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The 'Idioglossia' Cases of the 1890s and the Clinical Investigation and Treatment of Developmental Language Impairment

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Running Head: History of developmental language disorder

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Abstract

The early history of developmental language impairment in late 19th century Britain is considered through the critical examination of three papers appearing in 1891 by Hadden, Golding-Bird and Hale White, and Taylor. They represent innovative investigations of child language disorders whose themes and concerns are resonant today. The term ‘idioglossia’ was coined to identify this new impairment and reflected the belief by some that these children spoke an invented language. Rather than viewing these children as having some constitutional deficiency, these 19th century physicians were novel in insisting that children with language impairments merited extensive clinical investigation and treatment. Their case descriptions and the subsequent debates regarding classification and prognosis are reviewed. Further consideration is given to how these cases led to questioning the relation between language and speech and other aspects of child development and disorder. Reflection on the early sources of clinical categories provides a new perspective on our current formulations for variation in developmental language trajectories.

Key words: idioglossia, specific language impairment, developmental language disorders, child language acquisition, nineteenth century

1. Introduction

Specific language impairment and developmental speech disorders are of considerable research interest presently and explorations of special populations figure in major accounts of child language (e.g., Bavin, 2010). Currently, the incidence of child speech and language difficulties is estimated at approximately 14% (Broomfield and Dodd, 2004). However, the theoretical, clinical and experimental investigation of developmental language impairments was relatively rare until quite recently.

Forgotten early pioneering work by a small group of clinicians working in London at the end of the 19th century has been uncovered. An examination of how developmental language disorders were considered in the 1890s illuminates present day concerns with the nature of these special populations and how investigating them can contribute to our theoretical understanding of developmental language disorders.

The first detailed description of “defects of articulation” was published in 1891 by Walter Baugh Hadden (1856-1893), physician at Great Ormond Street Hospital for Sick Children, London. He described the developmental language impairment of three boys who were thought to have developed normally in all other respects. This report resulted in a special session organized on the topic at a meeting of the Royal Medical and Chirurgical Society held two months later. At this meeting two other reports were presented on children thought to have the same language impairment. William Hale White (1857-1949) and Cuthbert Hilton Golding-Bird (1848-1939), clinicians at Guy’s Hospital London, presented details of two brothers. They offered the new term ‘idioglossia’ to describe these children’s speech because it appeared that the children were using a language of their own invention. Another Guy’s physician, Frederick Taylor (1847-1929) presented his own case and in his discussion immediately

challenged the appropriateness of this new term. Taylor argued that these children's speech represented a defect of articulation not language invention.

The clinical features of these cases and the subsequent discussion and debate that surrounded this newly identified clinical entity are critically examined. Detailed scrutiny reveals the concurrent theoretical assumptions that lay behind attempts to determine the source of such developmental language disorders. Consideration of the rationale for and the efficacy of the innovative treatments which were developed are also presented. The determination of relevant subject variables, distinctions between task demands and patterns of improvement were all live topics at the end of the 19th century which have yet to be satisfactorily resolved today.

2. Background

The three 1891 papers which form the focus of this article stand among the first to record details of the scientific investigation of developmental language impairment. They mark a sea change in attitude towards children with developmental language difficulties. For although they were otherwise viewed as healthy individuals, these children were admitted to hospital by these physicians because of their lack of progress in language development.

Up to the 1890s, clinical interest had been restricted to children suffering from acquired language disorders due to acute illness. One pioneer in the field of child language disorders was Charles West (1816-1898), founder Britain's first specialist children's hospital at Great Ormond Street, London (f. 1852). In his early textbook on nervous disorders in children he raised a new concern: what might constitute

developmental language delay? (West, 1871) At this time, a decade since Broca's groundbreaking paper (Broca, 1861) drawing a link between language and a localized specialization in the brain, there was great interest in cases of acquired aphasia in children. While published descriptions of acquired childhood aphasia were numerous, no clinical reports of developmental language impairment have been found in extensive searching of the medical literature of this period. It appears that some children who did not show typical patterns of language acquisition were educationally grouped with either deaf or mentally defective children, linking their selective language difficulties to either sensory or intellectual impairments. While other children with such language impairments were sent to professionals who gave lessons in elocution and thus grouped with those wishing to reduce regional accents or improve their public speaking for social mobility. After the appearance of the descriptions of this new clinical entity by Hadden and his colleagues in 1891, scientific interest expanded from previous consideration of acquired disorders to developmental language impairments.

