caucasian languages, August Heisenberg of Greek, Otto Dempwolff of Malaian, etc..

As an Anglicist, the outbreak of the Great War put Brandl, and other colleagues involved in *Anglistik*, in a rather peculiar position. As Firchow (2008) illustrated, and as will be discussed below with regards to surge of ‘patriotic paranoia’ of German and Austrian scholars during the War, being involved in English Studies raised questions of national allegiance. As President of the German Shakespeare Society, Brandl, already a signatory of the *Manifesto of the 93* of 1914, stated that ‘[f]or all of us nation takes precedence over profession [...]; we serve scholarship in order to serve Germany’ (Brandl, 1916 in Firchow, 2008: 61). As pointed out by Firchow (2008), while Brandl did not overtly disseminated or participated in hostile propaganda against his colleagues on the other side of the Channel, his scholarly publications and lectures during the War were ‘often tendentious both in its selection of subject matter and in its treatment of that subject matter’ (Firchow, 2008: 63). Shakespeare and his works, in particular, were at the heart of a war of cultural ownership between England and Germany, with Brandl playing a crucial role in it, given his prominence and authority in the Anglistics field. Through the *Deutsche Shakespeare-Gesellschaft*, of which Brandl was the President during the War, and the society’s organ, the *Jahrbuch der Deutschen Shakespeare Gesellschaft,* the Austrian linguist and his German colleagues, made passionately the case for Germany’s right to claim to the Bard for her own - and as her own -, as Shakespeare was ingrained into the very soul of the Germans. In this particular context, thus, Firchow (2008) explained that

> the controversy about Shakespeare during the Great war ultimately turned into one in which it was argued that one national group approximated more closely to

> Shakespeare's characteristics than another and for this reason was able to understand Shakespeare, whereas the rival national group could not, or could do so only inadequately (Firchow, 2008: 95).

In this viewpoint, the argument of the German-speaking Anglicists can be effectively summarised by the words of another member of the *Shakespeare-Gesellschaft*, Gerhart Hauptmann who, in a talk on the topic of the relationship between Germany and Shakespeare, stated simply that no one else,

> not even the English, [...] has a claim on Shakespeare like the German. Shakespeare's characters are part of our world, his soul has fused with ours; and if he was born and died in England, then Germany is the country where he truly lives (*Jahrbuch*, 1915: xii in Firchow, 2008: 65).

The politicisation of philological studies and of Shakespeare (and of academic research more generally) worsened a situation that had already degenerated in terms of international academic cooperation with the breakout of the Great War even more within the academic establishments of the two nations. As will be illustrated below, the so-called 'professorial wars' as Firchow termed the heated exchanges between English and German-speaking scholars over Shakespeare, were part of the wider clash of culture and perceived cultural values that became especially evident during the War. Within the context of philological studies in England and Germany, Firchow (2008) explained that this was also a clash of collective identities, that of one's profession and that of national allegiance. As was discussed above, the latter prevailed. After the War, Brandl continued to be the editor of the *Jahrbuch.*

A former PhD student of his, Tomlinson, who wrote an *in memoriam* piece on the Austrian professor in 1942, reported that the conflict severed Brandl's many professional and personal relationships with his English colleagues. He also described him as:

> a massive figure of a Tirolean, with a broad face topped by bushy white hair and

> largely covered by equally bushy eyebrows, beard, and moustache. He spoke a precise English in a high-pitched, sometimes squeaky voice, but in German he growled or barked through his beard with a strong touch of Innsbruck dialect, so that the German students themselves didn't always understand him, let alone a poor, frightened foreigner. (Tomlinson, 1942: 110).

The American student also spoke of his professor and mentor as quite an intimidating and feared figure inside the university classroom, but friendly and affable with his pupils and colleagues in informal environments. Tomlinson (1942) explained that Brandl often invited his students to meet him for a coffee or a beer on Tuesdays, or even to join him for a Sunday dinner at his house. From time to time, he also organised afternoon hikes through the German Grunewald close to Berlin on Saturdays (Brandl had a house nearby, in Tiergarten), 'where [Brandl], the former mountain-climber, was still one of the best walkers' (Tomlinson, 1942: 110). Brandl retired from his academic career in 1923 and died in 1940 in Berlin.

4.7 Data collection in the POW camps

4.7.1 The peculiar nature of the Sound Archives

Scheer (2010) pointed out a peculiar characteristic of the *Lautarchiv* and of the other Viennese and Parisian sound archives created in the first two decades of the 20th century: these were created before the material that would be preserved in them was even collected or recorded, almost as if in anticipation of the great cultural treasures that the gramophone and phonograph might uncover. As Scheer (2010) explained, this was essentially motivated by the belief in the impending extinction of some 'primitive peoples' (von Hornbostel, 1911 in Scheer, 2010: 282). For the sound archives, this was thought to be an even more pressing matter, as it was assumed that their language and music would disappear even faster, mostly due to colonization, evangelization and schooling (i.e. moving from a *Naturvölker*-state to a *Kulturvölker*-state, as will be discussed in later sections).

4.7.2 Recording equipment

Obviously, the kinds of studies that began taking place in POW camps would have not been possible without two key inventions of the second half of the nineteenth century: the phonograph, devised by Thomas Alva Edison in 1877 and the gramophone, invented by Emile Berliner in 1887. The advantages of these inventions were not only for the linguists to appreciate and exploit. As Scheer (2010) explained, anthropologists and ethnomusicologist also benefitted enormously from using the new technologies. The phonograph had the great advantage of being portable and could be operated without the need of electricity, and was relatively straightforward to use. This meant that it could be used anywhere, including POW camps, and thus the phonograph was chosen primarily by the anthropologists to carry out the Berliner Lautarchiv recordings. Crucially for fieldwork investigation, the phonograph was also capable of playing back what was just recorded on the wax cylinders. Unfortunately, however, the quality of the recording was negatively affected each time the cylinder was played back. As the focus was mostly on the conservation and archival of this precious acoustic material, this characteristic somehow limited the advantages of playback (Scheer, 2010). Gramophones, on the other hand, were more difficult to use, as they required a team of technicians in order to work and were consequently more expensive, but they were also more versatile. Instead of wax cylinders, gramophones pressed onto wax discs that could be subsequently used as negative copies for the creation of shellac or vinyl discs, and playback was only possible after these copies had been made. The discs were flat, which meant that their storage and transport were significantly simplified, and even made accessible for home use. As with the phonograph, the gramophone, too, had its disadvantages, being, as was mentioned above, too financially demanding if one needed to both press and playback. The audio quality was also deemed inferior (Weber, 2006; Scheer, 2010). However, the fact that both could not only record or press sound, but reproduce it as well, was especially useful to anthropologists and for linguistic researchers: for example in the case of phonetic transcriptions, the phonetician could transcribe the speech of the prisoner at a later time, and could listen to the recording again to check the correctness of his impressions. Music recordings were generally made with the phonograph on wax cylinders, as they had a better acoustic quality, whereas speech recordings employed the gramophone and shellac discs and were preferred by the linguists working in the POW camps (Mahrenholz, 2006; Weber, 2006; Scheer, 2010; Das Berliner Lautarchiv, 2011). Brandl indeed preferred the use of gramophones for their ability to produce *phonetische Platten* (phonetic plates or discs) which he could then use to check that his transcriptions were as accurate as possible.

4.7.3 Phonograph, photograph and film

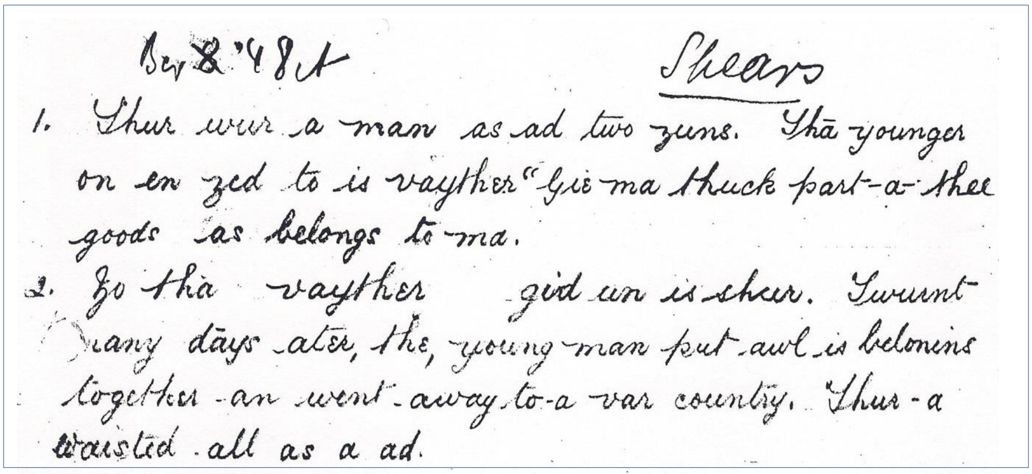
As we have seen, the phonograph and the gramophone were crucial to the implementation of the POW camps project with regards to voice and music recordings, and ethnomusicologist and linguists all greatly benefitted from the new instrumentation available.

However, recording technology was not the only kind of useful equipment scientists could count on to gather their data. Physical anthropologists, who were especially interested in the measurement and classification of the physical traits of the prisoners for racial studies, also relied on taking photographs of their ‘informants’ to better document their findings. As Scheer (2010: 304) pointed out, it is difficult to establish whether scholars took a picture of every soldier they examined, but it is more likely that only particularly ‘exotic ethnicities’ were photographed. Prisoners’ faces were photographed from the front as well as from their right profile, as it was commonly done for anthropological studies at the time. Pöch also added photographs of the face turned at 30 degrees from the frontal point (Lange, 2010). In addition to their scientific function, photographs were also used in wartime propaganda in leaflets or other publications, and they helped created in the minds of the German audiences the concept of the enemy as a ‘racial other’ (Evans, 2010a; Scheer, Marchetti and Johler, 2010). The majority of the photographs taken during the POW project were not part of the prisoner’s recording documentation or part of the archive now, as some were lost or were privately acquired by those who took part in the studies; a few, however, are included in Doegen’s *Kriegsgefangene Völker* (1921) and *Unter fremden Völkern* (1925). In addition to the typical anthropological photographs of the POWs, Doegen also published images of the prisoners while being recorded or when involved in various everyday camp-related activities, from cooking, writing letters and praying, to washing, or simply passing the time. Also included are pictures portraying in detail the structure and facilities of the camps, be they the barracks, the kitchens, the showers or entertainment rooms. More photographs from the camps were taken and later published by the German Otto Stiehl, who was mainly based at the above-mentioned Halfmoon Camp in the volume *Unsere Feinde: 96 Charakterköpfe aus deutschen Kriegsgefangenenlagern* (1916). Egon Von Eickstedt, a doctoral candidate of Luschan was also involved in the collection of photographic evidence for racial studies, as well as a photographer from the Art Historical Institute of the University of Berlin, Gerdes, and the Art History scholar Adolf Goldschmidt, his mentor, who both provided the pictures included in Doegen’s *Unter Fremden Völkern (1925)* (Olin, 2010).

In addition to being photographed and recorded, prisoners were also occasionally filmed, a practice that was not unusual in anthropological and ethnographic studies (Fuhrmann, 2010). Before deciding to focus on anthropometric measurements, Pöch filmed prisoners in POW camps for *Völkerschau*-inspired exhibitions, having already done so during his fieldwork in New Guinea before the war. As Furhmann (2010) notes, ‘Pöch’s POW-camp films leave today’s viewers uneasy [...]. [T]he POW camp setting itself conveys a strange blend of scientific interest, humiliation, and voyeurism' (Fuhrmann, 2010: 338). As in the *Völkerschauen*, the performances were often far from being a 'typical' cultural expression of an ethnic group, and were 'visibly staged' (Fuhrmann, 2010: 338). The content of the films included traditional dance routines, crafting or other traditions deemed 'typical' of the ethnic group, and one of the movies depicts the facial cast of a prisoner being taken by disquieting figures in white hoods. Fifteen in total, these films were all taken by Pöch in 1915 until autumn, when he abandoned filming to focus on racial measurements (Fuhrmann, 2010).

4.7.4 Preparatory steps

Mahrenholz (2006; 2011) described the process involved in the collection of the material. First, the members compiled a list of the languages of interest to the Commission; secondly, the list was sent to the camp's supervisors who would reply with another list of the languages available on camp. Finally, a specialist of each of the linguistic groups available would choose the most suitable speakers. As mentioned above, each recording was accompanied by some paperwork, without which the recording process could not begin. In the case of the 66 recordings that are the object of this study, Brandl had to make sure that each prisoner completed his *Personalbogen*, and, more importantly, created a modified handwritten version of the *Parable of the Prodigal Son* in his local dialect. An example is below in Figure 12:



Bez 8'48 t

Shears

1. Shur wur a man as ad two zuns. Shā younger
on en zed to is vayther "Gie ma thuck part-a-thee
goods as belongs to ma.
2. Zo tha vayther gid un is shuur. Twunt
many days ater, the, young man put awl is belonins
together an went away to-a var country. Thur-a
waisted all as a ad.

Figure 12: Handwritten version of the first two verses of the *Parable of the Prodigal Son* by Frederick Shears from Wiltshire. (British Library copy, C1315.1.395-7 - Frederick Shears)

Brandl (1925) explained that the handwritten version of the text to be read was intended to eliminate, or at least limit, the occurrence of variations between the phonetic transcription of the initial reading of the text by a particular speaker and the second phonetic transcription produced after listening to the recording. In other words, by having his own handwritten version of the Parable of the Prodigal Son in front of him, a prisoner would be more consistent and more likely to repeat what he had just read into the recording machine and, with any luck, in exactly the same way as before, therefore making the phonetic transcriptions match the master copy.

The *Lebensgeschichte* documents, when present, were also accompanied by a phonetic transcription. But unfortunately, as mentioned above, these precious accounts texts are generally missing because such information was largely outside the scope of POW camps studies.

For anthropological, ethnographic and ethnomusicological studies, preparatory steps for data collection involved both procedures for the selection of prisoners, and the preparation of paper documentation, which was meant to record a prisoner's geographical origin and his ethnicity in a similar way to the *Personalbogen*. The aim was to find ‘material’ that would represent a ‘typical’ example of an ethnic group, particularly in the case of physical features. As far as physical anthropologists were concerned, potential groups of participants were selected according to whether they fitted within a particular ‘racial typology’ that had already been established in advance; to confirm the validity of this first ‘visual’ screening, a series of anthropometric and somatoscopic (i.e. skin colour, hair colour, etc.) measurements were then taken to verify physical features, or ‘racial elements’ of the specific ‘racial type’ (Lange, 2010).

4.7.4.1 The Personalbogen

The Personalbogen (Personal Questionnaire) contained a series of question devised to investigate the speaker’s background. In addition to common questions, such as name, place and date of birth, and main language spoken, the questions aimed to ascertain other useful information about the interviewee, with special attention paid to his educational formation, linguistic/dialectal features, and particular talents that might have turned out to be ‘interesting’. The questions included in the questionnaires are reported below:

- Name and Surname (in Roman script or in the writing system of the native language)
- Date and Place of birth
- Which major city is closest to his place of birth?
- Canton/ County
- Where did he live in the first 6 years?
- Where did he live between the ages of 7 and 20?
- What education (did he receive)?
- Where did he attend school?
- Where did he live at age 20?
- Where was the father from?

- Where was the mother from?
- Which ethnic group does he belong to?
- What is the mother tongue?
- Additional languages spoken?
- Can he read? Which language?
- Can he write? Which language?
- Does he play an instrument from the homeland available in the camp?
- Does he sing or play music in a modern European way?
- Religion
- Occupation

As can be seen above, the two questions related to the ability of the prisoner to sing or play an instrument, were specifically aimed at finding material worthy of a *Völkerschau* within the prisoner population. Other information in the Personalbogen included details about the place, date, duration and content of the recording, the file name assigned to it, the names of the people responsible for the recording, and a section with comments on the 'Quality of Voice' of the speaker, both according to the language specialist (Brandl, in the case of British dialects) and according to the Commissioner (Doegen).

4.7.5 Data collection

4.7.5.1 For anthropological and ethnomusicological studies

After the selection of prisoners was completed, and the paper documentation prepared, scientists proceeded to take numerous anthropometric measurements and indices of the informants and note down their somatoscopic features. The data from the measurements was then averaged or plotted on a graph for statistical calculations that would then indicate the basic 'racial elements' and the 'racial make-up' of the ethnic group analysed. Whenever possible, a photographer took pictures of the prisoners, who had to stand naked on a podium while these procedures took place; informants also had to have a plaster cast taken of their face (Evans, 2010a; Lange, 2010; 2011).

4.7.5.2 For linguistic studies

Once the paperwork was filled in (i.e. the *Personalbogen*) and the handwritten version of text to be read by the prisoner in his own dialect was completed, the speaker would read through the text, in our case this is the parable of the Prodigal Son, while the language expert transcribed this first run in phonetic notation. The speaker read his prompt into the gramophone's funnel which was fixed into a partition wall, with the operator sitting behind it (Scheer, 2010; Mahrenholz, 2011). As was mentioned above, the prisoners were encouraged to practice reading their text before they could be recorded, so that the final recorded version and its phonetic transcription would match the initial transcription. Although the purpose of the archive was to preserve the voices of the many people in the POW camps, it was also felt that an accurate phonetic transcription was of an utmost importance if the recording was to be useful for scientific study (Scheer, 2010).

If this process seems somewhat counterintuitive, we should remind ourselves of a crucial factor affecting the recording procedures and its transcription, which, as we have seen, was paramount to the German and Austrian researchers. As Brandl preferred the use of the gramophone, this implied, as was explained above, that playback was possible only after the master copy had already been pressed and additional copies from the master disc negative were made. Why, then, not make a phonetic transcription only after the vinyl copy was pressed, as was done for music recordings, rather than before and after? The answer, as confirmed by Brandl himself in the Introduction of *Englische Dialekte* (1926) and in his *Zwischen Inn und Themse* (1936), lay in the fact that the Austrian linguist relied very heavily on the observation of mouth and lip movements for his transcriptions; the recording was then only consulted for confirmation of what he had already noted or for some phonetic features he might have initially missed. Additional explanation is provided by other accounts of the methodology employed by the Austrian Anglicist and dating back to his first dialectal studies in Scotland, included, again in Brandl's 1936 biography, and in Doegen's *Unter fremden Völkern* (1925). The key feature of his technique consisted of making the speaker repeat a text or a series sentences quite a few times, 'until I could say them myself and write them down in precise phonetic notation' (Doegen, 1936 in Scheer, 2010: 294). As such, the observation of the 'live' speech act was crucial. This would then explain why discrepancies between the first unrecorded readings of the text and the version then pressed onto the master copy were not very well received, and why it was felt that a good interviewee was one that was able to read his text a few times in exactly the same way. Thus, despite the undoubted advance that the new gramophone technology offered, a careful listening of the recording was not the only way in which Brandl ensured the success of a recording session. As will be explained in later sections, this is a practice Brandl is likely to have retained from his lessons with Henry Sweet. However, this repetition process, as will be illustrated below, was routinely followed by other researchers as part of the methodology of linguistic research in German POW camps. In his *Zwischen Inn und Themse* (1936), Brandl lamented the fact that his interviewees became tired or bored of the tedious task, which was rendered even more tiresome by the fact that, effectively, the pronunciation changed with each repetition. In the case of one particular Scottish speaker, Brandl reported that after an apparently very necessary pause for liquor, the speaker lost all interest with the task at hand. The appearance of the gramophone somewhat shortened this process, as being able to record a speaker straight away meant that the variation in pronunciation would technically be no longer an issue; as we have discussed, however, this was not the case. Indeed, a significant element of repetition was still in place also during his own POW camps research, as reported in the following quote by Brandl himself: 'Good lads, how unflaggingly have you repeated your couple of lines until they were incorporated into the museum of linguistics!' (Brandl, 1925 in Mahrenholz, 2011: 204).

In addition to phonetic transcriptions, phonetic features and the exact production of phonemes was also captured by the use of palatograms, which were mostly taken by Alfred Doegen, a dentist, who was Wilhelm's brother, and by X-rays of the larynx (Doegen, 1925; Mahrenholz, 2011).

