

## STUTTERING AND BILINGUALISM, THE EARLY HISTORY

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## ЗАЕКВАНЕ И БИЛИНГВИЗЪМ: РАННА ИСТОРИЯ

**Abstract.** With the increase of bilingualism worldwide, speech language pathologists currently have a fair chance of being confronted one day with bilingual individuals who stutter. In line with this evolution, more and more studies are now being published dealing with stuttering and bilingualism. The relationship between stuttering and bilingualism is a topic, however, that has already received some interest for more than two centuries. The purpose of the present paper is document some of the early history of stuttering and bilingualism and as such reveal the roots of contemporary studies.

**Keywords:** stuttering, bilingualism, stuttering history, Moses, Itard

**Резюме.** В последно време, разпространението на билингвизма в света нараства и на езиково-говорните патологии се отдават достатъчно възможности да се изправят пред проблема за билингвизма, срещан при лица със заекване. В съответствие с еволюцията на учението за билингвизма, се публикуват все повече изследвания за връзката му със заекването. Това е топка, получила интерес и разглеждана преди повече от два века. Целта на настоящата статия е документиране на ранна история за заекването и билингвизма с цел разкриване на основите на съвременните изследвания в тази област.

**Ключови думи:** заекване, билингвизъм, история на заекването, Моисей, Итард

## **Introduction**

Bilingualism nowadays is a rather common phenomenon with the amount of bilingual speakers in the world outnumbering monolingual speakers (De Bot & Kroll, 2002; Edwards, 2004). In this respect it is only normal that also speech language pathologists pay attention to bilingualism. The chance that as a speech language pathologist one will have to deal with clients who speak more than one language is quite high. As far as stuttering is concerned, information on bilingual speakers has long time been very scarce but interest is gradually growing. More and more studies are being published dealing with stuttering and bilingualism. Some studies are academically oriented and relate to topics such as the prevalence of stuttering in bilinguals and bilingualism as the possible cause of stuttering. Other studies are more clinically oriented and investigate aspects of assessing and treating stuttering in bilinguals (Van Borsel, 2011).

The first actual study on bilingualism and stuttering seems to date back from 1937. In a paper entitled “The relation of bilingualism to stuttering” Travis, Johnson and Shover reported on a survey they conducted in the public schools of East Chicago, Indiana. In a group of 4827 children, they found a lower prevalence of stuttering in children who spoke only English than in those speaking English and one or two foreign languages, suggesting some causal relation between bilingualism and stuttering. The authors pointed out, however, that it is not certain that this difference was solely due to the factor of bilingualism and that it should not be overlooked that 97.20% of the bilinguals did not stutter.

While the study of Travis, Johnson and Shover (1937) was, as far as we could ascertain, the first research publication on stuttering and bilingualism, it was certainly not the first time the topic was referred to in the literature. The purpose of the present paper is to document some of the earlier history of stuttering and bilingualism and as such reveal the roots of contemporary studies.

In what follows we will use the term “bilingualism” in its broadest sense, i.e. referring to a condition that ranges from “the total, simultaneous and alternating mastery of two languages” to “some degree of knowledge of a second language in addition to spontaneous skills which any individual possesses in his(her) first language” (Siguan & Mackay, 1987, p. 13). By extension we will use the term “bilingualism” to refer to multilingualism as well. Although the main focus of this paper is on stuttering, some references to cluttering will be discussed too.

## **Method**

The data for the present paper were collected from early publications on stuttering. To track down potentially useful sources, a number of articles, books and websites on the history of speech language pathology in general and stuttering in particular were consulted. They included Klingbeil (1939), Eldridge, (1968),

Rieber and Wollock (1977), Bobrick (1995), Wingate (1997), Brosch and Pirsig (2001), Héral (2006), Judy Duchan's History of speech –language pathology ([www.ascu.buffalo.edu](http://www.ascu.buffalo.edu)) and Judith Kuster's Stuttering homepage (<https://www.mnsu.edu/comdis/kuster/stutter.html>). The search was directed at publications as far as possible prior to 1937 (publication year of the study by Travis, Johnson and Shover) and limited to publications in Latin, English, French and German. Potentially useful references thus identified were searched and subsequently scrutinized for the occurrence of passages on bilingualism and stuttering. Any relevant information was gathered and incorporated into one of three sections, each covering a time span: Ancient History (3000 BC-500AC), Medieval age (500-1500) and Modern period (1500-...). For the latter period, which contains the overlarge majority of information, a further classification according to thematic themes was used. To document the history of bilingualism and stuttering as accurately as possible, we systematically included quotes from the original sources. In case of publications in other languages than English, quotes were either supplemented with an English translation or preceded by a paraphrase. In addition, the full name of each of the author(s) of the publications referenced is provided, as well as date of birth and death (when available).