During the second half of the nineteenth century, children and childhood began to be seen as topics suitable for scientific investigation. The establishment of new paediatric hospitals enabled large-scale comparisons and the statistical analysis of a variety of childhood illnesses. In the domain of education, normative views of mental development were evolving at the same time (Turmel, 2008). There was also increasing interest in theoretical questions regarding the relation between development of 'the intellect' (i.e., cognition) and 'expression' (i.e., language) in young children. The newly emerging field of psychology focused on the infant mind, and in particular, observable language function. Before the 1870s there was little empirical description of typical patterns of child language development (Hellal and

Lorch, 2010a). Two decades later, there was clear interest in all aspects of child development from a number of different perspectives.

3. Hadden's "On certain defects of articulation in children"

During his medical studies in the 1880s Hadden had trained in Paris with Jean-Martin Charcot (1825-1893) who was a leading French neurologist lecturing on aphasia at that time (Rummo, 1884). Hadden translated Charcot's book on localization of neurological diseases into English (Charcot, 1883). Upon returning to London, he was appointed assistant physician to both St Thomas's Hospital and Great Ormond Street Hospital with a general interest in disorders of the nervous system. Hadden published "On certain defects of articulation in children, with cases illustrating the results of education on the oral system" in 1891 in the *Journal of Mental Science* (now the *British Journal of Psychiatry*). In his article, Hadden described in considerable detail the speech impairments of three boys treated at St Thomas's Hospital London. Hadden provided theories as to the cause of the condition, discussed the efficacy of his innovative treatment regime and, unusually for the time, reported long term follow-up. Hadden's first case which is reported in the greatest detail is summarized below.

Charles M. was an 11-year-old left handed boy who did not speak at all until he began making sounds when he was between 3 and 4 years. The severity of his language disorder is indicated by the fact that he did not produce more than a few words such as "mamma" and "no" until he was 9 years. Nevertheless, Hadden described him as "bright" and healthy in appearance on admission at the age of 11. (It was noted,

however, that he had “frequent grimaces and sniffings when excited or watched” which today might be taken as an indication of some additional movement disorder.)

Hadden then proceeds to describe the evidence he gathered regarding the child’s language abilities. In considering how Hadden assessed this child’s language it should be kept in mind that unlike today when most Western children are regularly assessed with regard to developmental milestones established by standardized norms, little professional monitoring of child development was typical in either the educational or medical domain at this point in time. Hadden presents a sketch of language and communication abilities through a range of elicitation tasks. The boy’s productions were limited; he could not pronounce his own name clearly. Only his sister was thought to understand his communicative intent. Even simple words with consonant-vowel-consonant (CVC) patterns were so poorly articulated they were unrecognisable by others. However, Hadden noted that syllable units seemed to be clearly perceivable in the speech rhythm.

Hadden provided a transcription of the boy’s pronunciation of the letter names of the alphabet on the day he was admitted to the hospital:

A B C D E F G H I J K L M
ah be ve te ee fish te vatch ah dah vah ve ve

N O P Q R S T U W X Y Z
ve vah pe ve ah fish te ve dedorch fitch vah ve

[the letter V was omitted from the original list] (Hadden, 1891: 97).

There are some inferences that can be drawn from the case report about how Hadden tested the child's language function: for example, it was reported that "He usually pronounced the elementary sounds and the letters of the alphabet in the same manner when tested on different occasions" (Hadden, 1891: 97). The child was also asked to produce writing with both his left and right hands:

"When asked to copy or write at dictation short and simple sentences he would transcribe the first two or three words correctly, and then he would seem puzzled, the remaining words being represented either by unmeaning up and down strokes or by combinations of letters like te, va, etc., which recalled his spoken language. He soon became hopelessly confused and unable to proceed." (Hadden, 1891: 98)

This modality of testing implies the successful acquisition of literacy, however no other details are provided regarding his other academic attainments. It is noted that the boy could write with both the left and the right hands and could also produce mirror writing though not read it. In this observation, Hadden included details which allow us to hypothesize about present-day concerns such as the role of the articulatory-phonological loop in the comprehension and reproduction of speech in the task of writing to dictation (Baddeley, Gathercole et al., 1998).