4.7.6 Practicality, authenticity, quality

These new kinds of recording and playback equipment demanded that a few practical issues be settled in order to make sure the recordings were as successful and as acoustically high-quality as possible. Anthropologists, ethnologists, musicologists and linguists needed to make decisions mainly concerning the placement of the recording equipment, the timing of the transcriptions, and the modality for the selection of candidates to enhance and ensure 'authenticity'. Unfortunately, the need to compromise between practicality, quality and authenticity meant that, especially in the case of the recordings with which this Study is concerned, the latter was often sacrificed in ways that we as linguists today would be tempted consider highly questionable, if not downright inappropriate (especially with regards to the issues posed by Observer's Paradox, as will be shown below).

The practical issues facing a dialectologist wanting to record a speaker of a Yorkshire dialect in 1916 were not too dissimilar to those faced by a sociolinguist or a phonetician involved in the same endeavour today. The recording or pressing session needed to be free of echo, a typical problem with indoor locations, or other environmental noises that might affect the final acoustic quality of the cylinder or disc, and protected from the elements, which an outdoor setting could obviously not guarantee. Different researchers tackled this dilemma in different ways. Some, like the Austrian anthropologist Felix von Luschan, were advocates of the need to record within a sheltered indoor environment, while others preferred the opposite solution, like Rudolph Pöch, who wanted to avoid the echo effect (Scheer, 2010). Brandl preferred recording his interviewees indoors, either in his London flat, before his participation in the Phonographic Commission project, or in those barracks inside the camps that had been specifically appointed and equipped for audio recording.

Aside from the practical aspects of audio recording, however, the pursuit of ‘authenticity’ dominated the research in the POW camps, almost obsessively. If the quality of a recording session could be more or less ensured by way of securing and employing the best possible recording technology and recording environment for the task at hand, obtaining, and effectively, producing an ‘authentic’ sample was not as straightforward. As mentioned above, the selection of candidates for anthropological, ethnomusicological or linguistic study was crucial for the successful collection of authentic data. Here, a thought process not too dissimilar from the *a priori* analysis of Native American languages (i.e. the grammatical theory defines what the language data should look like, instead of the opposite), was in place. Rather than collecting samples and interviewing individuals for the purpose of discovering who or what could be deemed as ‘typical’ within an ethnic group, the samples and prisoners were specifically selected so that they would fit and confirm an *a priori* preconception of ‘authenticity’ for that specific ethnic group, a process we today would not hesitate to call ‘ethnic stereotyping’ or even ‘racial profiling’. As will be seen below, this was not only specific to the kind of research that was carried out in POW camps. Similarly, the issue of representativity also had an impact on the POW research projects. As Lange (2010) pointed out, the prisoners represented only a very small portion of a particular ethnic group, having already been selected as being physically fit for war. This obviously meant that the samples were not selected at random, which would have guaranteed reliable results and their statistical validity. Moreover, as has just been noted, the prisoners were also ‘screened’ a second time to find interviewees that would fit the pre-established ‘racial traits’, which eliminated any pretence of random selection.

In the case of linguistic recordings, as was mentioned above, the repetition of the same text or strings of sentences was key in order to achieve both quality and ‘authenticity’. Paradoxically, however, it was clear that such an approach would only be partially successful in capturing an ‘authentic’ dialectal sample. However, as Scheer (2010) illustrated, this was something accepted as a lesser-of-two-evils situation where, again, practicality and authenticity clashed, if they were not even mutually exclusive. As was described above, repetition was required to make sure that the recorded version matched the phonetic notation obtained from the first unrecorded trial reading, ‘making the recording even more a staged performance and far less the fixation of ‘natural speech’ which the technology was supposed to provide’ (Scheer, 2010: 306). Impromptu variations were not well received. Again, this is another example of an *a priori* process in place in the POW camps studies, and in this case, the speech sample was constrained by the transcription, and not the opposite.

4.7.7 Other practical challenges

Although typified as the ideal *milieu* for scientific research, the POW camps presented additional practical challenges to those related to the features of recording equipment. More often than not, the prisoners were less than willing to participate in the project, and often had to be bribed with cigarettes, other desirable items, or exemption from camp duties. Language barriers were obviously another significant challenge for researchers, which dictated the need to rely on interpreters. Verifying the truthfulness of the prisoners’ statements with regards to their ethnic origin was also not an easy task, as they often gave inaccurate or intentionally misleading information to sabotage the project. Finally, the conditions in which researchers had to operate were far from ideal, as the camps’ barracks presented their own set of practical issues, such as, for example, inadequate lighting. Moreover, in many cases there was simply not enough equipment available to meet the demands of the scientists. (Lange, 2010; Scheer, Marchetti and Johler, 2010)

4.8. Anthropological studies

4.8.1 German attitudes towards the 'racial other'

As it has been noted, the great array of nationalities present in the POW camps in Germany, meant that anthropologists, and researchers of other fields, had unprecedented access to anthropological 'material' that they would not have been able to reach otherwise. Their research was also significantly facilitated by the newfound support of governmental and military authorities, which helped secure a certain financial stability and legitimised the subject. As will be explained below, POW anthropological studies mainly focused on the physical and behavioural comparison of prisoners of different ethnicities. On one hand, such comparisons were motivated by the scientific desire to observe, describe and catalogue; on the other hand, with the surge of anti-humanist views, racially-based observations between populations served the purposes of the war propaganda against the 'racial other', delegitimizing the enemy and reinforcing the idea of the racial superiority of the German people. Thus, through their studies in the POW camps, German anthropologists played a crucial role in the affirmation of the *völkisch* ideology during the First World War.

4.8.2 *Völkerschauen*

The fascination with ethnographic shows, or *Völkerschauen*, so enthusiastically acclaimed by Rudolph Pöch in earlier sections, had already begun in Germany in the last two decades of the nineteenth century, although some 'performances' by non-European people had already taken place in Germany by the eighteenth century. These 'shows' or displays, which were generally performed in zoos or panopticons, consisted of dances, folk songs, music or other forms of entertainment allegedly representative of a particular ethnic group (Zimmerman, 2001). The *Völkerschauen* were extremely popular among the public, and thus fairly lucrative for the organisers, too. Chief among them was the German Carl Hagenback, who recognised the enormous potential of these exhibitions and began promoting them across the country. As Zimmerman (2001) explained, anthropologists also often attended the shows, as they were a great opportunity to come in contact with non-European populations; however, their participation also served to guarantee the legitimacy and credibility of the performances, and to vouch for their scientific value. The *Völkerschauen* played on the dichotomy between *Naturvölker* and *Kulturvölker,* that is, between the supposedly primitive, 'unspoilt' and uncultured people, and the culturally-developed populations who, unlike their counterparts, possessed writing, history and civilization. As Zimmerman (2001) pointed out, there was a clear expectation that the natives of particular parts of the world, especially the African and Asian continents, or particular groups, such as the Native American populations, would be *Naturvölker*, and efforts were made to prove the truthfulness of this belief: the pursuit of 'authenticity' and of 'authentic material' emerges again. It was often the case that details about an individual that posed a challenge to this theoretical stand, or that could no longer be considered 'uncorrupted' (for example, Zimmerman quotes the example of a group of Sudanese performers that, to the great disappointment of the anthropologists, were able to speak Arabic and had converted to Islam or Christianity), were simply ignored and deemed uninteresting (Zimmerman, 2001). The focus was however on obtaining various physical measurements (of body parts, colour of the hair, tone of voice, etc.), taking photographs, or even making cast replicas of the particular body features of the performers. Another significant example of the strive of the anthropologists to construct and validate *Naturvölker*-like parameters is again reported by Zimmerman (2001): the refusal of an Inuit woman to have her measurements taken, which resulted in fits of rage, was reinterpreted as no more than a further proof of her *Naturvölk*-like quality, and her reaction a primitive ‘shamanistic state’ (Zimmerman, 2001: 23). More often than not, as it was evident that performers invited to take part in the *Völkerschauen* were quite far from the idealised *Naturvölker* that they were supposed to represent and incarnate, the organisers of the performances had to either present them with a script to follow during the show, or even buy ‘typical’ manufacts associated with their ‘culture’ (Zimmerman, 2001).

The *Völkerschauen* in POW camps were not particularly different from those described above, and consisted in musical and singing exhibitions performed by the prisoners and both recorded and photographed by the researchers, either outside or in dedicated barracks. These were obviously also accompanied by physical measurements and other photographic or phonographic data. As Scheer (2010) discussed, POW *Völkerschauen* were supposedly a source of great entertainment for all those involved, especially according to Felix van Luschan, who also believed that playing the performances back to the prisoners would entice them to carry on performing.

4.8.3 From Humanism to Anti-humanism

The *Völkerschauen* were probably an initial indication of the shift from Humanism and liberalism to Anti-humanism and *Rassenkunde* occurring in Germany from the beginning of the twentieth century. They were also symptoms of another change of focus and intent within the field: from philosophical anthropology to phsysical anthropology (Lange, 2010). Zimmerman (2001) and Evans (2010a; 2010b) argued that the breakout of the Great War accelerated this transition. This was due, amongst other factors, to the consolidation of new nationalist ideologies, the financial costs associated with the wartime efforts, and the obvious restrictions to international mobility and diplomatic relations and consequently to international cooperation in anthropological research, the characteristics and social dynamics of the POW camp *milieu*. In other words, as Evans (2010a) summarised it, this shift was due to a ‘critical combination of ideologies and circumstances' (Evans, 2010a: 132).

The views championed by eminent figures of liberal German anthropology, chief among them Rudolf Virchow, strongly opposed the idea that the concepts of race, nation and *Volk* could be merged together and be co-dependent. In other words, they rejected the idea that cultural or national identities could be related to factors such as physical or racial typologies. In a way, the liberal pre-war German anthropologists were a voice arguing against the existence of physical or racial distinction amongst the European people (Evans, 2010a). This 'unitary' vision was however disrupted by the breakout of the war, which initiated and fomented the spirits of patriotism and nationalism, and which led in turn to the merging of the concepts of race and nation, and the creation of the 'racial other' (Evans 2010a: 132).

Conducting research in the camps and the camp set-up itself facilitated this new state of affairs for a variety of reasons, as Evans (2010a) went on to explain. Firstly, as the financial and practical support for the camp studies came largely from the government and the military, the anthropologists and their field of research were now in a new and long-awaited position of favour and stability. Inevitably, such a close collaboration with the governmental authorities saturated the POW studies with surges of nationalism and patriotism among the anthropologists' community. However, as Evans (2010a) noted, members of the anthropological community, as public figures, were under a certain pressure to conform to the general mood of national pride, or risk being discredited, something that Evans termed 'patriotic paranoia' (Evans, 2010a: 111). Another factor that encouraged the creation of new anthropological ideologies, was that the camp set-up pushed the anthropologists to think in terms of marked oppositions, between researchers and research 'objects', between captors and captives (Evans, 2010a). Thus, in this context, the correlation between race, nation and *Volk* was strengthened in the minds of the anthropologists, who saw in the camps' intrinsic oppositions and the power relations it created another fundamental dichotomy: that between Germans and non-Germans, or between German and the 'racial others' (Evans, 2010a). Thus, body measurements, photographs, voice and music recordings, all contributed to draw attention to the differences, physical and cultural, of the various ethnicities, and of their national identities (Scheer, 2010). Doegen, too, sought to discuss the differences amongst the various nations represented in the camps, while emphasising the links between their national identity and supposedly 'typical' behavioural traits, as in the following extract from *Unter fremden Völkern*:

> [f]rom the Belgian people the hot-blooded, easily inflamed Walloons of the French tongue and down-to-earth Flemish […] fiery, sentimental Serbs […] dull but good-natured Russians […] magnificent Estonians […] honorable Finns […] conscientious Mordvins [...] (Doegen, 1925: 13 in Scheer, 2010: 290).

The war itself was reinterpreted as a clash of races, not just military troops, and this was especially evident in the critique of the use of colonial troops by the Entente powers, a key topic in wartime propaganda. Doegen himself stated that 'Germany did not fight against a world of armies [...] but rather against a world of races' (Doegen, 1925 in Jones, 2011: 179) Asian and especially African troops were labelled as 'savage', 'barbaric', 'uncivilized', 'black horror', 'inferior', and accused of the most inhumane atrocities. In line with the imagery of the *Völkerschauen,* the appearance of colonial troops on European soil, especially those from the African territories, was also described as 'an anthropological show of uncivilized or not sufficiently civilized bands and hordes' (Koller, 2011: 140). On printed media, the colonial armies were often portrayed as beasts or with highly caricatured physical features or other stereotypical traits. This was aimed at creating an aura of fear surrounding the Entente colonial troops and at presenting an image of Germany as the victim in the war while discrediting the Entente powers for resorting to the deployment of those armies (Jones, 2011; Jarboe, 2014). As Koller (2011) explained, the employment of colonial troops by the British and the French was ‘explicitly condemned as a moral crime against European civilization’ (Koller, 2011: 139), both for the alleged atrocities perpetrated by these troops on European soil, and for the possibility that this military empowerment might subvert the white colonial powers across the world (Koller, 2011).

4.9 Austrian efforts

German anthropologists were not the only ones discovering the potential for academic research available in POW camps, nor were they the first to do so. Anthropologists and ethnomusicologists of the Austro-Hungarian Empire had already started taking advantage of the camps’ many opportunities for scientific study by the time the Phonographic Commission began recording in German POW camps in 1915. A student of Felix van Luschan, Rudolph Pöch gave impetus to the POW camps project in Austria (and, indirectly, in Germany) in the summer of 1915, with support and funding from the Viennese Anthropological Society, the *Kaiserliche Akademie der Wissenschaften* (Imperial Academy of Sciences) and the *Reichskriegsministerium* (Imperial War Ministry) in Vienna (Berner, 2010; Lange, 2010). Austrian anthropologists too relied heavily on body measurements, and those taken in the Austrian project were meticulously gathered. As Lange (2010) noted, Pöch employed 32 indices of measurements, following those outlined by Rudolph Martin’s volume *Lehrbuch für Anthropologie in systematischer Darstellung* (1914). These consisted of entries such as ‘length of the right arm’, ‘length of the right leg’, ‘height’, ‘width of the zygomatic arch’, but also less obviously measurable features, so-called ‘somatoscopic’ features, like the colour of the eyes or of the hair. The Austrian project also included photographic material, as well as audio and film recordings of prisoners performing in traditional dance routines, However, Pöch soon discontinued the audio-visual side of the project to focus on his physical anthropology research instead (Berner, 2010; Lange, 2010). The merging of physical and mental or behavioural traits was a feature of Pöch’s framework as well, although he believed that *Völk* and race ought to be kept apart (Berner, 2010). At first, as Berner (2010) explained, Pöch’s focus was on the study of populations of the Russian Empire, as he believed that they were doomed to oblivion, due to the increasing influence of Tsarist Russia. However, due to his past research experiences in India, Oceania and the African continent, he extended the scope of his investigation to include, albeit to a lesser extent than in the Berlin project, non-European prisoners, too.

4.10 Other fields of research

As mentioned above, POW camps proved to be a formidable source of research material for scholars of various disciplines. In addition to physical anthropological and linguistic studies of prisoners, the camps offered study opportunities for ethnomusicologists as well. The appearance of recording instrumentation, especially the phonograph, had a great impact on the development of the discipline. Ethnomusicologists too were interested in recording ‘typical’ examples of music from various ethnicities, a task that, as we will see below, was aided by the cooperation with physical anthropologists.

As suggested by Pöch, the Viennese *Kaiserliche Akademie der Wissenschaften* appointed a musicologist expert to take advantage of the wealth of folk music that could potentially be uncovered in the POW camps. Thus, Robert Lach, an Austrian scholar of comparative musicology, began collecting musical data in the summer of 1916, relieving Pöch of that duty (Scheer, 2010). As was the case for the Austrian anthropologist, Lach initially concentrated his efforts on gathering data from the populations under the sphere of influence of the Russian Empire (Scheer, 2010). Lach was not a fieldworker, nor he had any training in that regard, or on how to use recording equipment; thus, as Scheer

(2010) explained, despite being the musicologist expert, he had to rely on the help of others to operate the phonograph. Lach’s expertise, however, lay in musical development research across various world cultures and historical periods, arranged in a hierarchical order according to the level of development (Scheer, 2010). For his studies in POW camps, Lach could count on the support of Pöch and his team, particularly with regards to the selection of ‘typical’ individuals of a specific ethnic group, as this had already been taken care of. This undoubtedly facilitated Lach’s task, especially if we keep in mind the difficulties generally encountered by anthropologist in establishing the true ethnic identity of uncooperative interviewees. In addition, as Scheer (2010) noted, Lach could also complement his musicological observations by integrating in his analysis those already put forward by physical anthropology, an arrangement that Pöch also considered to be mutually beneficial. The collaboration with Pöch and his interest in physical anthropology had an impact on his career and on the direction of his research path. Despite these affiliations, however, in his discussion on developmental hierarchies in comparative musicology he did not support the idea that musical development could be linked to race, nation or *Volk,* maintaining a liberal approach. In his view, the variation in the observable levels of music development was the reasons for the similarities or differences found in music typologies across different cultures, rather than their racial make-up (Scheer, 2010). Although his research in the POW camps did not produce a particularly high volume of recordings, the material he could acquire from them and his effort to transcribe in musical notation what had been recorded, fuelled his post-war career and his academic success (Scheer, 2010). In German POW camps, music recordings for musicology studies were made by Georg Schünemann, who was appointed by Carl Stumpf, the chairman of the Phonographic Commission. Unlike Lach, Schünemann was quite prolific, making more than a thousand recordings between 1916 and 1918 as part of Doegen's team. The material he gathered was not limited to the European populations, but instead also included some samples from the African and Asian continents. Another difference between Lach and Schünemann, was that the latter was not as interested in comparative musicology as his counterpart scholar, and distanced himself from the evolutionary approach in music evaluation (Scheer, 2010).

4.11 Linguistic-related influences

The linguistic works and methodologies of Doegen and Brandl have been undoubtedly shaped by the developments in the field of phonetic study that took place the second half of the nineteenth century in England, France and Germany. The rise of experimental Phonetics, the birth of the International Phonetic Alphabet, the collaboration with Henry Sweet and the appearance of phonetic transcription in language classrooms are all factors that are clearly identifiable in Doegen and Brandl's linguistic contributions to the *Berliner Lautarchiv* project. This section aims to contribute to the description of the contextual background of the *Lautarchiv* by discussing the linguistic theories (and their practical applications) which have so heavily influenced the two linguists.

4.11.1 Brandl and Sweet

Brandl too, like Doegen, had the chance of meeting and being instructed by Henry Sweet; he described his encounters with the English phonetician in his autobiography *Zwischen Inn und Themse: Lebensbeobachtungen eines Anglisten: Alt-Tirol, England, Berlin* (1936). From comments in *Zwischen Inn und Themse* and in Brandl's *in memoriam* piece published after Sweet's death in a volume of the *Archiv für das Studium der neuren Sprachen und Literaturen* (1913), it emerges that the relationship between Brandl and Sweet went beyond a purely academic affiliation. Brandl had the chance to know the great English phonetician on a personal level, and his deep admiration for him clearly transpires. Their first encounters at Sweet's house in Hampstead, when Brandl was aged

24, left a lasting impression on the Austrian linguist, although not right from the start. He was first introduced to Sweet by Julius Zupitza, a German philologist and Chair of Philology at the Friedrichs-Willhelms-Universität before Brandl. The first encounter left Brandl rather unimpressed: Sweet had apparently been so taciturn that no conversation had been possible. A week later at the British Museum, Brandl came across the English philologist and co-creator of the Oxford English Dictionary, Frederick James Furnivall, who encouraged him to visit Sweet again. Only many years later Brandl found out the reason for this second attempt. Furnivall had expressed his concerns about Brandl's English language skills to Sweet saying that '[Brandl] speaks such a terrible English that he will never obtain a professorship' (Brandl, 1936: 137 - translation from German). As Utz (2006) observed, this was fairly common among German Anglicists of the time, whose academic training largely neglected English speaking skills.

Sweet then accepted to give Brandl private tutorials in Phonetics, and agreed to meet his new student every Tuesday evening during wintertime. The structure of the tutorials was as follows: first, an hour of tongue exercises, then a transcription exercise followed by a reading exercise, repeated until perfect pronunciation was observed, and finally, a comparison of Brandl's transcription with that of Sweet's. The evening would end with cigarettes and Hungarian wine. After a few weeks, Brandl was able to verify the effectiveness of this approach, and as he reported in his autobiography (1936) his English speaking skills had improved. The Austrian linguist was happy to learn that Furnivall finally found his English comprehensible. Brandl too recognized the influence that Sweet had in his career and in his teaching method, and in his autobiography (1936) he even stated that '[Sweet] made [his] existence as an Anglicist possible' (Brandl, 1936: 137 - translation from German). As was already mentioned, these encounters have also shaped Brandl's methodology for phonetic transcription in his subsequent research of Scottish dialects and for the Berliner Lautarchiv project as well. This is especially observable in

Brandl's reliance on repetition and on the need to imitate perfectly the accent he was attempting to transcribe, before phonetic notation could take place.