Hadden goes on to record a small experiment he tried during his examination to probe the relation between the child's articulatory difficulties in speech production and how that impacted on his speech perception, phonological decoding in reading aloud and his reading comprehension:

"He could not understand his own language when I spoke it (taking, for instance, a sentence out of his Lord's Prayer), nor could he make out the

meaning of words or sentences written according to his pronunciation. When reading aloud, the words, like his spontaneous utterances, were unintelligible; but it was clear that he was dividing roughly into syllables, and from questioning there was no doubt that he understood the meaning of both printed and written characters.” (Hadden, 1891: 98)

Taking a step that was rare at the time, Hadden kept the boy in the hospital for seven weeks. The child was given an intensive course of speech training using the ‘Oral Method’ of the deaf. After watching and then imitating movements of the mouth, adjustments were made to his articulators with the use of forceps. At the end of this remediation period, the boy could successfully produce individual letter names but only had a repertoire of a few simple words and phrases. At this point more intensive methods were employed. Hadden placed the boy in isolation, with a pet rabbit and kitten, and provided a nurse dedicated to his speech training for a further two months. He was allowed to look at pictures but reading to himself and conversation in “his own language” were forbidden. Hadden insisted that isolation was an important remediation tool which resulted in faster, more effective and longer lasting effects than if the child had continued to converse with untrained people. The rationale was to provide intensive input from only one speaker. The boy’s progress was reported as follows: “... he could produce separately all the elementary sounds, except z and r, and the vowel sounds in bird and pearl, but the vowel sounds in hat, pear, and fair were still doubtful” (Hadden, 1891: 98).

Remarkably, this otherwise healthy child was kept in hospital for a total of 16 months for treatment. At the end of this period Hadden assessed him to be more fluent and

intelligible. Hadden arranged for his speech training to continue when he returned to school. Even more unusual was that Hadden saw him repeatedly to check on his progress. His final evaluation report suggested that the boy had not relapsed but also had not improved to any degree. Nevertheless, Hadden deemed his speech to have a more natural quality.

Two other children are mentioned more briefly in Hadden's paper. The second case concerned a 7-year-old boy, John S., with an impairment of speech which his mother felt was getting worse as he grew older. The details Hadden reports concerning the family history for this child reveal a number of implied hypotheses about the heritability of certain disabilities and the significance of certain signs. Hadden queried the prevalence of left-handedness in the family and found that one of the other six siblings was. He asked about when the other children in the family and other relations began to talk, if they had had a stammer, and about aspects of their general intelligence and hearing. An uncle was reported as not having begun to speak until he was 7 years; a cousin was said to have had a stammer. The presence of multiple fingers and toes on one sibling was also noted. These case history details imply the search for evidential links between language development, the development of other motor, sensory and cognitive domains to what we would now consider important familial indicators and associated markers of comorbidity for genetic and epigenetic factors.

Hadden's description of this second boy's speech impairment notes the omission of either initial or final consonants in CVC syllables, with particular difficulty with liquids and nasals. He was given speech training similar to that employed in the first

case for three months and was seen to make some progress. Interestingly, Hadden felt that these limited results were due to his younger age and his “stolid and indifferent” disposition.

A third child of only 4 years was also seen in Hadden’s clinic at this time. This much younger child had a strong family history for developmental language difficulties. All the other older siblings were reported to have also been “backward in talking, though not backward in other respects” (Hadden, 1891: 101). There was no history of stammering or left handedness in any of his relations. Two uncles were noted to have died insane. In reporting these details, Hadden’s identification of relevant evidence in the family history includes factors which would today be considered significant for a diagnosis of specific language impairment. The current best practice guidelines of the British Medical Association recommend that when assessing an individual for developmental delay, specific learning difficulties or other cognitive impairments evidence should be sought in parents, siblings, grandparents and the extended family (Parr, 2010). In contrast to the other variables which are still relevant, noting insanity at death in relatives would not factor today. In the 19th century insanity at death was shorthand in some circumstances for tertiary syphilis which was relevant as an infection of the nervous system which could be passed from parent to infant. As such this instance was taken as part of the family history of illness rather than implying a link between mental illness and language disorder per se. A modern parallel might be evidence of maternal AIDS death.

This third case report notes that the child began to speak at 2 years, but was delayed in putting words together until he was over 3 years. In testing, Hadden found him able to

produce all vowels and some consonants but not stops or liquids. The treatment course planned for this child was notably different from the two older cases. Hadden trained the child's mother in the Oral Method for the deaf and had her attend the treatment sessions between the nurse and the second child at the hospital. Nine months later, Hadden revisited the child and found his speech had made some improvement.

Training this third child's mother rather than a medical staff member or teacher to deliver this therapy was another innovation of Hadden's. Throughout 19th century speech defects were a secondary concern for elocution teachers who were primarily interested in the aesthetic aspects of speech. A minority of clinicians began to concern themselves with treatment of acquired language disorders after the advent of aphasia research in the 1870s. One English pioneer was John Syer Bristowe (1827-1895), Hadden's senior clinical colleague at St. Thomas's Hospital, London. Bristowe detailed his ideas about speech therapy in his book *The physiological and pathological relations of the voice and speech* (Bristowe, 1880). However, only limited interest in remediation was shown by clinicians generally at the time as there was a strong belief in spontaneous recovery of language impairments especially in children (West, 1871). Meanwhile, professionalization of speech and language therapy did not emerge until after World War II in England (Howard and Hatfield, 1987). In light of this broader context it is all the more surprising that Hadden did concern himself with aspects of treatment and not only involved teachers and medical staff but also engaged parents in their child's remediation. Only recently has parent involvement in therapy returned after years of exclusion from the clinical domain with

the use of Parent Child Interaction Therapy for stuttering (Rustin and Cook, 1995) and similar techniques.

In his report, Hadden appears to consider all three children to fall into the same diagnostic category. Today it would be likely that the first child's pattern of speech difficulty would be viewed as quite different from the features presented in Hadden's second and third cases. Since the work of Lenneberg (1967) we tend to view a child who does not produce any words until age 9 as in Case 1 as being quite different to one who has difficulty putting words together at age 3. However, the variable of age was not yet viewed as a significant pathognomonic marker for language delay versus disorder (Hellal and Lorch, 2010b). Hadden and his contemporaries did not differentiate between his cases on the grounds of age much less whether there was a phonetic, phonological, syntactic or pragmatic basis for their difficulties as clinicians today might do.

However, Hadden did offer some theoretical discussion on the underlying physiological source of this impairment. He stressed the point that these extreme defects of articulation occurred in children with no mechanical defects of the mouth, nor disease of the auditory apparatus. He insisted that the fault occurred in the central nervous system, in a part of the brain "which co-ordinates the fifty or so elementary sounds into more complex forms" (Hadden, 1891: 103). He drew attention to the analogy between the development of walking and speech which had widespread currency since Darwin introduced the idea with respect to human evolution (Darwin, 1871). He went on to make the observation with respect to developmental neurology that since both capacities needed special muscular coordination, development of

language and gait would both therefore show variation in individual developmental rates.

Hadden also related his observations on these children's difficulties in language development to the theoretical implication of language disorders for understanding the organization of the nervous system. One aspect which Hadden explored in detail was the potential link between language impairment and left handedness. This related to a larger contemporaneous debate on acquired adult aphasia and the left hemisphere dominance for language propounded by his earlier mentor Charcot amongst others.

Hadden drew on J. S. Bristowe's work for his discussion of the cortical localisation for language and the control of motor speech. Hadden theorized that left handedness was an indication of "transposition of the hemispheres" in cases of aphasia with left hemiplegia in left-handed people. He presumed that Charles M. who was left handed had "arrested development" of his speech centre in the right hemisphere. However, Hadden was objective in evaluating his evidence. In taking together the facts of all three of his cases of developmental language difficulties—one who was left-handed, one right-handed with a left-handed sister, and one with no left-handedness—he correctly concluded that there was no necessary causal link between these speech defects and hand dominance.

Hadden's novel approach to treatment relied on his view of developmental language processes and the role of imitation in the acquisition of speech articulation. The role of imitation in child language acquisition became an issue for evolutionary scientists from Darwin (1877) onwards in their attempt to differentiate innate versus acquired

behaviours in human development (Lorch and Hellal, 2010). Hadden was one of the first to explore the use of imitation as a possible treatment for developmental language disorders. The standard teaching at the time was that children with acquired language disorders did not require remediation because these children were thought to spontaneously recover their language abilities as mentioned above.

Hadden insisted that in order to understand what had gone wrong in the development of these children one needed to consider normal child language acquisition. While this approach resonates with the generativist approach of the late 20th century, a century earlier the firmly established standard medical teaching on infant language development had its source in emergent understanding of adult disorders. At this time, stages of acquisition were described with reference to a framework of distinct though connected language centres in the cortex of the brain which had been derived from observations of acquired aphasia and predicated on a model of association psychology (e.g., Bramwell, 1897).

In this view, the initial stage of language development was thought to involve the child learning to associate sounds with particular objects. It was thought that the infant was taught this recognition directly by the mother uttering a word while pointing to the relevant object. With much repetition, the association would be fixed in the child's auditory speech centre. After this initial stage, the motor centre would begin to develop, allowing the child to then reproduce the words they heard in imitation. The importance of the mother's role in language instruction was emphasised, for not only was it thought that the mother actively encouraged the child to repeat her words, but also she "directs the attention of the child to her own lips,

pronouncing the word, which she desires the child to repeat” (Bramwell, 1897: 535). Repetition was viewed as the tool whereby the infant fixed impressions: “the performance of these muscular movements is attended with the production of a new set of in going impressions, the memories of which are stored up in the cerebral cortex” (Bramwell, 1897: 538). This approach gave significant weight to the influence of input on child language acquisition, a view which is currently considered relevant by some researchers (e.g., van den Bogaerde, 2000).