Nonetheless, Brandl clearly attributed great value to those evening spent smoking cigarettes, drinking Hungarian wine, and often discussing English poetry in Hampstead with Sweet. In his *in memoriam* article, he wrote that those 'cigarette evenings' had been 'more valuable to [him] than many lectures at university could have been' (Brandl, 1913: 9 - translation from German). As mentioned above, these lesson also had an impact on Brandl's methodology for his study on the Scottish dialects and for his work in the POW camps. The fact that Brandl asked speakers to repeat their utterances until he could pronounce the same sounds himself, indicates that he relied not just on his ear (and, as a last resort, on the gramophone) for his transcriptions and for the correct recognition of a particular speech sound. Instead, by attempting to recreate the sound heard, he was able to pay close attention to, and identify, the articulatory movements required to reproduce it, a skill acquired during his many hours of 'tongue gymnastics' with Sweet; the last step was thus matching the mouth movement to the sound in its phonemic rendition. In this process, Sweet's emphasis on the need for adequate articulatory knowledge and production of English sounds is clearly recognizable in Brandl's approach, and was echoed by other international figures, such as Jespersen in Denmark and Klinghardt in Germany.

Those winter evenings were not only spent acquiring an 'acceptable' English pronunciation through hours of tongue exercises and phonetic transcriptions, and Brandl also explained that Sweet introduced him to Wordsworth, whose name, he confessed, was completely unknown to him until then, and taught him about the poetry of Shelley. The two linguists also conversed about Middle English poetry, as Sweet often discussed with him some of the poems he had transcribed phonetically. Middle English philology, and

English philology more in general were obviously areas of interest they had in common, given Brandl's subsequent career as Chair of Philology of various German universities (including Berlin). Moreover, Brandl's post-doctoral dissertation, which brought him to England in the first place and which he was preparing at the same time as his meetings with Sweet, was an edited version of *Thomas of Erceldoune* (1880), as suggested by Julius Zupitza (Utz, 2006).

The relationship on a personal level carried on even after Brandl's stay at Hampstead, through epistolary exchanges and holiday visits. Sweet invited him to spend a couple of weeks with him in the Moors and in the South Downs, days which Brandl defined as 'intellectually rich' (Brandl, 1913: 9). Later, the Austrian scholar had the chance to repay Sweet for his hospitality by having him as a guest in Tirol in 1884, where the English phonetician also taught him to fish with artificial flies. This friendship meant that Brandl was also able to observe the peculiarities of Sweet's character and temperament, which sometimes, he said, could be 'the opposite of his name!' (Brandl, 1913: 11), especially towards colleagues at Oxford. The German Anglicist also recounted the disappointment and bitterness in Sweet's words to him, when he was denied the Chair of English Language and Literature at Oxford in 1885, in favour of somebody younger. Deeply wounded, Sweet sarcastically remarked that 'such happiness would have been too great for a man like me' (Brandl, 1913: 11 - translation from German). As Brandl (1913) and Howatt and Widdowson (2004) reported, this let-down caused Sweet to break any ties with colleagues at Oxford, including Furnivall and Zupitza. However, as Wrenn (1946) explained in his Presidential Address to the Philological Society, there was no malice against Sweet, and electors at Oxford were simply not aware of Sweet's intentions and desire to take the post, as the English phonetician had not revealed them to any of his friends or colleagues. 'He just took it for granted that the Oxford electors, being intelligent men, would appoint the obviously right man' (Wrenn, 1946: 184).

Sweet was often taciturn, being able to sit for hours in silence, Brandl (1913) recalled, listening carefully to the pronunciation of the people around him; but whenever he was involved in conversations he found interesting, and he had the most disparate interests, or he was in the company of people he appreciated, his joviality, humour and enthusiasm came alive. As Wyld (1913) wrote in the other in memoriam piece in *Archiv für das Studium der neuren Sprachen und Literaturen,*

> ...there were few topics which did not interest him [...]. He had not the unfortunate limitations of interest which often dehumanise scholars, and cut them off from everything outside the range of their own immediate studies (Wyld, 1913: 2)

4.12 The rise of Linguistics as a science-based discipline

As noted above, the human ear, with or without the aid of the gramophone or phonograph recordings, was not the only tools at Brandl's disposal to identify sounds. The move from a philosophical and mainly theoretical approach to a more scientific one, as illustrated above, characterised anthropological studies in Germany, Austria, and the rest of Europe. Such a shift was also reflected in the field of linguistic studies, as has been discussed in the previous chapter. Galeazzi (2001) indeed stated that,

> [e]n utilisant en phonétique les méthodes des ces dernières, le courant experimental de plus en plus actif vers la fin du siècle, croyait faire de la Linguistique une science exacte, rigoreuse, du même type que les sciences naturelles (Gaelazzi, 2001: 1486).

The adoption of a scientific base in linguistic study was certainly welcome. Sweet was especially pleased, and in 1897 commented in his usual caustic manner that the lack of a scientific approach was becoming 'more indigestible every year' (Sweet, 1897 in Galazzi, 2001: 1486).

4.13 Phonetics for language teaching: the Reform Movement

As was mentioned in earlier sections, in 1904, Doegen presented his dissertation titled *Die Verwendung der Phonetik im Englischen Anfangsunterricht* (The Use of Phonetics in Elementary English Instruction). Five years later, after he had started a career in modern language teaching (English, German and French) in various gymnasia in Berlin, he began releasing his *Doegens Unterrichtshefte für die selbständige Erlernung fremder Sprachen mit Hilfe der Lautschrift und der Sprechmaschine* (*Doegen's Instruction Booklets for the Independent Learning of Foreign Languages with the Help of Phonetic Transcriptions and the Talking Machine)* from 1909, which also included recordings of native speakers of English, German and French reading literary passages. The success of the series and its application in the language classroom was enormous and, as reported by Mahrenholz (2003), it even earned him a silver medal at the Brussels World Exposition in 1910. Such accomplishments prompted him to put forward his plans for the creation of the Phonographic Commission, as Doegen also highlighted the didactic value that the recordings would have (Doegen, 1925).

Brandl, whose research was not as focused on the teaching of modern languages as Doegen's was, had nonetheless the opportunity to appreciate the benefits of the use and the study of articulatory phonetic and of phonetic transcription during his private English lessons with Henry Sweet between 1879 and 1880, as was described above. Brandl's and Doegen's approaches are the result of the radical change that characterised the teaching of Modern Languages in the last two decades of the nineteenth century and at the beginning of the 20th century. This was in turn a by-product of the 'révolution copernicienne qui consistait à affirmer la primauté de l'apprentissage oral sur l'écrit dominant depuis toujours' (Galeazzi, 2001: 1491). As MacMahon (2001) noted, a break with the traditional way of teaching modern languages was needed, despite the opposition of many schoolteachers, as this model was based on the teaching of Latin and Greek, via the 'Grammar-Translation method' (MacMahon, 2001). Such an approach, that is, applying the analytical framework of the Classical languages to modern languages, was not too dissimilar from what we have already observed in some instances of Missionary Linguistics.

A great impetus for the publication of works specifically concerned with the application of phonetic to modern language teaching was the birth of *Dhi Fonètik Tîtcerz' Asóciécon* in 1886 which, as discussed in earlier section, became the International Phonetic Association in 1897. The eponymous journal, later renamed *Le Maître Phonétique* in 1889 and *Journal of the International Phonetic Association* in 1972, was published in phonetic script, until 1970. However, as MacMahon (2001) observed, the first years of the Association were characterised by a degree of experimentation with phonetic notation, so that a variety of systems of transcription co-existed on the pages of the journal, until the IPA emerged.

The driving and most influential figures of the association were Paul Passy (1859-1940), Wilhelm Viëtor (1850-1918) and Henry Sweet, who were united in the stern critique of the contemporary teaching methods of modern languages, and in expressing the need to bring back the focus in the classroom onto the spoken, current language. A new methodology was called for. Two works in particular paved the way for what was to become the 'Phonetic Method': Viëtor's publication *Der Sprachunterricht muss umkehren!* and Felix Franke's successful *Die praktische Spracherlernung auf Grund der Psychologie und der Physiologie der Sprache dargestellt* of 1884. Both authors, and other supporters of the Reform Movement emphasised the need to drastically reduce the amount of grammatical training in favour of explicit phonetic instruction (MacMahon, 2001). Their intentions are best summarised by the title of a pamphlet, created by Viëtor in 1882, which formally initiated the Reform Movement: *Der Sprachunterricht muss umkehren!* (Language Teaching must start afresh!) (Howatt and Widdowson 2004). Keywords such as *‘gesprochenen’* and *‘praktische’* were undoubtedly exemplificative of the Reform Movement and its objectives and principles, which Howatt and Widdowson (2004) summarised as in the following: ‘the primacy of speech, the centrality of the connected text as the kernel of the teaching-learning process, and the absolute priority of an oral classroom methodology’ (Howatt and Widdowson, 2004: 189). The application of these principles in the language classrooms, however, had its challenges. The most controversial aspect for teachers was the use of phonetic notation which, while enthusiastically adopted by many, it was criticised by others as a hindrance (MacMahon, 2001; Howatt and Widdowson, 2004). By the time Viëtor’s pamphlet had been published in 1882, the phonograph had only made its appearance five years earlier, and the gramophone had yet to be patented by Berliner. This meant that the only examples of spoken language that students could experience were provided by their teachers. As the focus on spoken language was a crucial aspect in the manifesto of the Reform Movement, the methodology with which this requirement was met in the classroom was very likely to have prompted Doegen to record spoken examples of modern languages for teaching and learning purposes. Finally, finding the balance between ‘real’ texts and texts exhibiting the grammar points to be taught also required careful consideration. As Howatt and Widdowson (2004) put it,

> [t]he key question was whether they should be selected as real examples of the foreign language in use, or whether they should be specially constructed with the new grammar ‘planted’ in them in advance (Howatt and Widdowson, 2004: 190).

The balance, in Viëtor’s view, lay in the use of ‘authentic’ texts, but ones that were intended for children (Howatt and Widdowson, 2004). In his *Practical Study,* published in 1899, Sweet dedicated a chapter to this issue. The first requisite for suitable texts, Sweet explained, was connectedness, ‘so as to establish as many associations as possible in the mind of the learner between each word and its context’ (Sweet, 1899: 169). The texts should not contain archaic forms or words (in which case, standalone sentences might be preferable), slang, or use idiomatic expression when a non-idiomatic one would still be grammatical and carry the same meaning.

Proponents of the Phonetic Method had in Henry Sweet a key advocate who, in 1885, published the seminal *Elementarbuch des gesprochenen Englisch.* In 1890, Sweet also put forward the *Primer of Spoken English* which, with few additions, was essentially the English version of the *Elementarbuch*. It is certainly not unreasonable to imagine that Sweet might have had some his private German students in mind, including Brandl himself, when laying out the work. Indeed, as MacMahon (2001) noted, it was those teaching experiences, of which we have seen glimpses above, which shaped the *Elementarbuch*. Sweet’s textbook ‘turne[d] the learning of English on its head’ (MacMahon, 2001: 1588) by completely breaking with the tradition of grammar-and-translation-centred books for language instruction. The first immediately noticeable detachment with traditional works is the use of Sweet’s Broad Romic throughout, with the exception of those portions of text in German. This was because, as Sweet explained in the Preface, traditional orthography only becomes needed once a student has already mastered everyday language through its phonetic form. To make the intonation patterns immediately evident and aid their learning, Sweet did not follow the language’s usual word-division, but instead divided his texts to indicate where the places in which the stress would fall within a sentence. For example, the phrase will you hand me down that hammer and the box of nails? – they’re on the shelf just above your head’ was segmented as ‘wilju hændmijdaunðæt hæmə ənðə boksəv neilz? -ðeəronðə ʃelf ʤestəbavjo hed’ (Sweet, 1885: 16). He abandoned the rhythmic grouping notation in *Primer of Spoken English* (1890a).

However, as he confessed, ‘I am still unable to decide which method is preferable’ (Sweet, 1890a: x) Sample sentences, or ‘kə loukwiəl sentənsiz’ such as the ones just presented, were chosen insofar they represented examples of everyday language in everyday situations and common idiomatic expressions, rather than the nonsensical or hardly useful phrases commonly found in traditional handbooks. The *Elementarbuch* also included dialogues, and a selection of texts, or di skripʃənz, on nature by Thomas Henry Huxley, on anthropological matters (food, clothes, houses, language, etc.) by Edward Burnett Tylor, the poem *I Remember, I Remember* and an extract from the story *A Gypsy Party* (renamed ðə pikinik), both by the humourist Thomas Hood. The texts were re-adapted by Sweet, who modified them so that they would resemble spoken language more closely (Atherton, 1996). What is significant about the choice and order of text and other examples in Sweet’s work is the rationale behind them. Unlike in traditional language handbooks, which he criticized, grammatical remarks are present in the book, but they are kept to the essential topics, such as noun, pronoun and verb inflections, verb tenses and modality, but with no trace of grammar exercises. Sweet dedicated far larger sections to stress, intonation, quantity, consonants and vowels.

4.14 *Fin-de-siècle* dialectology: a brief sketch

To help situate the *Berliner Lautarchiv* British transcriptions within the wider contextual background, an account of the wider field of dialect studies from the second half of the nineteenth century onwards cannot be omitted, although Doegen and Brandl’s work on dialects within the *Berliner Lautarchiv* was prompted by profoundly different ideological and academic motives. Morpurgo Davies (2003) noted how the last quarter of the nineteenth century saw ‘an outburst of work in dialectology’ across the continent (Morpurgo Davies, 2003: 289). Works on dialects are obviously not an innovation of that period, but as Chambers and Trudgill (1998) noted, it was only then that dialect studies began to be based on systematic linguistic observations: '[u]ntil the latter half of the nineteenth century, characterisations of dialect areas were intuitive and casual' (Chambers and Trudgill, 1998: 14). The renewed interest in dialects and their systematic study in this period was the result of the realisation that such an 'intuitive' approach was obsolete and unsuitable, especially in comparison to the parallel progress of other areas of linguistic studies, including philology and the rise of what would later be known as experimental phonetics (Chambers and Trudgill, 1998). Another impetus came from the Neogrammarians, or *Junggrammatiker*, and their work within the field of historical linguistics. In particular, their *Ausnahmslosigkeit der Lautgesetze* tenet, that is, the exceptionlessness of sound laws, prompted scholars to collect dialect data that would help prove or disprove this thesis [70] (Chambers and Trudgill, 1998; Anderwald and Szmrecsaniy, 2009; Mesthrie, 2009). Another aspect that encouraged the proliferation of dialect studies was the desire to preserve and record dialects, especially rural ones, in their unspoilt forms, so to protect their authenticity against the threats of eradication posed by modern life (Anderwald and Szmrecsaniy, 2009; Mesthrie, 2009). In a way, this reminds us of the obsessive search for 'authenticity' that excited the *Berliner Lautarchiv* scholars, although it is clear that the premises and motives of these enterprises were radically different.

Many of the studies appearing in this period constituted what can be defined as 'dialect geography',[71] as their aim was that of 'mapping out' the distribution of variation (and, indeed, verifying its very existence), which in turn proved the fallacy of the Neogrammarian exceptionlessness of sound laws. Nonetheless, the status of dialect geography within academia was often challenged, as it was deemed the domain of school teachers, or concerned with uninfluential linguistic details (Wiesinger, 1964; Chambers and Trudgill, 1998).

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[70] However, Koerner (2004a) disputes that the Neogrammarians' theory as the rationale behind Georg Wenker's work, defining this nothing more than a 'myth'.

[71] See for example Chambers and Trudgill (1998) and Koerner (2004a). For a further explanation of the various denominations of this field see Methrie (2009).

As was mentioned at the beginning of this section, these studies proliferated across Europe: this section will discuss some of the most prominent and influential works in this field.

4.14.1 Germany

The literature generally attributes the beginning of dialect geography to the work of German schoolteacher and linguist Georg Wenker (1852-1911). Between 1876 and 1877, Wenker posted questionnaires to school headmasters across Germany, which consisted of 40 sentences written in standard German. In turn, the participants were invited to write down the same sentences in their own particular dialect in the normal orthography (i.e. not in phonetic script), and note down any useful phonetic detail about the pronunciation (Malmberg, 1994 in Koerner, 2004a). Wenker's survey managed to collect an overwhelming amount of information, as he attempted to reach 'every village in Germany that had a school' (Mesthrie, 2009: 48). As Malmberg (1994 in Koerner, 2004a) noted, the response to Wenker's request was quite astonishing, as 44,251 questionnaires were posted back to him. As Chambers and Trudgill (1998) observed, however, the amount of data was so unmanageable, that Wenker had to sensibly downsize the scope of his research to a smaller amount of variables and include only the northern and central areas of the country. The results of this enterprise were presented in *Das rheinische Platt,* published in 1877, in which Wenker included hand drawn dialect maps featuring the result of his survey. The linguistic maps Wenker created were subsequently republished collectively in 1881 in the *Sprachatlas des Deutschen Reichs,* the first of its kind (Chambers and Trudgill, 1998; Morpurgo Davies, 2003). Wenker continued his study on German dialects, and so did his successors, who expanded on Wenker's work. In particular, the culmination of these efforts was the *Deutscher Sprachatlas*, published in

1926 and curated by a colleague of Wenker's, Ferdinand Wrede (Chambers and Trudgill, 1998).

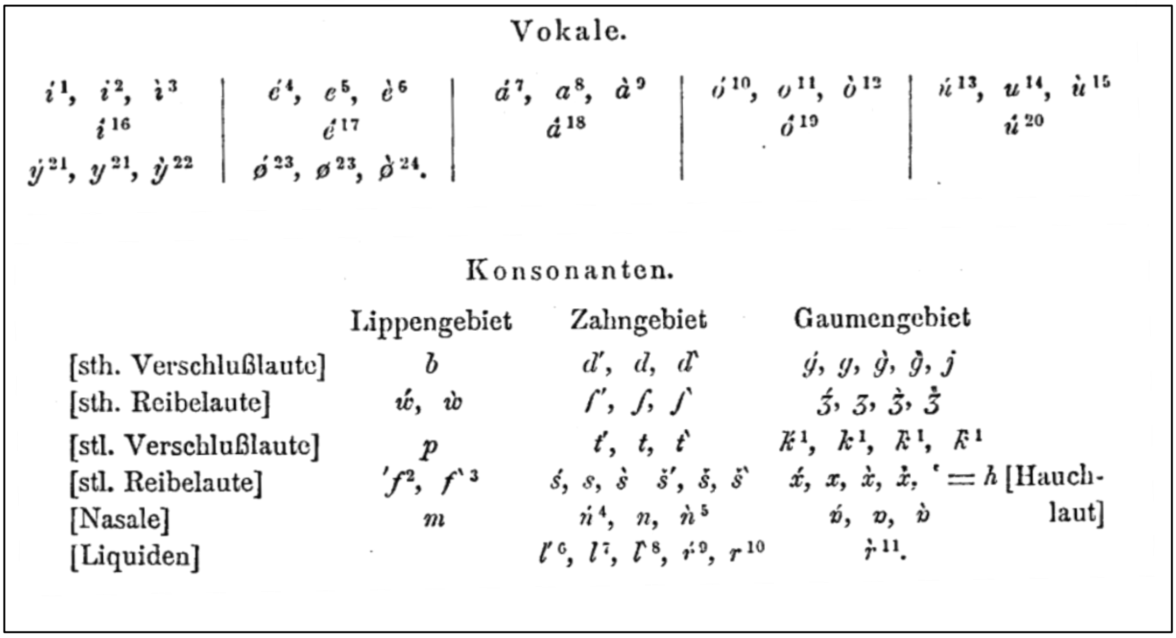
4.14.2 *Teuthonista*: Brief history

Chronologically close to the *Berliner Lautarchiv* and the *Deutscher Sprachatlas* is the notation system appeared firstly in 1900, and later in 1924 with a few modifications, on the pages of the journal *Zeitschrift für hochdeutsche Mundarten*, later renamed *Teuthonista*, from which the transcription alphabet takes its name. Based on the Roman alphabet, *Teuthonista* was employed to transcribe High German Dialects. It was introduced by Philipp Lenz (1861-1926) and Hermann Teuchert (1880-1972), as the culmination of the developments in the study of German dialects which began in the first half of the nineteenth century (Wiesinger, 1964). Authors like Franz Joseph Stalder in the field of Swiss dialects and Johann Andreas Schmeller for Bavarian dialects, had attempted to describe the speech sound through the means of the German alphabet, which could not however account for all the phonemes encountered. As a result, Stalder and Schmeller added diacritics whenever the German alphabet proved defective, which was problematic especially in the case of the transcription of vowels. After these first attempts, however, the interest in the transcription of dialects was not kept alive for decades. Even the Neogrammarian School which began its research in the area of Germanistics in those years was more focused on Old High German than on contemporary dialects, which were instead the interest of primary or high school teachers, that is, outside academia (Wiesigner, 1964)

Nonetheless, in the years between 1854 and 1877 high school teachers collaborated in the publication of seven volumes of the monthly journal *Die deutschen Mundarten* (1877) in which, as noted by Wiesinger (1964), there was no official standard of phonetic transcription. Such a fragmentation was felt to be undesirable, and it led Johann Friedrich Kräuter to publish *Über mundartliche Ortographie* in 1877 in *Die Deutsche Mundarten* to advocate the creation of a notational standard. Kräuter, who had taken inspiration from Lepsius's *Das allgemeine linguistische Alphabet. Grundsätze der Übertragung fremder Schriftsysteme und bisher noch unge- schriebener Sprachen in europäische Buchstab* of 1855 (*Standard Alphabet For Reducing Unwritten Languages and Foreign Graphic Systems to a Uniform Orthography in European Letters)* in the adaptation of the Roman alphabet to transcribe German phonemes, shared the fate of his predecessor, in that the system only reached modest success, due to the impractical number of diacritics that hindered widespread application. Similarly, Oskar Brenner also put forward a system based on an even more extreme version of the diacritic method appeared in 1892 and 1895, again with no success (Wiesinger, 1964).