While Hadden considered ‘education’ (i.e., instruction and imitation) necessary in the initial stages of acquiring the sounds of the language, he thought it became less important as the infant’s auditory centre developed. He was original in proposing that:

“It may be taken that, at any rate at first, the young child requires some education in acquiring certain elementary sounds, but later on the more complicated sounds are reproduced, as it were, automatically, and require no special education. It would appear that when the co-ordinating centre, which presides over the mechanism of the elementary sounds concerned in speech, has received a start, its further development proceeds without special guidance, and that its evolution depends on the integrity of the auditory perceptive centres.” (Hadden, 1891: 102)

4. Defining developmental language impairment

At a meeting of the Royal Medical and Chirurgical Society held two months after Hadden’s paper was published, several additional cases were presented of boys thought to have the same defect of speech. The event was marked by the use of the newly invented phonograph to present recordings of cases under the treatment of Drs.

Hale White and Golding-Bird. Another London physician Frederick Taylor contributed his own case. Following this, there was an extended discussion of the cases by all those in attendance to which Hadden also contributed. A published record of both the formal presentations and the contributions in the discussion appeared in the *British Medical Journal* (Anonymous, 1891c) and the Proceedings of the Society. In addition to commenting on the individual cases, this wide-ranging discussion reveals underlying theoretical assumptions about neurological underpinnings of language development.

Hale White and Golding-Bird presented the cases of two brothers aged 9 and 10 years old. The younger child was brought to the clinicians for advice on his future education. The parents had previously been advised that owing to his dumbness he should be sent to the Deaf and Dumb Asylum. However, the clinicians determined that he was neither deaf nor dumb; rather he was able to articulate sounds but they were unintelligible to others. The older brother was said to be somewhat less impaired and their elder sister was reported to be also mildly defective in speech. Hale White and Golding-Bird described their assessment of the younger child, Alfred James P. in detail:

“When first seen by us the child was, as now, healthy, and except for his speech, perfectly normal. He is intelligent and well educated for his position; he can do simple sums, read to himself, and write well from dictation. No physical defect is discoverable, and his tongue and larynx are normal in form and action. He is right-handed... and does not stammer.” (Hale White and Golding-Bird, 1891: 183)

It is reported that the mistress of the school attended by the boys had found the 9-year-old incomprehensible, and had tried and failed to improve his articulation. Both the boy's mother and his nurse were convinced that he understood all that was said to him, but could not produce intelligible speech. Hale White and Golding-Bird discuss his impaired language:

“Directly he was spoken to it was evident that he was not like other children. His intonation and mode of articulation were perfect, but he employed sounds to express his words which were unlike those of English, or of any language known to us. If he were speaking at such a distance that one was not surprised at being unable to catch every word, his speech gave the impression, by the regular inflexion of his voice and the occasional repetition of the same sounds, that it was the speech of someone conversing intelligently in an unknown tongue. In close conversation the same impression held, but the strange sounds that he uttered soon showed that he was speaking a language entirely his own. He was asked to read an article from the newspaper, and he did so with a properly modulated voice as though he understood it, but what he said was quite incomprehensible. Reading it the second time he exactly reproduced the same sounds to express the various words”. (Hale White and Golding-Bird, 1891: 183)

In contrast to Hadden's first case, the younger brother demonstrated the ability to write English correctly to dictation. Employing the same method as Hadden, the child was asked to recite the alphabet and the Lord's Prayer. This rudimentary form of standardized testing enabled the clinicians to make comparisons with the pronunciation of other children, and through repeated performances, to chart any

progress made. The child was followed for more than a year. His speech improved though the defect was still very evident when last seen. These authors adopted Hadden's approach to treatment through focussed and sustained tuition in articulation. Isolation from his siblings and those who wouldn't correct his mistakes was believed vital for success. They used phonograph recordings to directly capture the quality of the child's speech and played them for others to judge. The *Lancet* notice on "The Phonograph in Medicine" reported that Hale White and Golding-Bird used the instrument to good effect to demonstrate the initial defect and contrast this with the improvement effected by treatment (Anonymous, 1891b). Unfortunately, these recordings have been lost.