However, such discussions were not abandoned, and the search for a system for the transcription of German dialects continued in the following decades. Attempts in this sense were also aimed at finding a balance between the monotypic method, a current example of which is the IPA, and the diacritic method, exemplified by Lepsius, Kräuter and Brenner, amongst others, which was applied especially in the notation of vowels, in line with the tradition of German notation (Albright, 1953; Wiesinger, 1964). Diacritic or monotypic, the new alphabet also had to be easily learnable, easily legible, and easily printable. First steps in these directions were taken by Otto Bremer who presented his script in an appendix to his *Deutsche Phonetik* (1893), entitled *Zur Lautshcrift* (1898). Bremer's system is almost entirely monotypic, especially in the notation of vowels. An innovation of Bremer's alphabet, as noted by Wiesinger (1964) was the introduction of symbols for central vowels, which had been problematic for other authors employing the diacritic method. Wiesinger (1964), also points out that Brenner's monotypic approach was a more efficient alternative to the need for previous authors to describe phonetic characters with the formula 'pronunciation between x and y', or for example 'between i and u' for the vowel /y/. This methodology was already described by Lepsius with the metaphor of primary and secondary colours mentioned in earlier sections, and criticised by Sweet and Sievers. This is also very similar to that found in Brandl's notation in the Berliner Lautarchiv, where his superscripted vowel diacritics serve exactly the function of indicating a vowel, and not in the most efficient of ways, between two others, or 'similar to' another.

Below is a comparison between Oskar Brenner's and Otto Bremen's systems, so that the difference between the diacritic method and the monotypic method can be observed more easily.



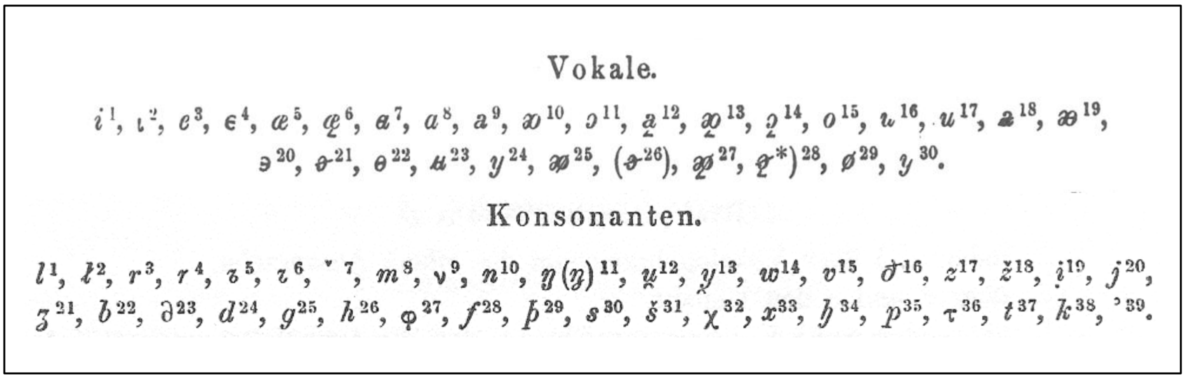
Vokale.

í[1], i[2], ì[3]	é[4], e[5], è[6]	á[7], a[8], à[9]	ó[10], o[11], ò[12]	ú[13], u[14], ù[15]
i̇́[16]	ė́[17]	ȧ́[18]	ȯ́[19]	u̇́[20]
ý[21], y[21], ỳ[22]	ǿ[23], ø[23], ø̀[24].			

Konsonanten.

	Lippengebiet	Zahngebiet	Gaumengebiet
[sth. Verschlußlaute]	b	d′, d, d‵	ǵ, g, g̀, g̑, j
[sth. Reibelaute]	ẃ, ẁ	ʃ′, ʃ, ʃ‵	ʒ́, ʒ, ʒ̀, ʒ̑
[stl. Verschlußlaute]	p	t′, t, t‵	ḱ[1], k[1], k̀[1], k̑[1]
[stl. Reibelaute]	′f[2], f‵[3]	ś, s, ṡ̀ š′, š, š‵	x́, x, x̀, x̑, ʽ = h [Hauchlaut]
[Nasale]	m	ń[4], n, ǹ[5]	ŋ́, ŋ, ŋ̀
[Liquiden]		l′[6], l[7], l‵[8], ŕ[9], r[10]	r̀[11].

Figure 13: Brenner's transcription system (Heepe, 1932: 35)



Vokale.

i[1], ɩ[2], e[3], ϵ[4], æ[5], ę[6], ɑ[7], a[8], a[9], ɒ[10], ɔ[11], ą[12], ɒ̨[13], ǫ[14], o[15], ʊ[16], u[17], ɶ[18], ɶ[19],
ɘ[20], ɵ[21], θ[22], ʉ[23], y[24], ɶ̸[25], (ɵ[26]), ɒ̨[27], ǫ*)[28], ø[29], y[30].

Konsonanten.

l[1], ɫ[2], r[3], ɾ[4], z[5], ʐ[6], ˇ[7], m[8], ν[9], n[10], ŋ (ŋ̥)[11], ɥ[12], y̬[13], w[14], v[15], ð[16], z[17], ž[18], į[19], ǰ[20],
ʒ[21], ƀ[22], ∂[23], d[24], g[25], h[26], φ[27], f[28], ƥ[29], s[30], š[31], χ[32], x[33], ɧ[34], p[35], τ[36], t[37], ƙ[38], ʾ[39].

Figure 14: Bremer's transcription system (Heepe, 1932: 33-34)

Nonetheless, Bremer's alphabet was also unsuccessful in reaching widespread application due to the high number of symbols introduced. Bremer's, Brenner's and other phonetic alphabets were collated by Hans Neumann in 1928 in a chapter entitled *Deutsche Mundarten,* containing a list of transcription systems by various authors for the notation of German dialects. Neumann's collection is in turn included in Martin Heepe's *Lautzeichen und ihre Anwendung in verschiedenen Sprachgebieten (Phonetic characters and their application in different language areas)* published in Berlin in the same year, which was itself a reference book for phonetic scripts. Hans Kurath, author of the *Linguistic Atlas of New England* (1939-1943), who reviewed it in 1929, described it as a 'great achievement typographically' (Kurath, 1929: 541), and noted that 'never before have as many phonetic symbols been printed in a single volume, and printed as accurately and neatly as here' (Kurath, 1929: 541).

Successful or not, these systems formed the basis upon which Philip Lenz created his alphabet, which would come to be known as Teuthonista. In addition to these, the alphabets by Ferdinand Holthausen's, which appeared in *Die Soester Mundart - Laut- und Formenlehre nebst Texten* (1886), and by Friedrich Kauffmann's in *Der Vokalismus des Schwäbischen in der Mundart von Horb* (1887), also constituted another step forward towards the creation of Teuthonista. Holthausen and Kauffmann were in turn influenced by the work of Eduard Sievers, *Grundzüge der Phonetik zur Einführung in das Studium der Lautlehre der indogermanischen Sprachen umbenannte und erweiterte Lautphysiologie* of 1881, by Lepsius's Standard Alphabet, by Eduard Boehmer's *De sonis grammaticis accuratius distinguendis et notandi* of 1881 (Wiesinger, 1964), and by Ascoli's work. Lenz's alphabet, which itself has many common elements with these works, first appeared on the journal *Zeitschrift für hochdeutsche Mundarten in* 1900, which was renamed *Teuthonista* in 1924, giving the system its name. It was later modified by Hermann Teuchert in 1919. Lenz initially approached the monotypic method of the IPA, but rejected it for the creation of Teuthonista, which is decidedly diacritic (Wiesinger, 1964; Reichel, 2003).

4.14.3 France, Italy, and the British Isles

The methodology used in subsequent dialect studies across the continent was different from that applied in Wenker's *Sprachatlas des Deutschen Reichs* (1881) and Wrede's *Deutscher Sprachatlas* (1926) in at least one key aspect. In France, scholars began taking advantage of fieldworkers, as opposed to posting written questionnaires to potential participants. Moreover, the interviews were transcribed using phonetic notation, as opposed to standard orthography (Chambers and Trudgill, 1998). Fieldworkers were first used for the *Atlas Linguistique de la France,* published in 9 volumes between 1902 and 1910 by Jules Gilliéron (1854-1926) and Edmond Edmont (1849-1926), with the addition of supplementary volumes published in 1920. The survey was carried out by Gilliéron, a linguist and dialectologist, who created the questionnaire and compiled the word list, and Edmond Edmont, a shopkeeper, who, between 1897 and 1901 visited 639 French, Italian, Belgian and Swiss locations on his bicycle to interview informants; the information was then used to create maps The notation employed in the *Atlas Linguistique*, the RLiR, which was a development of the alphabet of the linguist and abbot Jean-Pierre Rousselot, also became the official method of transcription by the Societé de Linguistique Romane and of the *Revue de Linguistique Romane* (Iordan, Orr & Posner, 1970; Grassi, Sobrero & Telmon, 1997). As Crystal (2003: 26) noted, the *Atlas Linguistique de la France* 'stands as the most influential work in the history of dialectology'. Kehrein (2012) noted that, however, both Wenker's *Sprachatlas* and Gilliéron's *Atlas Linguistique* were flawed, especially with regards to the amount of data collected (i.e. not enough villages of France were included in Gilliéron's study, and Wenker's choice to only use 40 sentences), and with regards to methodology (i.e.

Wenker's use of postal questionnaire). Together with Jean-Pierre Rousselot, Gilliéron founded the *Revue des patois gallo-romains* in 1887.

L'Abbé Rousselot (1846-1924) was also the author of a dialect study, the *Les modifications phonétiques du langage étudiées dans le patois d'une famille de Cellefrouin (Charente),* published in 1891. While the title is fairly self-explanatory, it is worth mentioning that it was the dialectal variations that Rousselot's was able to notice in the speech of his own *famille* that prompted him to begin the study (Knops and Hagen, 1989; Morpurgo Davies, 2003). The work is thus singularly effective in disproving the Neogrammarian principles of sound laws (Iordan, Orr and Posner, 1970).

In Italy, the main figure in the field of dialectology was Graziadio Isaia Ascoli (1829-1907), another pioneer of dialect studies in Europe, especially in the area of Romance languages. Ascoli is credited with the unofficial foundation of Italian and Romance dialectology as a scientific discipline as a result of the appearance of his *Saggi ladini* in 1873 (Iordan, Orr and Posner, 1970; Repetti, 2000). Ascoli was quite precocious in his interest in dialect study, and he published his first pamphlet on the relationship between the Friulian language and Rumanian, when he was only 15 years old[72] (Malkiel, 1993). Ascoli was born in Gorizia, which now sits on the border between Italy and Slovenia, and close to the border with Austria, and where Friulian is still spoken. Due to the geographical location, Gorizia, which was (and still is) a multicultural and multilingual city, allowed him to nurture his interest for language and comparative linguistics. He also came into contact with the wider European academic *milieu*, and especially with the German scientific community, by which he was heavily influenced (Morgana, 2010). In addition, as Repetti (2000) and Iordan, Orr and Posner (1970) noted,

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[72] *Sull'idioma friulano e sulla sua affinità colla lingua valaca; schizzo storico-filologico* (1846).

Ascoli's work on dialectology was deeply rooted in the field of historical phonology, a binomy that has not been abandoned by Italian dialectologists to this day, as the languages of the present were considered an invaluable tool to uncover the phonological processes of the past. Like Gilliéron, Ascoli also founded a journal, the *Archivio Glottologico Italiano,* in 1873, which included the aforementioned *Saggi ladini* in the inaugural issue. As in the *Atlas Linguistique,* the pages of the *Archivio Glottologico* also featured a transcription system to present data, mainly diacritic. An initial notation was created by Ascoli himself, formed the basis for the diacritic transcription used in the *Carta dei Dialetti Italiani* (CDI – Map of Italian Dialects) after it was modified and simplified by Clemente Merlo (Grassi, Sobrero and Telmon, 1997). As will be shown below, the CDI notation presents some similarities with that employed by Brandl.

A certain sense of urgency is what motivated the birth of the first dialect society in the British Isles: 'some systematic efforts ought to be made for the collection and preservation of our provincial words. In a few years it will be too late' (Wright, 1870 in Shorrocks, 2001:1556). The words of William Aldis Wright were not uttered in vain and were echoed by William Walter Skeat who, in 1873, established the English Dialect Society (Shorrocks, 2001). 1873 is incidentally the same year of the foundation of the *Archivio Glottologico Italiano.* The English Dialect Society efforts in collecting and recording dialect items was monumental: as Shorrocks (2001) explained, the Society published 80 volumes between its foundation in 1873 and 1896, when it was disbanded. As Petyt (1980 in Shorrocks, 2001: 1557) noted, '[m]ost scholars have found the decision to disband the EDS in 1896 unfortunate, incomprehensible or even naïve and complacent'. Nonetheless, another prominent figure of British dialectology was Joseph Wright (1855-1930), who not only founded the Yorkshire Dialect Society in 1897, but was also appointed by Skeat in 1895 as the editor of the then forthcoming *English Dialect Dictionary,* the ideal culmination of the work of the English Dialect Society. The

Dictionary was another impressive effort, and 6 volumes were published under the direction of Wright between 1898 and 1905, and the publication of the *English Dialect Grammar* followed in 1905. However, as we have seen for the works of Wenker and Gilliéron, the *Dictionary* and the *Grammar* were subject to criticism, again, with regards to the methodology of data collection and the less-than-ideal geographical coverage of the project (Shorrocks, 2001).

Case Study: Introduction

4.15 The notation: general remarks

The majority of the files present two sets of transcriptions with different calligraphy[73]; they are otherwise identical. An explanation for this occurrence might be found in the introduction of Brandl's *Englische Dialekte* (1926), which is a collection of phonetic transcriptions of some of the recordings in the Lautarchiv, including a few of the 66 recordings. Brandl (1926) explained how each recording was listened to a few times before being transcribed on paper. A first transcription was made while reading the text with the speaker and 'according to the movements of the mouth' (Brandl, 1926: 4 - translated from German). I hypothesize that the second version, more legible and neat, is the result of a more careful listening of Doegen's recordings (see Appendix 2 for a particularly representative example).

Brandl uses most of the symbols that would successively appear in the IPA, for example [ʃ], [ð] [ŋ], and the transcription 'essentially follows Sweet' (Brandl, 1926: 3 - translated from German). /θ/ is <þ> like in Sweet's notation and in the earlier versions of the IPA. The other symbols that do not change from the Roman script are just handwritten in cursive, something that makes the transcription somewhat hard to interpret Not so, obviously, in *Englische Dialekte*, which is a published work, and therefore employs regular typeface. The vowel symbols also tend to be the same as those in the IPA, and it cannot be doubted they were inspired by Sweet's Romic; however, the values are different from those of the IPA in quite a few instances. Similarly to the IPA, vowel lengthening is indicated by two dots [:], as in the IPA. The transcription is segmented according to lexical items, rather than being a continuous string. Occasionally, an alternative transcription of a word is included between parentheses. This could be due to a change of mind of the speaker in pronouncing a certain word. Other times, Brandl includes the notation of phrases that are not included in the recording. For example, Albert Tucker's text features the phonetic transcription of the sentence 'I'm going in to have something to eat' (British Library copy, C1315.1.473-475), presumably uttered off-the-record by Tucker to announce the need of an interruption. Brandl's transcription can be somewhat inconsistent. Very often the same symbol is employed for different sounds. In other cases, two identical sounds are assigned different symbols instead. Another observable aspect is that the transcriptions tend to become more accurate in time. For example, notations taken in later 1918 are more precise than those made in 1916, mostly due to the introduction of additional symbols. For instance, <ə> was completely absent in earlier transcriptions (e.g. February 1916, the earliest recordings in this corpus). Brandl only introduced it in July 1916. As will be explained in more detail below, the use of the less-than-ideal superscript vowel symbols, decreased over time. In all fairness, however, some of the inconsistencies might be due to the acoustic quality of the recordings and to the impossibility of taking accurate instrumental measurements of vowels, as Brandl pointed out in *Englische Dialekte* (1926).

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[73] I use the term 'calligraphy' because, as it will be shown, Brandl's transcriptions are in handwritten cursive, with the exception of those symbols that differ from the Roman script in the IPA as well.

4.16 The notation of vowels

4.16.1 Inventory of symbols

As mentioned above, Brandl's notation of vowels employs many of the symbols that are now in the IPA and that were used by Henry Sweet in his Broad Romic. On the other hand, Brandl makes large use of two symbols that do not appear in Sweet's transcription or in the IPA. The first one is similar to a backwards lower case alpha <ɒ> and denotes an unrounded central vowel; the second is derived from the early notation of the Germanic umlaut[74] diacritic [¨] in Deutsche Kurrentschrift. It was common practice in German to superscript the letter [e] on vowels in order to notate an umlaut. In Deutsche Kurrentschrift [e] was fairly different in shape from that of the Roman alphabet, and was instead similar to a horizontal ziz-zag line, or comparable to a cursive lower case <n>. An example is below in Figure 15:

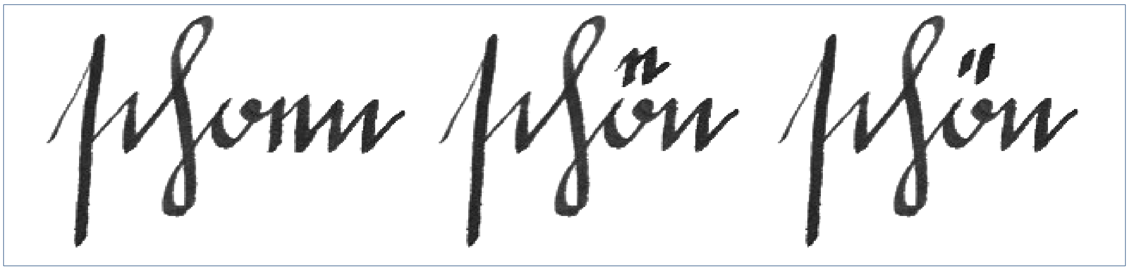

Figure 15: Development of umlaut notation in Kurrenschrift: schoen, schoͤn with superscript umlaut symbol <e>, and, finally, schön. (Wikipedia, 2011)

Brandl uses the same notation to indicate a sound close to /ʌ/. A common symbol in Brandl’s transcriptions is also the schwa [ə], which, however, Brandl found ‘inadequate but very often employed due to Sweet’ (Brandl, 1926: 3 - translation from German). Below is a full list of the phonetic symbols featured in this section of the Berliner Lautarchiv. As Brandl’s transcriptions are handwritten, the symbols below represent their closest IPA counterpart, and they have been chosen upon comparison with the characters in use in Brandl’s *Englische Dialekte.* The values of the phonetic symbols will be discussed in later sections.

- Consonants:

<b>, <d>, <ð>, <f>, <g>, <h>, <j>, <k>, <l>, <m>, <ŋ>, <n>, <p>, <r>, <s>, <ʃ>, <t>, <þ>, <v>, <w>, <z>, <ʒ>, <ʤ>, <tʃ>;

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[74] In this particular case the notation refers uniquely to the umlaut function, and not to the dieresis.

- Vowels:

<a>, < ɒ >, <e>, <ɛ>, <ə>, <i>, <o>, <ɔ>, <œ>, <u>, <*n*>;

- Superior/ superscript letters:

< ᵃ >, <ᶛ>, < ᵉ >, < ᵊ >, < ⁱ > , < ᵒ >, < ᵓ >, < ꟹ > < ᵘ >, < ʳ >, < ⁿ >;

- Subscript characters:

< ₒ >

- Diacritics:

<ː> (length) , <~> (nasality)

4.16.2 The notation of vowels

This method of notating the umlaut as superscript letters features prominently in Brandl's transcription. In *Englische Dialekte*, Brandl (1926) explained that, for instance 'to notate a letter sound that is between /i/ and /u/ or between /o/ and /a/ the combinations [uⁱ] and [aᵒ] are used respectively' (Brandl, 1926: 3). However, Brandl does not limit himself to the superscript letter <ᵉ>, <ᵒ>, or <ⁱ>, as he described and as it was common practice in early German scripts, but also employs superscript <ᵊ>, <ᶛ>, < ᵓ >, < ꟹ > and < ᵘ >. In a very few cases he also uses a subscript [o]. Superscript letters are of two types: those that are places above another vowel, as it has been described so far, and those that are superscript but are free-standing units. The first type (henceforth superscript)[75] serves the function of modifying the qualities of a certain vowel sounds, like their fronting or backness, like the umlaut, or sometimes roundedness, and to indicate that a vowel sound is 'closer' to its superscript vowel, as will be explained below. This device, however, is a by-product of the limited number of symbols in Brandl's repertoire. The second type

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[75] Throughout this case study, I will refer to vowel symbols placed above other symbols as 'superscript characters', while vowel symbols above the line (but not directly above another letter) will be referred to as 'superior character', to avoid confusion.

(henceforth superior), however, appears to have a series of functions in Brandl’s notation:

- it can distinguish between /i/ and /ɪ/;
- it can indicate that a particular vowel is uttered very quickly
- it can indicate an unstressed vowel

4.17. Methodology

4.17.1 Organisation of the corpus and choice of examples

From a first analysis of the corpus, it appears that Brandl’s transcriptions evolved over time, especially in terms of the notation and the transcription devices used. Over time, new symbols were introduced in the transcriptions to progressively supplant the use of superscript and subscript vowel symbols as modifiers, as will be seen below, so that later transcriptions feature significantly fewer examples of superscript and subscript characters. Such an interesting realisation has prompted me to organise the data in chronological order over the period 1916-1918, in order to keep better track of these changes. Furthermore, attention has also been paid to the transcription of the different English dialects in the corpus, so that in addition to a chronological order, the data has also been organised according to the dialect variety transcribed, to check whether there is variation in accuracy in relation to them.

To facilitate the selection of suitable examples in the corpus that will be discussed below, I have thus applied a set of criteria. Firstly, priority has been given to recordings with reasonably good audio quality and with legible transcriptions. Secondly, the examples chosen have been deemed exemplificative of the most frequent usage of a specific symbol or most common correspondence between sound and character. As will be seen below, Brandl was not especially consistent in his transcription. For this reason, I have chosen particularly representative examples of a single transcription device, so that comments could also be extended to most other examples of the same feature throughout the corpus. Thirdly, whenever possible, and for the sake of comparability, I have favoured examples common to a specific dialect or variety, so that accuracy and consistency could be compared. Finally, although they do not meet the above criteria, some of the examples discussed have been nonetheless chosen if they included particularly uncommon transcription devices.

4.17.2 Audio quality and settings

As the acoustic quality of many of the recording was unfortunately far from ideal, I have manipulated the audio files with the computer software Audacity, in an attempt to make the recording clearer and easier to hear. The settings I used are the following:

- Noise removal
- Noise reduction dB: 48
- Frequency smoothing (Hz): 430
- Attack / decay time (secs): 0.08

The section of noise disturbance was isolated so that the software could identify its frequency in the recording and eliminate it according to the settings. Unfortunately, however, some of the recordings were too badly damaged and these settings were ineffective on the digitised files. For this reason, in a few cases some sounds have been particularly hard to identify with any degree of accuracy, especially in regards to vowels. In these instances, I have also used Praat for formant outlining and for help in determining which phoneme was actually being pronounced by the speaker.

Case Study: Analysis

4.18 Base vowels

By ‘base vowel’ I refer to all other non-subscript, non-superscript and non-superior symbols, and to the vowel the superscript or subscript vowel symbol modifies. In other words, in <$\underset{o}{a}$ > or <a^{e}>, <a> would be the base vowel. As mentioned in earlier sections, Brandl did not have separate symbols for /i/ and /ɪ/, which he transcribed as <i>, or for /a/ and /ɑ/, which he transcribed as <a>. (In Brandl’s calligraphy, this is the corresponding cursive type, <ɑ>). The other vowel symbols essentially followed Sweet and the IPA, including <ə>, which Brandl however found inadequate, as was mentioned above. One exception is <ɒ >, which does not feature in the IPA. However, Sweet used a similar symbol in his Broad Romic, <ɒ>, for a ‘low-back-narrow’ vowel, as ‘may be heard in the vulgar London pronunciation of ‘part’, ‘park’ (Sweet, 1877: 26) or in the Scottish pronunciation of ‘come up!’ (kɒm ɒp). In his transcription, Brandl the symbol < ɒ > generally represents a sound close to /ɐ/, albeit not particularly consistently.

4.19 Superscript and subscript vowel symbols in German, French, and Italian works

4.19.1 Superscript <^{o}> and other superscript symbols

The superscript < ^{o}> populated many linguistic atlases and other dialect studies, where it was employed to transcribe an ‘intermediate’ vowel sound, with a mid-way pronunciation point between the vowel itself and /o/. As far as works chronologically closer to the *Berliner Lautarchiv* are concerned, other examples of superscript < ^{o}> are present in the above mentioned *Atlas Linguistique de la France* with the same function. For example, <$\overset{o}{a}$> was used to notate a vowel sound between á (French *pâte*) and ò (French *porte*), <$\overset{o}{œ}$ > for a sound between œ (French *eu*) and /o/, and finally <$\overset{o}{u}$> for the vowel between u (French *rue*) and ó (French *pot*) (Grassi, Sobrero & Telmon, 2007). In the system created by Gauchat, Jeanjaquet and Tappolet for the *Glossaire des patois de la Suisse romande* (1924), <aͦ> was employed in the same way. The *Glossaire* also featured <æᵒ> for /æ/, as in the English ‘man’.

Similarly, in the journal founded by Clemente Merlo in 1924, *L’Italia dialettale,* the character <eͦ> was used to transcribe vowel sounds ‘volgenti ad *o*’ (Battisti, 1938: 56), that is, ‘moving towards /o/’, or ‘velar e’. Paulyn (1928: 56) also described Merlo’s vowels as ‘mit Zungenlage wie bei *o*’, that is, ‘with tongue position as *o*’. In the *Archivio glottologico*, Ascoli’s < æᵒ> was a vocalic sound ‘zwischen *o̱* und *a*’ (Paulyn, 1928: 53), while Goidánich superscript < ᵒ > used to denote ‘velarised’ vowels. In Viëtor’s *Elemente der Phonetik des Deutschen, Englischen und Französischen* (1884), <æᵒ> was used for an ‘*o*-like *a*’ as in English ‘water’ (Neumann, 1928: 46).

However, the superscript character < ᵒ > is also used in the literature to indicate rounding, for example by Trautmann in *Die Sprachlaute im Allgemeinen* (1884), and by Lessiak, Pfalz and Steinhauser (1922)[76] for the notation of Bavarian-Austrian dialects, or to indicate that a vowel sound is more open. An example can be found, again, in the *Archivio glottologico*, where Ascoli notes that <ụͦ> is more open than <u̇>. Finally, < ᵒ > could also be used to notate unstressed vowels, for example, by Forchhammer in his *Weltlautschrift* (1924). In these instances, therefore, the symbol < ᵒ > is not necessarily related to the vowel sound /o/ and its alphabetic representation: instead, it is simply a small circle. The lack of consistency works in the use of this diacritic in nineteenth- and twentieth-century linguistic, even within the same publication, makes < ᵒ > somewhat ambiguous, and its exact purpose within the Berliner Lautarchiv corpus difficult to interpret, as will be seen below. To add even more ambiguity, the position of the diacritic could also vary according to typographic constraints. In other word, the diacritic could be positioned either above or below the vowel it modified, usually depending on whether another diacritic was already present above it. For example, Lessiak, Pfalz and Steinhauser (1922) use <a^{o}> or <$\overset{o}{œ}$> for rounding, as well as < $\widetilde{a\underset{o}{o}}$ >, where the superscript position is already occupied by the tilde. Trautmann also employed both < ^{o} > and < $_{o}$ > for rounding.

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[76] *Beiträge zur Kunde der bairisch-österreichischen Mundarten*.

4.19.2 Subscript < $_{o}$ >

In the literature, the subscript character < $_{o}$ > is employed in a more homogenous fashion. In *Standard Alphabet*, Lepsius employed < $_{o}$ > to transcribe an ‘indeterminate’ vowel equivalent to /ə/. For instance, <$\underset{o}{e}$ > is <o> in English ‘nation’ or <e> in German ‘Verstand’ (Heepe, 1928: 1). Similarly, in *L’Italia dialettale,* Merlo too used a subscript < $_{o}$ > to transcribe an ‘indistinct’ vowel or ‘phonic evanescence’ (Paulyn, 1928: 57). Trautmann in *Die Sprachlaute*, and Goidánich in the *Archivio glottologico* transcribed ‘reduced’, ‘weaker’ or ‘vanishing’ pronunciation of vowels by placing < $_{o}$ > under vowels. However, it is worth mentioning that, in the majority of transcription systems, the subscript < $_{o}$ > was most commonly employed for consonants rather than vowels, for example, in Teuthonista, or by Lundell, Viëtor, Siebs, Jaberg and Jud, Lepsius, Endemann and Meinhoff (who put forward a further development of Lepsius’s system), or Forchammer, to name but a few. In these instances, < $_{o}$ > was employed to notate either syllabic consonants, or voicelessness, a practice that was eventually adopted by the IPA as well, and still features in the Alphabet.

4.20 Superior vowel symbols

4.20.1 Superior vowel symbols in German and Italian works

As mentioned above, the second type of superscript vowel symbols appear as standalone units in the *Berliner Lautarchiv* corpus. In other words, they are not placed above other vowel symbols. Although not especially common, this transcription device can be found in German and Italian dialect studies to notate particularly ‘weak’ or extremely ‘short’ vowels. Superscript <$^{\text{a, e (ę), i (į), o (ǫ) u (ų)}}$> appeared in Gamillscheg’s *Oltenische Mundarten* (1919) with this function. Similarly, Merlo’s transcription system featured a kleine Buchstaben über der Linie’ (Paulyn, 1928: 57), that is, <$^{\text{e a o}}$>, to notate a ‘vocale brevissima’ (Paulyn, 1928: 57), or ‘very short vowel’.

4.21 Examples in the *Berliner Lautarchiv* corpus: superscript and subscript symbols and superior letters

4.21.1 Superscript < $^{\text{o}}$ > and subscript < $_{\text{o}}$ >

Superscript vowel symbols appear frequently in the *Berliner Lautarchiv* corpus, but occurrences of subscript < $_{\text{o}}$ > were slightly more common. However, as has been briefly mentioned above, the number of overall instance of superscript characters decreased over time. For example, the first transcription in the corpus was that of Robert Davidson from Aberdeen and was taken on the 14th of February 1916: it featured 71 instances of superscript and subscript characters (see Appendix 3). The transcription of William Dixon, from County Durham, was taken on the 21st of February 1916, and featured 33 instances of superscript characters. However, when transcribing the speech of another County Durham speaker, Richard Blacket, on the 4th of July 1917, Brandl only used the device 3 times. Already from late 1916, superscript characters became nearly non-existent.

As was mentioned, the use of this technique was related to the limited number of symbols in Brandl's transcription system. What is puzzling is that, in the transcription of William Dixon, <$\underset{o}{a}$>[77] (for a sound similar[78] to /ɔ/) appears alongside <ɔ>. In the earliest transcription, <$\underset{o}{a}$> accounted for 22 of the 33 instances of superscript characters. In Brandl's system, thus, subscript < $_{o}$ > appears as having the same function as superscript vowel symbol would have. In other words, unlike the abovementioned examples in German and Italian works, < $_{o}$ > acts as a vowel modifier. In this case, it notates a vowel sound similar to /ɔ/ or, as Brandl would have theorised it, a vowel sound between /a/ and /o/. It is important to note that, however, Brandl also employed <$\overset{o}{a}$> for the same sound, as the Austrian linguist himself pointed out in *Englische Dialekte*.

By listening carefully to the recording of William Dixon, the inconsistent use of <$\underset{o}{a}$> is very quickly apparent. The first line of the recording recites 'There was a man who had two sons'. Brandl used <$\underset{o}{a}$> for both 'was' and 'man'. However, while the vowel in 'was' can be indeed identified as /ɔ/, the vowel in 'man' is different, and is in fact closer to /a/ in the pronunciation of the speaker. Moreover, in the sentence 'the youngest of them', the vowel in 'of' is transcribed as <ɔ>, which is, in the pronunciation of the speaker, a slightly more open /ɔ/.

The transcription of the speech of William Langridge from Sevenoaks, Kent, was taken on the 5th of October 1916. In this example, Brandl used <ɔ> for the vowel in 'was', but appeared undecided on how to transcribe the word 'man'. In what I believe was the initial decision, Brandl notated the word as <man>. However, on top of this, he also employed <m$\underset{o}{a}$n>, perhaps added at a later time (see Appendix 4). A careful listen of the recording, which is luckily one of the best preserved ones, reveals that the vowel being pronounced was a very open /a/. It is also interesting to note that the rhoticity of the variety of the speaker was not noted.

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[77] Brandl did not have a separate symbol for /a/ and /ɑ/. What Brandl marks as <ɑ> is in fact only the cursive form of <a>.

[78] As mentioned in the main text, the acoustic quality of some recordings is very poor, including that of William Dixon's. Therefore, identifying the exact vowel being pronounced with any degree of certainty is extremely challenging.

4.21.2 Superscript < $^{\text{a}}$ >, < $^{\text{ɔ}}$ > and <$^{\text{ɒ}}$>

Brandl transcribed the speech of another County Durham speaker, Arthur Clark, on the 3rd of July 1917. The linguist employed a superior letter symbol $^{\text{ɒ}}$ to transcribe ‘was’, as in <w$^{\text{ɔ}}$z>, and employed a different vowel symbol for the base vowel in ‘man’, which was transcribed as <m $\overset{\text{a}}{\text{ɒ}}$ n>, with a character appearing as a backwards alpha. In the transcription of this recording, < $\overset{\text{a}}{\text{ɒ}}$ > appears alongside < $\overset{\text{ɔ}}{\text{ɒ}}$ >, < $\overset{\text{ɒ}}{\text{ɔ}}$ > and < $\overset{\text{ɒ}}{\text{a}}$ > (see Appendix 5). Again, Brandl is not particularly consistent in the use of these symbols, making identifying possible patterns particularly challenging. The beginning of the *Parable,* as read out by Clark, contained the words ‘…was (a) chep he had two lads’. In the recording, the word ‘chep’ is pronounced as /ʧɪp/, and /ɪ/ is transcribed by Brandl as <$\overset{\text{ɔ}}{\text{ɒ}}$>, while the vowel in ‘lads’, pronounced as /a/, appears as <ɒ>. The same symbol is also used in most instances to transcribe the word ‘father’ which, however, is pronounced with a vowel closer to /ɐ/ by Clark. Nonetheless, Brandl also transcribes the first vowel in ‘father’ as < $\overset{\text{a}}{\text{ɒ}}$ >. Brandl’s usage of <ɒ>, < $\overset{\text{a}}{\text{ɒ}}$ > and <$\overset{\text{ɒ}}{\text{a}}$> for vowel sounds close to /ɐ/ seems to indicate different degrees of openness and fronting. I thus hypothesise that Brandl employed < $^{\text{a}}$ > to notate a more open, more front /ɐ/ and <   > for a more back, more close /a/. It is interesting (and quite baffling) to note that none of these symbol combinations appeared in the transcription of the other speaker from County Durham, Richard Blacket, which Brandl wrote only the day after, and that the backwards alpha < ɒ > was completely absent. The superscript combinations with < ɒ > are, however, uncommon in the corpus.

4.21.3 Superscript < ^{i} >, < ^{e} >, < ^{ə} > and < ^{u} >

The two most common instances of superscript or subscript vowel symbols in the corpus are the abovementioned <$\underset{o}{a}$> usually for /ɔ/ and <$\overset{i}{e}$>, usually for a vowel sound between /i/ and /e/, or closer to /ø/, especially in the transcription of Scottish dialects, or very similar to /ɪ/. While my use of the word 'usually' might sound quite less than specific, it reflects a degree of inconsistency in Brandl's transcription and the extreme difficulty, due to the poor quality of a number of audio recordings, to identify the vowel sound being pronounced correctly. Nonetheless, my choice of words also implies that <$\overset{i}{e}$> is a combination of characters that Brandl used more consistently than others within the corpus.

In the transcription of the speech of Robert Davidson (Aberdeen), Brandl employed <$\overset{i}{e}$> consistently for a sound that can be identified, as mentioned above, as a more close /e/, or, more precisely, /ø/. In one example, nonetheless, the /ɪ/ in the word 'think' was transcribed as <$\overset{e}{i}$> instead, but this combination is rarer. The combination <$\overset{i}{e}$> appears in the transcription of another Aberdeenshire speaker, John Hay, from Cruden Bay, <$\overset{i}{e}$> is employed for the same sound. In the transcription of Robert Davidson and James Emslie, both also from Aberdeen, <$\overset{i}{e}$> is again used for a similar sound, however, for a vowel sound more similar to /ɪ/ than to /ø/, or, indeed, as a more close /e/. For example, the words 'your son', which written down by Emslie as 'yir syn', were transcribed by Brandl as <j$\overset{i}{e}$r (s$\overset{i}{e}$n) sen>. Here, it is also interesting to note that Brandl showed a degree of uncertainty on how to identify the vowel in 'son'. Words noted in parenthesis appear often in the corpus, but interpreting their purpose or rationale behind them is not an easy task. I hypothesise that there might have been a discrepancy between the first run-through done by Emslie and the final read that was recorded. In other words, the pronunciation of the two versions might have been different. While we have no means of checking whether this is an accurate interpretation, we know that the common practice for these recordings was to have a ‘dry run’ before the ‘official’ recording session took place.

Superscript < ^{e} >, < $^{\text{ə}}$ > and < ^{u} > are extremely rare in the corpus, and their sporadic appearances do not allow for systematic analysis or observations that can be an accurate representation of Brandl’s usage. Nonetheless, when present, the combination <$\overset{e}{\text{i}}$> represented a vowel between /i/ and /e/. For example, in the transcription of John Devlin, from Stalybridge, Cheshire, <$\overset{e}{\text{i}}$> corresponded to /ɪ/, where <k$\overset{e}{\text{i}}$st $\overset{e}{\text{i}}$m> reflected the pronunciation /ˈkɪst ˌɪm/. The combination <$\overset{u}{\text{o}}$> in the transcription of Henry Heath, from Wolverhampton, would suggest a vowel sound between /o/ and /u/ in the word ‘come’, which was transcribed as <k$\overset{u}{\text{o}}$m>. The recording reveals that the sound is very close to /o/ or /ʊ/, which, according to Brandl’s theoretical framework, would indeed be between the two vowel sounds indicated by the notational combination.

4.21.4 Superior letters

Brandl made extremely wide use of this notation technique and, unlike superscript or subscript letters, without any significant diachronic variations within the corpus. As can be seen above, this type of transcription device was not especially common in the contemporary literature, either in dialect studies and atlases or other linguistic-related works. However, superior consonants were more regularly used, for example, for nasality or rhoticity, as in the IPA, or for non-linguistic purposes (e.g. for abbreviations, cardinal numbers, etc.). Other examples in the literature have employed superior letters to notate ‘very brief’ or ‘very weak’ vowels sounds.