In their discussion, Hale White and Golding-Bird did not consider this impairment in language development to be in any way analogous with that of acquired aphasia. Instead, they propose a new term 'idioglossia' to distinguish this type of impairment. The coining of the new medical term was considered noteworthy enough to be included in an editorial entitled "A New Disease" which appeared in the *Journal of the American Medical Association*:

"Two English physicians—Dr. Hale White and Mr. Golding-Bird—have recently described an affection to which they give the name "Idioglossia." It appears that the patients hear well, and express themselves in articulate sounds, but such sounds are unlike those of any known language. The patients really have a language entirely of their own, in which there does not seem to be any confusion, i.e., the sounds given forth have an intelligent application, and the same sound always has the same meaning. The discussion before the Royal Medical and Chirurgical Society was varied, some of the members

contending that the so-called language of those affected was but a modification of the English tongue, and was to be accounted for by a lack of development in that particular direction.” (Anonymous, 1891a)

It is interesting to note that in this article there is no reference to children but only patients, and their age is not mentioned. As pointed out in the editorial, the term was suggested because the authors had the impression that the children were speaking a unique language invented by themselves:

“[The boy] always employs the same sounds or combination of sounds to express aloud any given syllable or word in our language, and however often he is asked to repeat it he always employs the same sound or combination of sounds. Inasmuch as this peculiarity constitutes the essential feature of this kind of case, and inasmuch as he thus always speaks a language of his own, we would venture to suggest the word "idioglossia" as a good name for this condition.” (Golding-Bird and Hale White, 1891: 185)

After these brothers had been presented by Golding-Bird and Hale White at the Royal Medical and Chirurgical Society meeting, there was a second presentation made by Frederick Taylor, Golding-Bird's assistant physician at Guy's Hospital. Taylor had a specialist interest in child language, being both physician at the Evelina Hospital for Sick Children (f. 1869) and physician to the Royal School for Deaf Children. At the meeting, Taylor described his own case of an 8-year-old boy who he thought had symptoms similar to the cases he had examined with Golding-Bird at Guy's. Taylor was of the view that Hadden's cases as published in the *Journal of Mental Science*,

the cases of Hale White and Golding-Bird, and his own all displayed the same form of impairment.

The 8-year-old boy, Haislett S., described by Taylor showed no physical defect, nor was he left-handed: "With the exception of "dad-dad" and "mam-mamin" he showed no signs of talking till about two years of age; and then began to make known his wishes by signs or by an imperfect speech, in which unintelligible words were used" (Taylor, 1891: 191). The child was thought to understand all that was said to him, but the only person who could understand his speech was his older sister. Taylor used the same assessment conventions as the other clinicians, testing the boy's speech production with the pronunciation of the names of the letters of the alphabet and recitation of the Lord's Prayer. Unlike Hadden, Taylor didn't insist on isolation as a part of his treatment regime. He did stress the importance of careful oral instruction and providing good speech examples for the boy to copy. The boy was reported to have some success in modifying his productions in response to such modelling after a month of treatment in the hospital and was discharged. However, when reassessed two and a half weeks later, he had lost all the gains he had made. The boy was readmitted for another two weeks of treatment at the end of which was discharged because he could now recite the alphabet "fairly well." Six weeks later Taylor brought the boy back to the hospital to reassess his speech. After an interval of two months the boy was seen yet again and given the same tasks. Taylor characterized the nature of the impairment as "... some defect in the central articulating processes, which incapacitates the subject of this disorder for the perfect co-ordination or transmission of impulses to the articulating muscles" (Taylor, 1891, p. 195). The reported cases of

idioglossia were considered so significant an original contribution as to be highlighted in the annual review which appeared in the *Lancet* (Anonymous, 1892).

After these cases were presented at the Society meeting, Hadden spoke at some length in the subsequent discussion that took place. Hadden stated that he had seen three additional cases of this type in the last 18 months. He had now come to the conclusion that his first case should be viewed as somewhat different from all the other children being discussed because of his additional difficulties in writing to dictation. Hadden also suggested that this defect in articulation should be considered as distinct in both in its presentation and cause from other speech defects such as stammering on the one hand, or the speech of general paralysis (i.e., tertiary syphilis) on the other. In this comment, Hadden makes it clear that he is using the term articulation as Broca (1861 [1960]) and others did to indicate a linguistic rather than motoric basis to the impairment.

Some of the focus of concern in the general discussion at the meeting surrounded terminological and diagnostic considerations. Taylor rejected the term idioglossia proposed by Hale White and Golding-Bird on a number of grounds. First, he stressed that rather than being a defect of language (i.e., French versus English) this was a defect of speech. In making this point Taylor reveals the difficulty then experienced in determining the distinction between language and speech. These terms were not technically refined in their meaning or usage as they are presently. Second, he rejected their characterization of the children's productions as novel innovations. Taylor agreed with Hadden's view that their speech varied but that the variations were within certain limits. He insisted:

“...to my mind they are certainly defects of articulation and not a new language. In my own case it seems so easy to recognise that most of the mispronunciation comes from a shirking of the more difficult sounds, especially the substitution of soft sounds for hard ones, or the omission of a consonant entirely in some cases. The improvement... bears in the same direction.” (Taylor, 1891: 195)