An analysis of the corpus shows that Brandl used superior letters in a similar way in his notation. For instance, in the transcription of Archie Gregory, a speaker from Richmond, North Yorkshire, the schwa sound /ə/ is always notated with the superior character < $^{\text{ə}}$ >, regardless of duration. The fact that the transcription also features < ^{i} >, is quite revealing, especially when considering that Brandl did not have separate symbols to differentiate between /i/ and /ɪ/. Brandl's use of superior < ^{i} > could be a way to remedy the limited amount of symbols (i.e. in the same way that rotating letters increased the amount of phonetic characters available while eliminating the need to create new ones, as in the IPA's <a> and <ɐ>). However, in Brandl's transcription, the main aim of using superior letters was not necessarily to differentiate between /i/ and /ɪ/ as different vowel sounds (although, effectively, this is the end result), but between stressed and unstressed vowels, or between vowels in strong and weak positions. In the same transcription < ^{a} > and < ^{u} > also appear with the same function (see Appendix 6). Thus, this particular technique served in fact a variety of functions simultaneously: a phonological one, differentiating between weak and strong vowels, a practical one, differentiating between /i/ and /ɪ/ (albeit, only in this case), and, in a way, a prosodic one, indicating stress. Superior characters are also featured in the phonetic transcription of Cyril Osborn, from West Yorkshire, with the same function, and also throughout the rest of the corpus. Brandl used this transcription device to notate vowels in unstressed position systematically, but with varying degrees of consistency (i.e. occasionally, instances of vowels in unstressed position were not transcribed).

4.22 Discussion

4.22.1 The vowel triangle

As was described above, superscript vowels are placed on top of another vowel to modify some of the latter's features. The technique of superscripting or subscripting vowels, one of the most interesting aspects regarding the transcription system in the *Berliner Lautarchiv*, was not unique to Brandl and was inspired by the notation of umlaut in German. In fact, as Pickering noted below, it was quite common practice. As was already discussed in Case Study 1, John Pickering observed that the inadequacy of the

English orthography in providing symbols for vowels of foreign languages could be remedied as below:

> [w]e might, perhaps, conveniently enough, designate the modified vowel by placing a small *letter* over it, as is done in the German language, where, for example, the vowel *a* [...] if it has a small *e* over it ($\overset{e}{a}$) takes a sound like *a* in fate; and the vowel *o* with a small *e* over it ($\overset{e}{o}$) loses its usual sound and takes one resembling French *eu* (Pickering, 1820: 14) [italics are the author's own].

Pickering found this solution more suitable for this purpose and less prone to printing and copying mistakes than William Jones's method for instance, which consisted of placing up to three dots over the sound to be modified. He also preferred superscript vowels to the German two-dot umlaut notation [¨] which could be mistaken as a dieresis.

In *Standard Alphabet* (1863), Lepsius employed subscript vowels in his discussion of English vowels. A justification for this particular choice of methodology can be found by analysing the way Lepsius described vowels and his understanding of the relationships among them. Moreover, the discussion of Lepsius's method can help shed light on the way Brandl employed superscript vowels in the Berliner Lautarchiv. To explain how vowels are formed, Lepsius uses primary and secondary colours as a similitude. Starting from the three primary colours, red, yellow, and blue, positioned at the corners of a triangle, one would find green between blue and yellow, orange between red and yellow, and purple between blue and red. In the same way, if we assume that /a/, /i/ and /u/[79] behave as red, yellow and blue (see Figure 16 below), that is, as 'primary vowels' (Lepsius, 1863: 46), then we can find '*e* between *a* and *i*, *o* between *a* and *u*, [...] the German *ü* (French *u*) between *i* and *u*, [...] the German *ö* (French *eu*) between *e* and *o*' (Lepsius, 1863: 46-47) (see Figures 16, 17 and 18 below).

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[79] All vowels are 'pronounced as in the German and Italian languages' (Lepsius, 1863: 46)

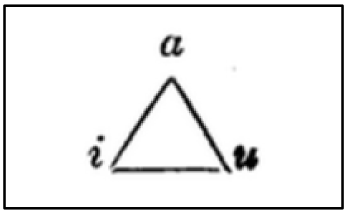

Figure 16: The triangle of primary vowels (Lepsius, 1863: 46)

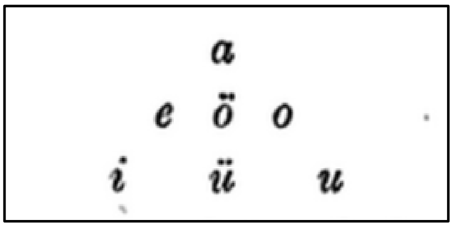

Figure 17: Primary and intermediate vowels (Lepsius, 1863: 47)

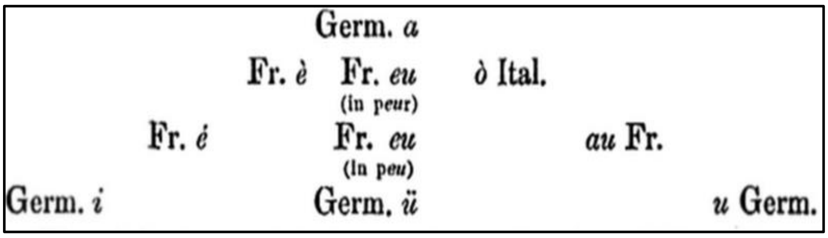

Figure 18: Primary and intermediate vowels with examples from European languages (Lepsius, 1863 :47)

Lepsius was not alone in describing vowels in terms of primary colours. The colour simile had also appeared in Rapp’s *Versuch einer Physiologie der Sprache,* published between 1836 and 1841, albeit in different forms (Kemp, 1995).

In Lepsius’s account, the second set of vowels, or ‘intermediate’ (Lepsius, 1863: 46) vowels, are described as an auditory middle point in the movement between two primary vowels. Sounds are often described as ‘being closer to’ or ‘sounding towards’ a certain other vowel and this is reflected in his use of subscript vowels. Although these do not appear in the Standard Alphabet, Lepsius observed that, for example, the first vowel sound in ‘water’ might be transcribed as <a_o>, because this vowel ‘approaches to *o*’. In the same token, the vowel in ‘half’ might be written as <$\underset{e}{a}$> as ‘according to others the most approved pronunciation softens its sound perceptibly towards *e*’ (Lepsius, 1863: 50). Despite the fact that Lepsius subscripted the vowels while Brandl superscripted them, the two methodologies are identical. Lepsius, used this technique to exemplify English vowels, and to indicate a degree of auditory proximity between two vowels.

The concept of a ‘vowel triangle’ was not introduced by Lepsius, but has instead a longer tradition dating at least to a century prior. Kemp (2001) and Pfitzinger and Niebuhr (2011) observed that the first appearances of the vowel triangle[80] dates back to 1781 with the publication of *Dissertatio physiologico-medica de Formatione Loquelae* by Friedrich Hellwag. The diagram is below in Figure 19:

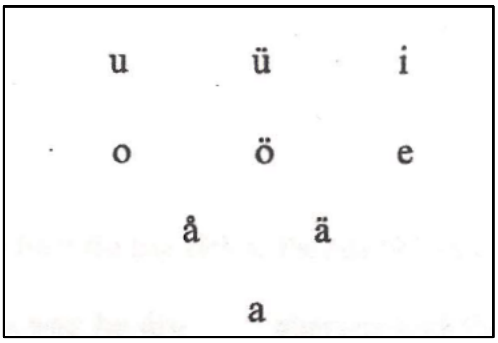

Figure 19: Hellwag’s Vowel Triangle (Kemp, 2001: 1470)

What is observable is that the secondary vowels <ü>, <o>, <ö>, <e>, <å> and <ä> are equidistant within the triangle formed by the three primary vowels, <u>, <i> and <a>. Therefore, for example <ü> is mid-way between <u> and <i>, and <ö> is mid-way between <o> and <e>. This arrangement then would also accommodate for all other potential ‘intermediate’ vowels:

> Between these rows and steps countless others could be added that are used by people of different languages and dialects: perhaps, by this, all vowels and

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[80] The fact that, however, Hellwag’s vowel triangle is not technically a triangle was already highlighted by Viëtor in 1887 (Pfitzinger and Niebuhr, 2011).

> diphthongs any man has ever uttered could be specified mathematically by levels (Hellwag, 1781 in Pfitzinger and Niebuhr, 2011: 161)

Moreover, the positioning of the vowels reflects, according to Hellwag, a (rather imperfect) physiological and auditory analysis of where in the mouth they are articulated. In other words, <a> is a low vowel and is therefore at the bottom of the triangle, while <u> and <i> are high vowels and are positioned at the top of the triangle[81] (Kemp, 2001; Pfitzinger and Niebuhr, 2011).

Another notable example of a vowel triangle can be found in Brücke's *Grundzüge der Physiologie und Systematik der Sprachlaute* (1856), albeit reversed, as below:

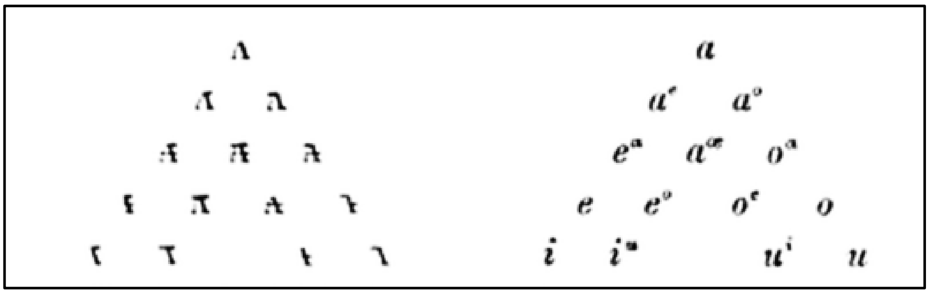

Figure 20: Brücke's vowel triangle in iconic and alphabetic notation (Kemp, 2001: 1577)

Incidentally, Brücke also uses superscript vowels in his alphabetic notation.

It is important to note that these are only two of the most famous example of vowel triangles in the literature. This particular vowel arrangement was employed by many other scholars, including Merkel, Trautmann, Thausing and Viëtor to name but a few.

4.22.2 Critique of the vowel triangle

The problematic nature of the vowel triangle, and Brandl's use of superscript and subscript vowel symbols, which can provide an explanation as to why Brandl's transcription is not as accurate and consistent as it could have been, have been discussed on more than one occasion. For example, in Sievers's opinion (1881 in Kohler, 1981), German phoneticians relied 'too heavily on sound similarities established by ear' (Kohler, 1981: 163), rather than on articulatory characteristics, as was done in Bell's and Sweet's works. Sweet himself, in his *Handbook of Phonetics* (1877) criticized German scholars, especially with regards with vowels, which are indeed the most problematic aspect in Brandl's phonetic notation. Sweet (1877) targeted in particular the triangle of primary vowels illustrated above by Lepsius. The English phonetician argued that the organisation of vowel sound according to acoustic similarities very often led to failure of distinguishing sounds that had in fact rather different articulatory features, despite being very similar from an acoustic perspective. Moreover, Sweet observed that this situation was worsened by the misguided hypothesis that vowels are mid-way points between the three primary vowels, and stated that 'the unfortunate triangular arrangement of the vowels [...] has done so much to perpetuate errors and prevent progress' (Sweet, 1877: vii). As Boshoff and Botha (1998) noted, the triangular diagram was firmly contraposed by supporters of the 'square' approach. However, attempts to reconcile the two approaches were initiated in 1891 by Passy, who created 'the uneasy marriage of the 'German' triangle to the 'English' square' in his *Etude sur le changements phonétiques et leur characters généraux* (Boshoff and Botha, 1998: 4). Below is Passy's diagram of *voyelles normales*, which later inspired Jones's cardinal vowel system.

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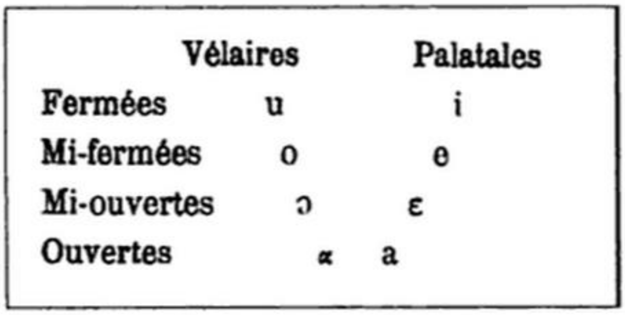
[81] Kemp (2001) noted that originally, <a> was at the top and <u> and <i> and the bottom.



	Vélaires	Palatales
Fermées	u	i
Mi-fermées	o	e
Mi-ouvertes	ɔ	ɛ
Ouvertes	ɑ	a

Figure 21: Passy's vowel diagram – 'voyelles normales' (Collins and Mees, 1999: 176)

Another critique of Lepsius’s theoretical approach to vowel representation, and especially of the primary colour simile, came from William Dwight Whitney, who accused Lepsius of having a complete disregard for the physiological basis of vowel notation, by ‘backsliding into the old reprehensible method in phonetics, of describing and naming things from subjective comparison’ (Whitney, 1862 in Kemp, 1981 :55). Whitney’s words caused Lepsius to renounce the colour simile once and for all, while keeping the vowel triangle (Kemp, 1981). Given Sweet’s commentary on the vowel triangle, and considering all the training the Austrian scholar received from him, the influence of the vowel triangle on Brandl’s transcription is therefore even more baffling.

Summary

4.23. Overview and summary

Case Study 2 has introduced the reader to the British recordings of the *Berliner Lautarchiv*, copies of which are held at the British Library, and at the beginning of the chapter I provided a description of the material in the corpus and of its characteristics. Following this, I outlined a brief account of the history of the *Lautarchiv* itself, discussed the theoretical, cultural and political rationale behind its establishment, and presented two key figures instrumental to the creation of the recordings: Wilhelm Doegen and Alois Brandl. With regards to both, I provided brief biographical details and an overview of their linguistic education and works in the field. In this context, I also pointed the reader to the fact that they had both been students of Henry Sweet at different times in their careers. However, given that Alois Brandl was the author of the transcriptions of the corpus analysed, his work and his academic and personal relationship with Henry Sweet have inevitably been the focus of the discussion.

I then illustrated in more depth the processes involved in the creation of the recordings, and pointed the reader's attention in particular to issues of authenticity and ethicality in the selection of informants, in the collection of data, in the recording of the material and in the subsequent phonetic transcription. With regards to the physical recording of data, I also illustrated how the kind of technical equipment available at the time affected how the data and the recordings were treated.

Following these practical considerations, I then moved on to the discussion of the historical, cultural and political premises that shaped the *Berliner Lautarchiv*. This account gave me the opportunity to employ a multi-disciplinary approach to the analysis of the contextual background, by including observations drawn from the fields of ethnography, anthropology and linguistic anthropology, history and musicology. While these considerations have not been as prominent as linguistic-related ones, they have nonetheless helped paint a much richer picture of what motivated, inspired and guided the various experts of each field taking part in the *Lautarchiv* project. Particular attention has been dedicated to the explanation of how the *Berliner Lautarchiv* fitted into a historical and cultural phase in which the concept of *Völkerschau* and the urge to capture the last traces of the remaining ‘primitive people’ motivated different scientific and academic enterprises across Europe. As mentioned above, the almost obsessive quest for ‘authentic’ specimens had a regrettably (and ironically) detrimental effect on the authenticity and ethicality of the sampling and the methodologies involved in the PoW studies.

From a lingusitic point of view, I also observed how the recordings had more in common with rehearsed performances than with legitimate linguistic investigations. In this context, I illustrated Brandl’s own methodology and how this was deeply influenced by the teachings of Henry Sweet. The personal and academic exchanges between the two have been therefore documented in the hope that they could provide a more detailed account of Brandl’s *modus operandi*. More specifically, I described the preparations occurring before the recording could take place, and which involved the speaker reading his text numerous times, amongst other things, to make sure that the transcriptions taken before and after the recordings were a match. In conjunction with these factors, I have also taken into account how other linguistic-related influences shaped Brandl’s transcription. In this context I provided a brief overview of the development in the wider field of linguistics, and more specifically of the areas of experimental, acoustic and articulatory phonetics, language teaching and dialectology.

Thanks to the inclusion of these observations, I was then able to provide a more detailed and informed analysis of the kind of notation employed by Brandl. The analysis focused on Brandl’s transcription of vowel sounds, and in doing this, I intended to highlight how the tension between the training he received from Henry Sweet and the theoretical formulations of the German and Austrian academic *milieu* (i.e. the concept of the vowel triangle) expressed itself in the phonetic transcriptions of the British recordings of the *Berliner Lautarchiv*.

Chapter 5: Conclusion

5.0 Overview and summary

In Chapter 1, I provided the reader with an outline of the overall content and structure of this work, while also presenting the two main aims that thesis set out to achieve. The first aim of this thesis was to provide a discussion of the series of obstacles hindering the authors' work, how successfully (or unsuccessfully) these were overcome, and how these had a considerable impact on their notation and transcription systems. Challenges were often of a quite practical nature, ranging from the lack of particular printing characters and the inability to get access to a printing press, to the unsuitability of available recording environments and the uncooperative nature of speakers. Other difficulties included the selection of an appropriate system for notation, and later, for transcription, or the ambiguity that the lack of an agreed standard created for the interpretation of the characters adopted by different writers. The second aim was to discuss the extent to which previous linguistic knowledge (including the writers' own native languages) affected the linguistic transcriptions in the different corpora. As was briefly explained in Chapter 1, the 'linguistic education' of the writers could often be a hindrance, often resulting in a 'perennial struggle' (Hanzeli, 1969: 100) between theoretical notions and the reality of data. I therefore argued that these two aims could be best achieved by presenting a narrative of the authors' 'mental worlds', that is, an overall account of how the combination of practical, theoretical, educational, social, political, and historical factors influenced, and were reflected in the linguistic transcriptions analysed in this thesis. As a result, I also situated my research within the context of linguistic historiography, in virtue of the fact that I attempted, in line with Swiggers's (2010:2) definition of the field, to make a contribution to the 'description and explanation of the history of contextualized linguistic ideas'. In following this theoretical delineation, I thus explained how my analysis of the linguistic transcription of the corpora could be enriched by an account of the writers 'mental worlds'. The narrative itself branched out into other fields of knowledge, including observations drawn from other subject fields. The Introduction continued with a brief description of the two main corpora: the Mohawk religious corpus at the British Library, and the British recordings included in the Berliner Lautarchiv, also held at the British Library.

In the words of Hanzeli (1969: 100), Chapter 2 (Case Study 1) has documented the 'perennial struggle between the ordering mind and the recalcitrant phenomenon'. As was noted throughout this section, some writers were clearly more successful than others in adapting to unfamiliar sounds and grammatical structures, and in this context, the Case Study has demonstrated how previous linguistic knowledge could often hinder, rather than facilitate the process of linguistic transcription. However, this chapter has also presented the effects that the lack of formal linguistic education had on the works of other writers, especially those belonging to non-Catholic traditions. In other words, key to this section has been the discussion of how the writers of the different missionary traditions mediated the tension between the framework of analysis derived from their linguistic education or training in Latin, Ancient Greek and Biblical Hebrew, thought to be universally applicable models of language description, and the 'bewildering nonconformity' of North American languages. The Case Study has also focused on the writers' individual attitudes towards the North American populations, highlighting how the feelings of anxiety, fear, uncertainty and hostility that these encounters could instigate were also reflected in the general quality and accuracy of their works. While some of the fundamental fallacies of some missionary and non-missionary works are undeniable, this chapter has sought to challenge the views of those critics who dismissed the whole missionary corpus as irredeemably flawed and lacking any scientific value or merit. As a result, this Case Study has pointed the attention of the reader to those works which demonstrated significant linguistic sophistication and acumen, especially when taking into account the non-scientific purposes for which these works where created. The achievements by Williams, Eliot, Zeisberger, Heckewelder, Cuoq and Marcoux, or by many missionaries of the Spanish tradition, cannot be underestimated. While this section has discussed how the indiscriminate application to the Greco-Roman framework of analysis to North American language was regrettable in many instances, it has also demonstrated how the writers' adherence to it was not as absolute and inevitable as some contemporary commentators (e.g. Oesterreicher and Schmidt to name but a few) maintained. Moreover, this chapter has also illustrated how the departure from the Classical framework led to the creation of new, unbiased models of analysis and 'inspired novel thinking about language and communication' (Gray, 2000: 7). The Mohawk religious corpus was particularly revealing in this sense, especially when analysing the works of the French traditions. The material of writers like Marcoux, Cuoq and the Mohawk catechist Onasakenrat showed outstanding linguistic acumen, but not without some failures and deficiencies. Nonetheless, their recognition of the non-contrastivity of voicing in Mohawk well ahead of the 'discovery of the phoneme', in other words, their *ante-litteram* phonemic awareness, makes their achievements 'truly remarkable', as commented by Lounsbury (1960: 35).

Chapter 3, which was presented to the reader as a 'bridge' section, aimed to connect the two Case Studies, and provided continuity to the narrative of this thesis. The section offered an account of the debates on the issues of transcription and transliteration that started in 1788 with the publication of Jones's *Dissertation on the orthography of Asiatick words in Roman letters* and that ultimately led to the first appearance of the International

Phonetic Alphabet in 1888. The section explained how towards the end of the eighteenth century, the need for a standard for transliteration became particularly prominent, especially amongst scholars of non-European languages, such as Sanskrit, Persian, or Hebrew, and amongst missionaries. I discussed how the lack of a shared standard was particularly problematic, as it complicated the interpretation of previous works on a particular language and it hindered the process of learning them. Conversely, a shared notation would have benefited cartographers, students of Biblical Hebrew and other Classical languages, and would have helped learners acquire reading and writing skills in those languages more easily and more quickly. Crucial to Case Study 1, it would have also aided the evangelisation efforts. Once the need for a standard was established, scholars then needed to agree on the system which would have constituted its basis. After years of discussion, prizes and experimentation, the Roman alphabet finally emerged as the winner. Following this, I then provided an overview of the events that led from the transliteration of script using the Roman alphabet, to their transcription. Amidst the arguments, the one sound / one symbol principle finally emerged. Chapter 3 also featured attempts to mediate between opposing sides: those who believe that a system should aim to portray orthography, and those who believe it should reflect pronunciation. In an attempt to merge the two sides, scholars then attempted to create ‘harmonic alphabets’. By the end of the nineteenth century, however, the growing interest in the transcription of sounds, rather than the study of scripts, began to take hold in the academic circles. This interest, together with the birth and development of acoustic and articulatory phonetics and the push from comparative linguistics, led to the slow shift from the need for a transliteration system to the need for a transcription system. This change of focus once again reignited the debates over which kind of alphabetic, analphabetic, or iconographic notation should form its basis for a shared transcription and how it should be adapted.

The Roman alphabet was again chosen, and it was later adapted and expanded to appear for the first time in 1888 as the International Phonetic Alphabet.

Finally, Chapter 4 (Case Study 2) introduced the reader to the British recordings included in the *Berliner Lautarchiv*. After a brief illustration of its history and of the rationale behind its foundation, I also gave an overview of the main characteristics of the recordings and of the phonetic transcriptions created by Alois Brandl. The description of the cultural, political and historical background which shaped the Lautarchiv also included a series of observations drawn from the fields of anthropology, ethnography, musicography. I argued that such a multi-disciplinary approach helped to shed light on Brandl's own methodology and on the whole process of data acquisition, data analysis and sampling within the PoW studies. In doing so, I pointed the reader's attention to the obvious flaws regarding the issues of authenticity and ethicality. The chapter also described the kind of technological advancements that facilitated, and, in a way, inspired the creation of this 'voice museum'. However, the Case Study also explained how these greatly conditioned Brandl's methodology, making the recording sessions resemble staged performances, and the elicitation of natural, authentic speech impossible. It also illustrated how the rise of articulatory and acoustic phonetics, the development of dialectology and the new approach to modern language teaching constituted the premises on which the Berliner Lautarchiv was founded. The discussion focused, inevitably, on the author of the phonetic transcriptions, Alois Brandl. In particular, I discussed how the linguistic training he received from Henry Sweet and the influence of the German and Austrian academic milieu in which he operated, were reflected in his transcription, creating a baffling, but particularly interesting corpus. As an aid to my analysis and to draw comparisons between Brandl's efforts and similar, existing works, I also presented an overview of other contemporary works in dialectology. Such an approach facilitated greatly the task of interpreting Brandl's transcription choices, and once again demonstrated how the tension between previous knowledge and the reality of data affects what is heard and what is written.

5.1 Final remarks

This thesis has thus provided an insight into the 'mental worlds' of pre-IPA linguistic commentators and of scholars who operated at a time when the IPA was establishing itself as the agreed standard for phonetic transcription. As noted in the Introduction, this approach has allowed me to provide 'a description and explanation of the history of contextualized linguistic ideas' (Swiggers. 2010: 2). I also believe it demonstrated successfully what a simple <d> could tell us that a spectrogram would not. In the Introduction, I have mentioned a subtitle of the main title of this thesis could have been 'you hear what you know (and what you know is complicated!)'. A similar concept was expressed in a far more polished way by Hanzeli (1969: 81), who stated that '[t]he missionaries' transcription was ultimately shaped not by the sounds but by the letters they knew'. My previous statement should thus be amended to 'you hear *and write* what you know (and what you know is complicated!)'. Far from being only applicable to missionaries in North America, this assertion found its validation in the discussion of other writers, including Brandl. In its wider sense, these statements exemplify the degree to which pre-existing linguistic knowledge influenced the writers, their notations and transcriptions, often constituting a barrier, rather than an aid. This proved true both for the grammatical and syntactical description of languages and, more pertintently to this thesis, to the notation and transcription of speech sounds. With regards to the former, Case Study 1 has discussed how the influence of the Graeco-Roman model occasionally acted as a '*camisa de fuerza*', which attempted to make completely unrelated languages, such as Mohawk, fit into the framework of linguistic analysis provided by the study of

Latin and Ancient Greek. Similarly, with regards to the notation and transcription of speech sounds, Case Study 2 has explored, for example, how the misguided understanding of how vowels are formed initially led Brandl to apply his knowledge of the much-criticised vowel triangle to his transcription of vowels. Again, in Case Study 1, the many North American sounds were so unlike anything ever observed for European languages, that some writers either completely failed to acknowledge them or omitted them altogether. This thesis has demonstrated, however, how overcoming these barriers required inventiveness and ingenuity, presenting the reader with examples of outstanding linguistic understanding. However, it has also not shied away from presenting those instances in which the theory-practice dichotomy was not happily resolved. In addition, this project has also discussed at length how the impact and the interactions of cultural, political and historical factors found a way onto the page, in ways that I was excited to discover. I also believe it demonstrated successfully what a simple <d> could tell us that a spectrogram would not.

5.2 Limitations

While I believe that this thesis has achieved its aims successfully, it is important to note its limitations. First of all, my lack of knowledge of Mohawk has meant that I had to rely heavily on secondary sources for the analysis of the missionary corpus that was the object of Case Study 1. In addition, the impossibility of comparing the linguistic transcriptions in the corpus with the pronunciation of eighteenth- and nineteenth-century Mohawk has also had an impact on the kind and on the quality of the observations I was able to make. Furthermore, due to the variations in the notation of the different traditions, and again, to my being unfamiliar with the language, the number of examples presented had to be limited to those which could be reasonably identified as representing the same word. For this reason, my observations have only included those words which had a counterpart across different authors, and so my analysis was mostly comparative. Similarly, the less-than-ideal quality of the British recording of the *Berliner Lautarchiv* also affected the accuracy of my own analysis. Ironically, in a few instances, I had to rely on the kind of approximation I was attempting to critique. Finally, I believe that my methodology to the corpora had its limitations. My approach has been descriptive, and in doing so it has provided a narrative, with a strong focus on the description of the mental worlds of the authors. While the linguistic data has obviously informed my research and the conclusions I have drawn, it was perhaps given less prominence than it might have been useful.

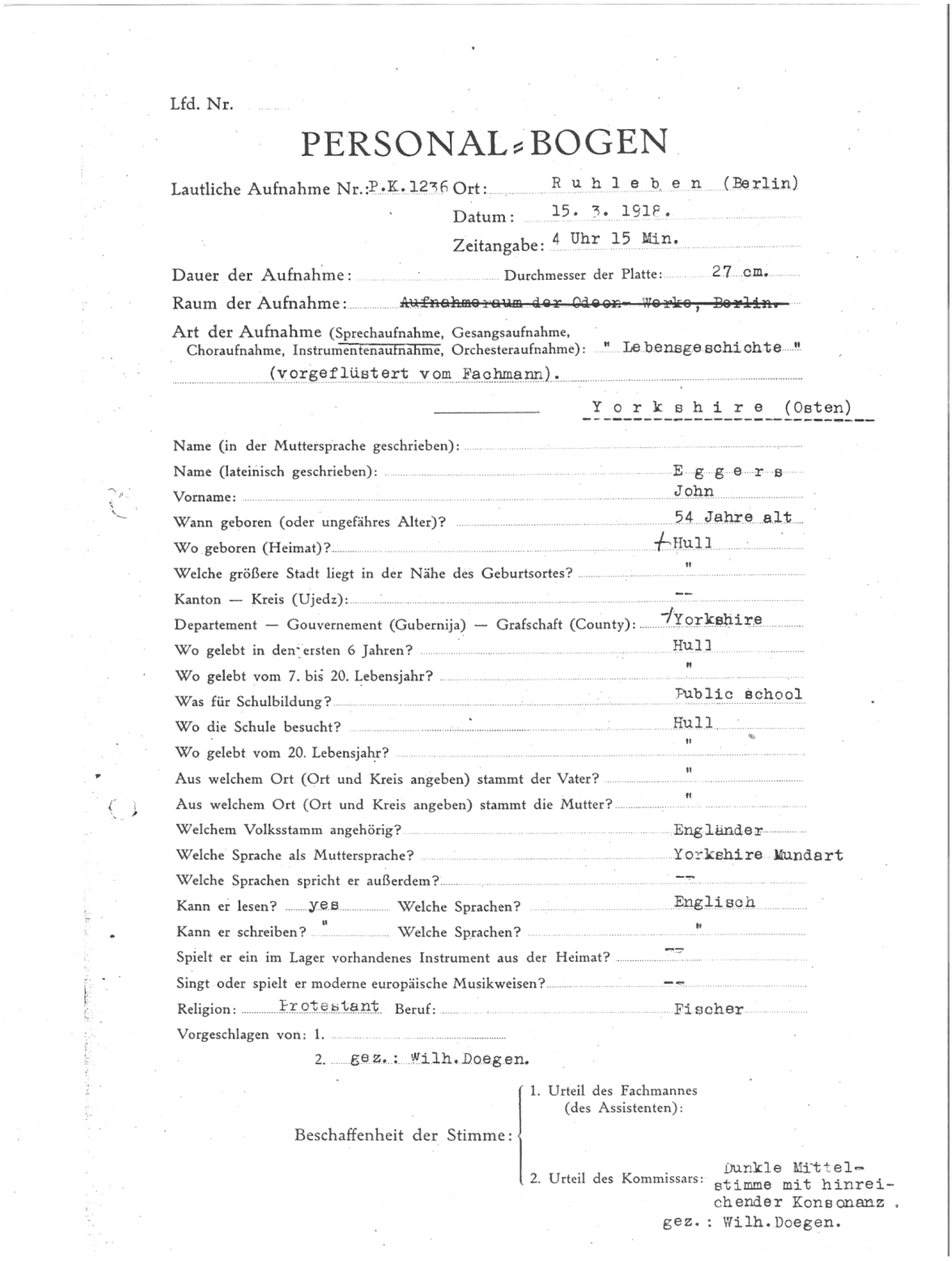
5.3 Further research

While the descriptive approach that this thesis has adopted means that its conclusions are not necessarily replicable, I believe its aims and premises are. For these reasons, I believe it would be particularly interesting, and auspicable, to extend them to other analogous field of research. For example, the application of a similarly comparative approach to the notations of other non-European language across different traditions in the pre-IPA era is a research area worth pursuing. Different cultural, political and historical factors will have been in place, and different mental worlds will have shaped what ultimately appeared on paper. Likewise, it would also be particularly interesting to discover the kind of linguistic theories that guided and informed the transcriptions of the other language experts involved in the creation of the *Berliner Lautarchiv* corpus.

Appendices

The copyright holder of all reproductions of material from the Berliner Lautarchiv (in the Appendices and in other parts of this thesis) is the Humboldt-Universität zu Berlin. The British Library has permission to supply copies of the documentation for private research and educational use only.

Appendix 1



Lfd. Nr.

PERSONAL⸗BOGEN

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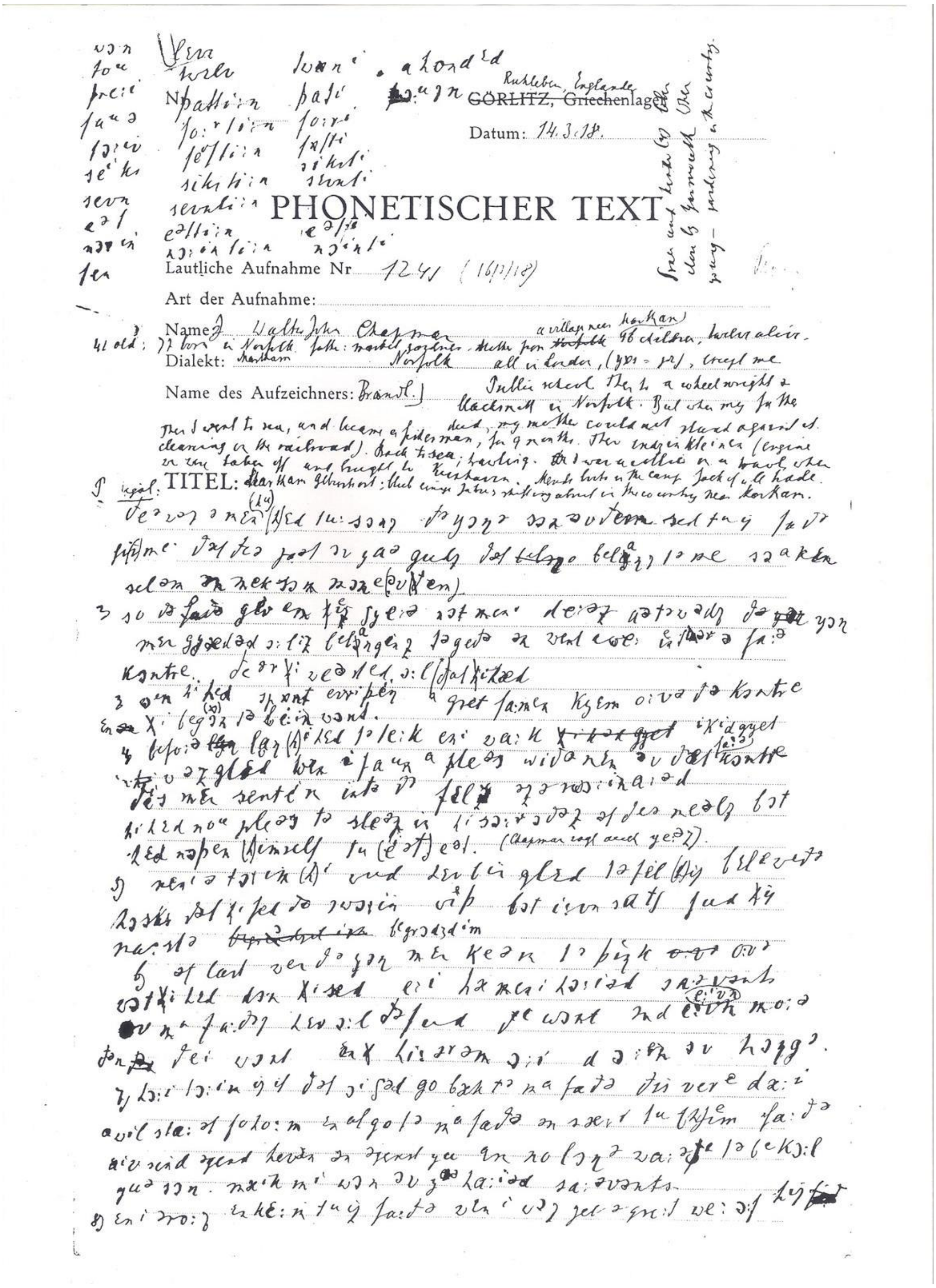
Datum: 15. 3. 1918.
Zeitangabe: 4 Uhr 15 Min.
Dauer der Aufnahme: Durchmesser der Platte: 27 cm.
Raum der Aufnahme: ~~Aufnahmeraum der Odeon- Werke, Berlin.~~
Art der Aufnahme (Sprechaufnahme, Gesangsaufnahme, Choraufnahme, Instrumentenaufnahme, Orchesteraufnahme): " Lebensgeschichte " (vorgeflüstert vom Fachmann).

Yorkshire (Osten)

Name (in der Muttersprache geschrieben):
Name (lateinisch geschrieben): Eggers
Vorname: John
Wann geboren (oder ungefähres Alter)? 54 Jahre alt
Wo geboren (Heimat)? Hull
Welche größere Stadt liegt in der Nähe des Geburtsortes? "
Kanton — Kreis (Ujedz): --
Departement — Gouvernement (Gubernija) — Grafschaft (County): Yorkshire
Wo gelebt in den ersten 6 Jahren? Hull
Wo gelebt vom 7. bis 20. Lebensjahr? "
Was für Schulbildung? Public school
Wo die Schule besucht? Hull
Wo gelebt vom 20. Lebensjahr? "
Aus welchem Ort (Ort und Kreis angeben) stammt der Vater? "
Aus welchem Ort (Ort und Kreis angeben) stammt die Mutter? "
Welchem Volksstamm angehörig? Engländer
Welche Sprache als Muttersprache? Yorkshire Mundart
Welche Sprachen spricht er außerdem? --
Kann er lesen? yes Welche Sprachen? Englisch
Kann er schreiben? " Welche Sprachen? "
Spielt er ein im Lager vorhandenes Instrument aus der Heimat? --
Singt oder spielt er moderne europäische Musikweisen? --
Religion: Protestant Beruf: Fischer
Vorgeschlagen von: 1.
2. gez.: Wilh.Doegen.

Beschaffenheit der Stimme:
1. Urteil des Fachmannes (des Assistenten):
2. Urteil des Kommissars: Dunkle Mittelstimme mit hinreichender Konsonanz.
gez.: Wilh.Doegen.

Appendix 2



Ruhleben, England ~~GÖRLITZ~~, ~~Griechenlager~~

Datum: 14.3.18.

PHONETISCHER TEXT

Lautliche Aufnahme Nr 1241 (16/3/18)

Art der Aufnahme:

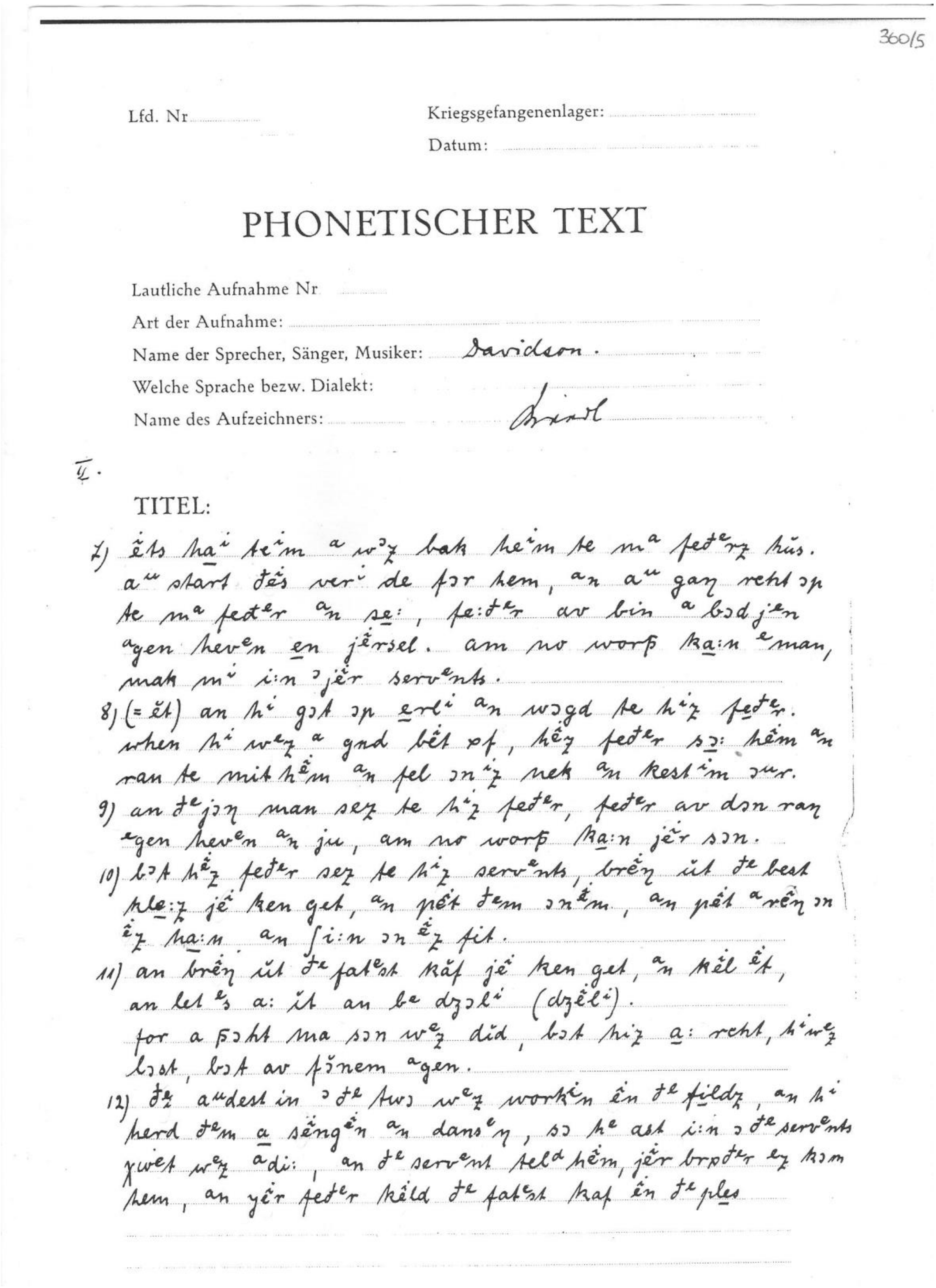
Name: Walter John Chapman

Dialekt: Norfolk

Name des Aufzeichners: Brandl.