Additional objections were raised to the term *idioglossia*, firstly by William Henry Pye-Smith (1840-1914) another Guy's Hospital physician. He rejected the etymology of the term as well as the implications. In response, Hale White admitted that the term had initially been suggested to him by Dr. Edwin Cooper Perry (1856-1938), Fellow of the Royal Medical and Chirurgical Society (1890) who was the Dean of the Medical School and Superintendent of Guy's Hospital at the time. Thus, the term was accepted in virtue of Perry's general authority rather than its conceptual validity. This issue about the appropriateness of the term *idioglossia* to designate such a developmental speech impairment was to be raised repeatedly over the ensuing decades.

There was great attention given to this series of papers on *idioglossia* and the issue spread beyond London almost immediately (e.g., Wyllie, 1892). Two years later, Hadden presented the case of another boy, aged 6 years with a more extreme defect of speech and above average intelligence at the Clinical meeting of the Medical Society of London on January 30, 1893 (Anonymous, 1893). Hadden contrasted this new case with those that had been presented at the meeting in 1891. This boy's speech was less consistent in his pronunciation, and Hadden felt it was significant that he did not

always substitute the same sounds for the same words. He also noted that he had seen 6 or 7 other such cases to date and had found no familial pattern. Hadden's question regarding whether such developmental language disorders have a heritable component has been continuously raised. Current molecular genetic techniques confirm the complexity of this issue (e.g., Vernes, Newbury et al., 2008).

5. Discussion

This new practice of viewing childhood disorders of language development as a medical issue as initiated by Hadden rapidly spread. Walter Stacy Colman (1864-1934) delivered a lecture at GOSH which was published in the *Lancet*. In his prefatory remarks, Colman asserted:

“The subject of impediments of speech is one which receives scant attention in the ordinary text-books of medicine, being too often regarded as lying outside medical practice and as beyond the resources of therapeutics. The treatment of sufferers is almost entirely relegated to lay "professors" of elocution and voice culture, each with his secret "system" of cure. It is, however, as unreasonable for a physician to ignore and refuse to treat these complaints, and to hand them over to laymen, as it would be for a surgeon to refuse to undertake the treatment of deformities and to leave them to the instrument-maker.” (Colman, 1895: 1419)

Colman rectified the omission of this topic from the medical textbooks by contributing a chapter on the subject to one of the major compendiums of the day, *A System of Medicine* edited by Thomas Clifford Allbutt (1836-1925), Regius Chair of Physic at Cambridge (Colman, 1899). He stated that idioglossia can not be very rare

as he had seen 15 cases in his own practice (already). This comment reflects the general experience that once a new phenomenon is formally identified, it is subsequently found to be surprisingly common. These children had previously been invisible to the medical gaze, but suddenly, clinicians were finding numerous cases of such developmental impairments. The naming of a disorder and creation of a treatment regime provided impetus for viewing atypical language development as a medical condition rather than an unfortunate constitutional limitation. A similar pattern of evolution occurred with changes in responses to children with dyslexia and autism in the second half of the 20th century.

These cases in the early 1890s appear to be some of earliest recorded evidence of children who displayed specific language impairments being viewed as requiring medical attention and receiving hospital based treatment over a long period of time. Extensive searching through the published literature from 1860 onwards has not revealed any report prior to Hadden's. In addition, inspection of the archive of case notes from the Great Ormond Street Hospital from 1852 onwards shows no prior admissions of such cases. It is notable that Charles West himself did not report any cases of developmental impairment during his period of tenure at the hospital from 1852-1877 although he was the leading expert on acquired child language disorders in the country. No record has been found of a child whose only apparent difficulty was delayed or abnormal language function being treated by a physician before 1891.

Throughout the decade following the publication of Hadden's three cases, a growing number of children with developmental language difficulties were reported. These children were typically diagnosed as either 'language delayed' or 'congenital aphasic'

rather than with Hale White and Golding-Bird's label of idioglossia. The notion of a selective impairment of language development in otherwise healthy children began to take hold in Britain by the end of the century. However, a divergent view was expressed by the eminent American neurologist Bernard Sachs (1858-1944), who was editor of the *Journal of Nervous and Mental Disease* and one-time President of the American Neurological Association (1894).

In the section on developmental language disorders in his textbook *A Treatise on the Nervous Diseases of Children* (Sachs, 1895), he appeared to deny the possibility of a pure developmental language disability:

“In as much as speech is the function of special areas of the brain, it would be natural to expect that cases would occur in which speech alone was defective without the impairment of any other cerebral function, but I have not seen a single such instance although I have carefully watched for it for years.”