TITEL:

Appendix 3



360/5

Lfd. Nr

Kriegsgefangenenlager:

Datum:

PHONETISCHER TEXT

Lautliche Aufnahme Nr

Art der Aufnahme:

Name der Sprecher, Sänger, Musiker: Davidson.

Welche Sprache bezw. Dialekt:

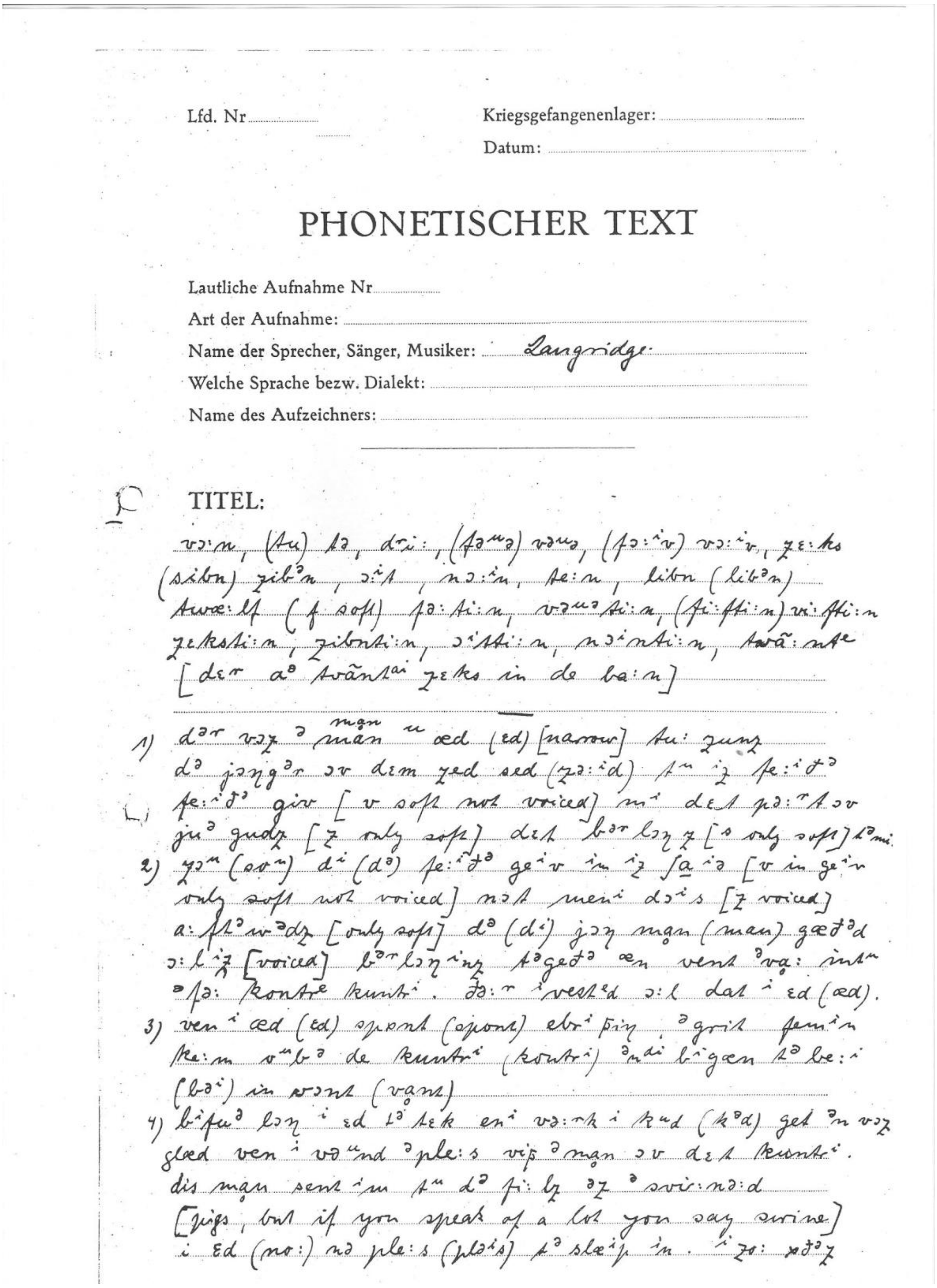
Name des Aufzeichners: Brandl

IV.

TITEL:

7) ĕts ha̲^{i} te^{i}m ^{a}w^{ɔ}z bak he^{i}m te m^{a} fed^{e}rz hűs.
a^{u} start đĕs ver^{i} de fɔr hem, ^{a}n a^{u} gaŋ reht ɔp
te m^{a} fed^{e}r ^{a}n se̲:, fe:đ^{e}r av bin ^{a}bɔd j^{e}n
^{a}gen hev^{e}n e̲n jĕrsel. am no worþ ka̲:n ^{e}man,
mak m^{i} i:n ^{ɔ}jĕr serv^{e}nts.
8) (= ĕt) an h^{i} gɔt ɔp e̲rl^{i} ^{a}n wɔgd te h^{i}z fe̲đ^{e}r.
when h^{i} w^{e}z ^{a} gɒd bĕt ɒf, hĕz fed^{e}r sɔ̲: hĕm ^{a}n
ran te mit hĕm ^{a}n fel ɔn^{i}z nek ^{a}n kest^{i}m ɔ^{u}r.
9) an đ^{e}jɔŋ man sez te h^{i}z fed^{e}r, fed^{e}r av dɔn raŋ
^{e}gen hev^{e}n ^{a}n ju, am no worþ ka̲:n jĕr sɔn.
10) b^{ɔ}t hĕz fed^{e}r sez te h^{i}z serv^{e}nts, brĕŋ ŭt đ^{e} best
ple̲:z jĕ ken get, ^{a}n pĕt đ^{e}m ɔn^{e}m, ^{a}n pĕt ^{a}rĕŋ ɔn
^{e}z ha̲:n. an ʃi:n ɔn ^{e}z fit.
11) an brĕŋ ŭt đ^{e} fat^{e}st kăf jĕ ken get, ^{a}n kĕl ^{e}t,
an let^{e}s a: ĭt an b^{e} dzɔl^{i} (dzĕl^{i}).
for a þɔht ma sɔn w^{e}z dĭd, bɔt hiz a̲: reht, h^{i}w^{e}z
lɔst, bɔt av fɔ̆nem ^{a}gen.
12) đ^{e}z a^{u}dest in ^{ɔ}đ^{e} twɔ w^{e}z work^{e}n ĕn đ^{e} fi̲ldz, ^{a}n h^{i}
herd đ^{e}m a̲ sĕng^{e}n ^{a}n dans^{e}ŋ, sɔ h^{e} ast i:n ^{ɔ}đ^{e} serv^{e}nts
χwet w^{e}z ^{a}di:, an đ^{e} serv^{e}nt tel^{d} hĕm, jĕr brɒđ^{e}r ez kɔm
hem, ^{a}n yĕr fed^{e}r kĕld đ^{e} fat^{e}st kaf ĕn đ^{e} ple̲s

Appendix 4



Lfd. Nr

Kriegsgefangenenlager:

Datum:

PHONETISCHER TEXT

Lautliche Aufnahme Nr

Art der Aufnahme:

Name der Sprecher, Sänger, Musiker: Langridge

Welche Sprache bezw. Dialekt:

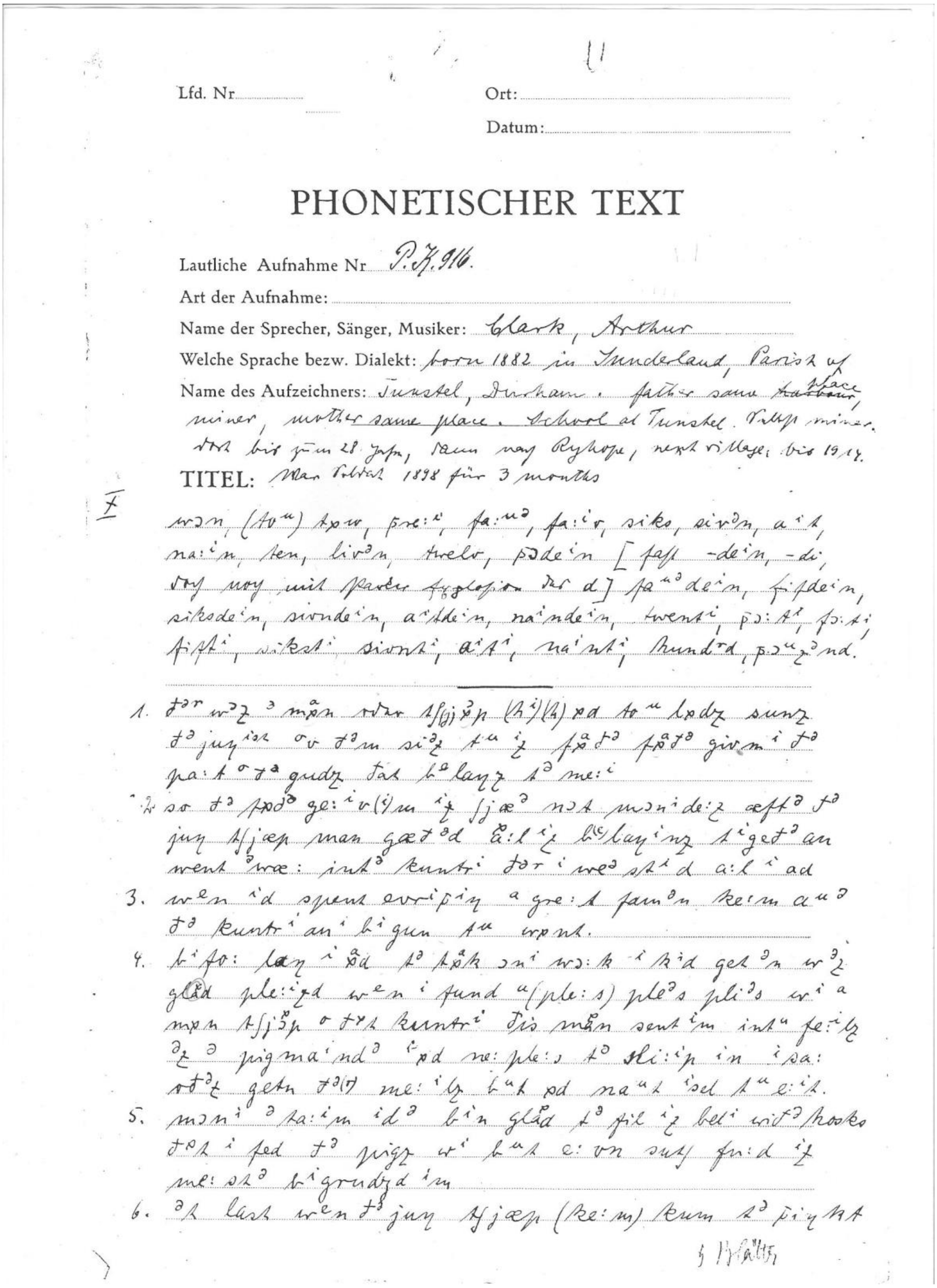
Name des Aufzeichners:

TITEL:

vɔːn, (tu) tə, dʳiː, (fəᵘə) vəuə, (fɔːⁱv) vɔːⁱv, zɛːks
(sibn) zibᵊn, ɔⁱt, nɔːⁱn, teːn, libn (libᵊn)
twæːlf (f soft) fəːtiːn, vəuᵊtiːn, (fiːftiːn) viːftiːn
zɛkstiːn, zibntiːn, ɔⁱttiːn, nɔⁱntiːn, twãːnte
[dɛʳ aᵒ twãntᵃⁱ zɛks in de baːn]

1) dᵊʳ vɔz ə $\overset{\text{mɑn}}{\text{man}}$ ᵘ æd (ɛd) [narrow] tuː zunz
dᵊ jɔŋgᵊr ɔv dɛm zed sed (zəːⁱd) tᵘ iz feːⁱðᵊ
feːⁱðᵊ giv [v soft not voiced] miⁱ dɛt pəːʳt ɔv
juᵊ gudz [z only soft] dɛt bᵊʳlɔŋz [s only soft] tᵊmiː.
2) zɔᵘ (soᵘ) dⁱ (dᵊ) feːⁱðᵊ geⁱv im iz ʃa̱ⁱə [v in geⁱv
only soft not voiced] nɔt meniⁱ dɔⁱs [z voiced]
aːftᵊwᵊdz [only soft] dᵊ (dⁱ) jɔŋ mɑn (man) gæðᵊd
ɔːl iz [voiced] bᵊʳlɔŋⁱnz tᵊgeðᵊ æn vent ᵊvaː intᵘ
ᵊfəː kontrᵉ kuntrⁱ. ðəːʳ ⁱvestᵉd ɔːl dat ⁱ ɛd (æd).
3) venⁱ æd (ɛd) spent (spont) ebrⁱ θiŋ, ᵊgrit femⁱn
keːm oᵘbᵊ de kuntrⁱ (kontrⁱ) ᵊnᵈⁱ bⁱgæn tᵊ beːⁱ
(bəⁱ) in wɔnt (vɑnt)
4) bⁱfuᵊ lɔŋ ⁱ ɛd tᵊ tɛk enⁱ vəːʳkⁱ kᵘd (kᵊd) get ᵊn vɔz
glæd ven ⁱ vəᵘnd ᵊpleːs viθ ᵊ mɑn ɔv dɛt kuntrⁱ.
dis mɑn sent ⁱm tᵘ dᵊ fiːlz ᵊz ᵊsviːnəːd
[pigs, but if you speak of a lot you say swine]
i ɛd (noː) nə pleːs (pləⁱs) tᵊ slæⁱp in. ⁱzoː ɹðᵊz

Appendix 5



II

Lfd. Nr.

Ort:

Datum:

PHONETISCHER TEXT

Lautliche Aufnahme Nr P.K. 916.

Art der Aufnahme:

Name der Sprecher, Sänger, Musiker: Clark, Arthur

Welche Sprache bezw. Dialekt: born 1882 in Sunderland, Parish of

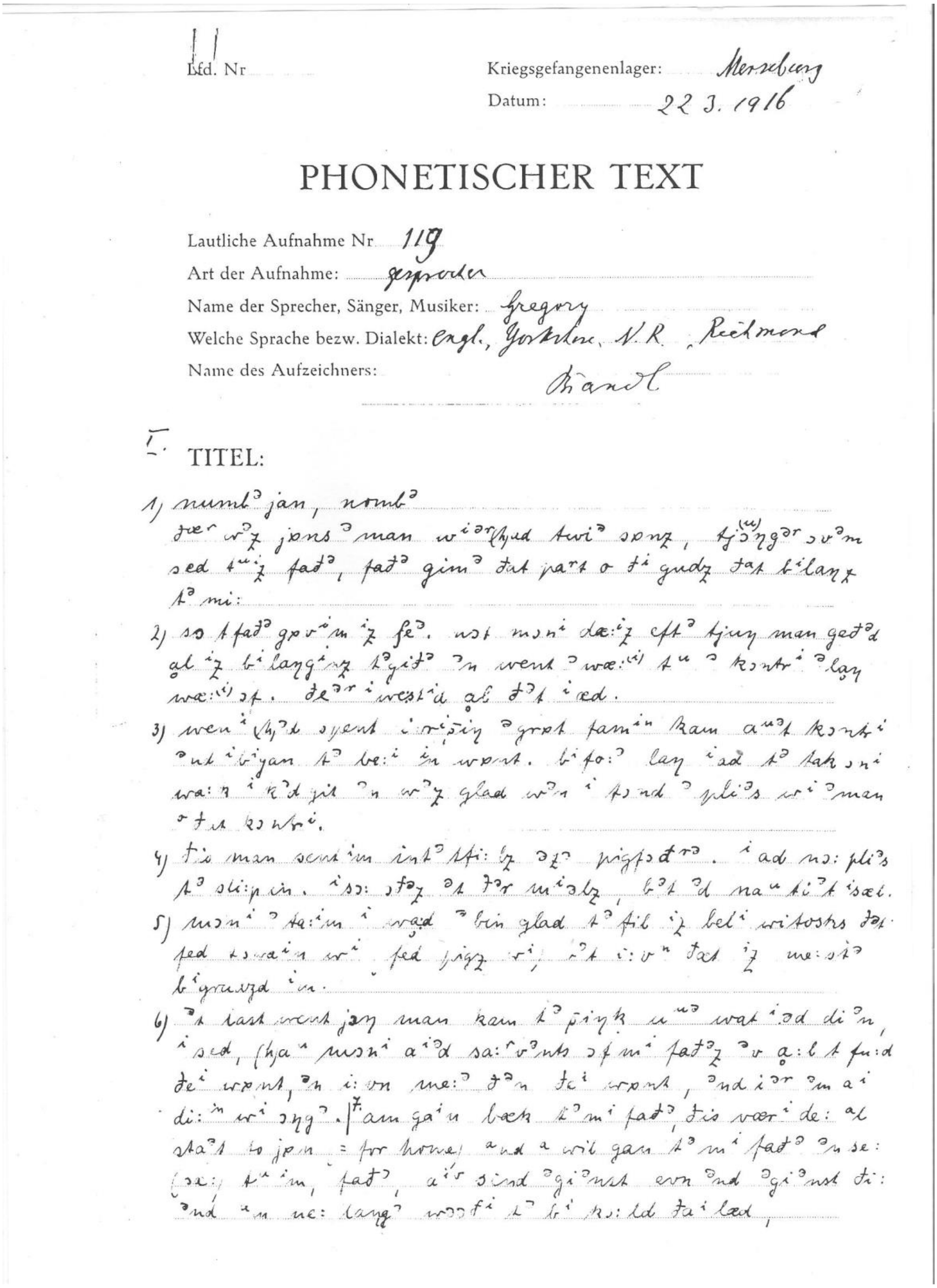
Name des Aufzeichners: Tunstel, Durham. father same ~~harbour~~ place, miner, mother same place. School at Tunstel. Village miner. dort bis zum 28 Jahr, dann nach Ryhope, next village; bis 1914.

TITEL: War Soldat 1898 für 3 months

I

5 Blätter

Appendix 6



11
Lfd. Nr

Kriegsgefangenenlager: Merseburg
Datum: 22.3.1916

PHONETISCHER TEXT

Lautliche Aufnahme Nr 119
Art der Aufnahme: gesprochen
Name der Sprecher, Sänger, Musiker: Gregory
Welche Sprache bezw. Dialekt: Engl., Yorkshire, N.R., Richmond
Name des Aufzeichners: Brandl

I. TITEL:

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