(Sachs, 1895: 472)

Theoretical arguments for this formulation which question the likelihood of 'pure' developmental disorders are echoed in current literature (e.g., Frith and Happé, 1998).

Sachs highlighted the necessity of careful testing by detailing a case of his own, initially thought to be one of selective language impairment, but following examination was found to have impaired motor control and visual perception:

“...a boy, of six years, was brought to me who was said to come of a family that acquired speech late in life. He was not able to utter a single word distinctly, but mumbled a few indistinct sounds which the mother claimed to be able to interpret. Otherwise the boy appeared tolerably bright, evidently

understood language well enough, and the mother, herself an intelligent woman, claimed that he was fully the equal of any other child of his age barring the mere fact of deficient education. I was willing to accept her statement. On closer examination it was discovered that the boy exhibited other than mere speech defects; that he was not able to use the scissors properly, not able to handle knife or fork, and that he was entirely ignorant of the difference between colours. It is wise, therefore, not to make the diagnosis of an exclusive speech defect unless a very careful examination has been made.” (Sachs, 1895: 472)

Cases continued to appear in the literature offering a variety of characterizations and interpretations (e.g., Drummond, 1915; Pritchard, 1911). The main question was whether the impairment in language production was primarily a case of faulty imitation due either to motoric or auditory limitations and amenable to treatment, or rather was in fact an invented language or distortion of their mother tongue. Interest in such children appears to wax and wane throughout the 20th century with considerations of the issues appearing at the turn of the century (e.g., Wyllie, 1894; Bastian, 1897), in the 1930s (e.g., Wolf, 1934; Worster-Drought and Allen, 1930) and again in the 1950s (e.g., Morley, 1957; Ingram, 1959). Seventy five years after the announcement of this new disease termed idioglossia, it was still found to be a significant event. *The Journal of the American Medical Association* republished the original notice again in its historical section in 1966 (Anonymous, 1966). Surprisingly, the disputed term continued to be used throughout the 20th century and to the present day. It is still applied to cases of developmental language disorder but

now is more often applied to the circumstance of a private twin language (e.g., Bakker, 1987).

The papers by Hadden, Hale White and Golding-Bird, and Taylor highlighted the novel medical interest in developmental language disorders in children around the end of the 19th century. It is notable that initially these children were all thought to share the same problem in language development. However, they included children of very different ages, ranging from those as young as 3 to some as old as 11 years. Some had a history of severe delay in beginning to speak, while others produced speech which was fluent but unintelligible. However, further refinement of classification began almost immediately and was an area of active interest in the first half of the twentieth century. This issue about the heterogeneity of children which fall into this category is still being grappled with today. In addition, while it was observed that there was a prevalence of boys, there was a lack of agreement about the status of left-handedness or family history. The incidence of left-handedness and its possible connection to language developmental difficulties is also still an active topic of debate.

There is no evidence in descriptions from this period of certain features of what today is termed 'specific language impairment' (e.g., Leonard, 2000). Currently, clinicians' assessment of syntactic and lexical features of both production and comprehension would be seen as crucial to determining the nature of a child's developmental language difficulties. Impairment of grammatical inflection and word order are seen as diagnostic criteria for this disorder. However, in these historical cases the clinicians focused on phonetic aspects of speech almost exclusively and did not assess these grammatical aspects nor did they investigate their receptive language abilities.

Clinical examination of these properties of the language system was very rudimentary even in adult acquired aphasia until later in the 20th century. Testing of syntactic and lexical aspects of language production specifically and investigation of auditory comprehension more generally did not feature in clinical assessment batteries until after World War I (e.g., Head, 1926; Weisenburg and McBride, 1935). In contrast, there was a high level of interest in their patients' attainment in literacy relative to other cognitive and linguistic aspects of performance. Each of these clinicians included tests of their patients' oral reading ability and written dictation in their case reports. This reflects a wide-spread interest in literacy both in the clinical literature and in English society generally at the end of the 19th century (Barrière and Lorch, 2004).

6. Conclusion

The shift from viewing these children as having some unfortunate constitutional limitation to objects of scientific investigation requiring medical treatment was the significant contribution of these clinicians in 1891. They kept transcriptions of speech changes over time using standard materials for their assessments. Further, they used the new technology of the phonograph to make lasting records capturing the actual sound of the speech for verification and dissemination for the first time. Novel approaches to remediation were developed for these patients based on contemporaneous theories about the function of the nervous system and the role of input. From the 1890s onwards interest in developmental language disorders in children became of increasing importance, and numerous professionals from various fields turned their attention to how children talk, or in certain cases, fail to. This marks the beginning of the modern investigation of developmental language disorders.

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