### **Ancient History (3000 BC-500AC)**

The history of stuttering and bilingualism is a relatively young history. This has more to do with the late development of the field of speech language pathology than with the phenomenon of bilingualism as such. There is ample evidence that bilingualism existed already in ancient society (Adams, 2003). However, before the 19<sup>th</sup> century writings on speech disorders and stuttering are sparse (Wingate, 1997; Eldridge, 1968). Moreover, much of the literature before this era suffers from a lack of precision in terminology. No differentiation is made between stuttering and other types of speech disorders (for instance articulation problems) nor between different types of fluency problems, and the use and meaning of terms also appear to vary from author to author. As pointed out by Rieber and Wollock (1977) terms did not refer to clinical entities but rather to symptoms whose description was more important than the particular names given to it. As a consequence, the study of the earliest history of stuttering is inevitably fraught with speculation. This certainly applies to ancient history.

It is hard to determine when the word “stuttering” was used for the first time but one may nonetheless assume that the condition was known already in ancient times. The oldest written reference to stuttering possibly dates back to about 2000 B.C. and is to be found on an Egyptian Hieroglyph. It concerns the image of a human figure together with two abstract symbols which make up the form “ketket”, meaning “to speak haltingly” or “to walk haltingly with the tongue, as one who is sad” (Eldridge, 1968). Klingbeil's (1939) list of historical references to speech dis-

orders contains a number of other ancient sources assumed to describe stuttering. They include authors such as Hippocrates (450-357 BC), Aristotle (384-322 BC) and Plutarch (c 46-c120), the latter describing the cure of the Greek orator Demosthenes by the actor Satyrus. As far as stuttering and bilingualism are concerned, one case of ancient history seems to be of interest.

### **The case of Moses**

Handbooks and texts listing famous people who stutter almost always include the Hebrew prophet Moses (see for instance Van Riper, 1971; Silverman, 1996; Shapiro, 1999; Bobrick, 1995). The possibility that Moses was a person who stutters is based on a line in the old Testament. In the book Exodus ( $\pm 1250$  BC, Ch. 4, v 10) it is narrated how Moses attempts to convince God that he is not the person to lead the Israelites out of Egypt. The reason given by Moses is that he has never been a man of words and that he is “*slow of speech, and of a slow tongue*” (Hertz, 1930) or in another translation of the original Hebrew text “*heavy of mouth and heavy of tongue*” (Tigay, 1978).

Whether Moses really was a person who stutters has been the subject of considerable debate over the years. While some believe that Moses indeed presented with stuttering or at least consider it quite likely, others are of the opinion that he had a communication disorder of a structural or organic nature, or that he did not have a speech defect at all. Interestingly, both in order to defend the view that Moses presented with stuttering as well as to deny it, bilingualism has been called upon as a supporting argument. Thus Leon-Sarmiento, Paez, and Hallett (2012) state that Moses had to learn at least three languages, first Hebrew and Egyptian (from his biological and adoptive mother, respectively) and later Midianite language (from the place where he fled to after having killed an Egyptian slave master). They refer to the possibility that stuttering may be more prevalent in bilinguals than in monolinguals and that learning two languages in early ages of life, such as Moses had to do, may predispose to stuttering. According to Rashbam, however, a 12th century French rabbi and biblical commentator, Moses had simply forgotten his Egyptian (Tigay, 1978). A similar view was expressed later by Freud (1939), in his work on Moses and monotheism. According to Freud “*Moses spoke another language and was not able to communicate with his Semitic Neo-Egyptians without the help of an interpreter at the beginning of the dealing*” (p.35)

It certainly is debatable that the passage with Moses in Exodus qualifies as one of the oldest references to stuttering. In any case, it is one of the oldest sources that gave rise to discussion about stuttering and bilingualism.

## Medieval age (500-1500)

In Medieval Age little progress was made in the domain of speech disorders and references to stuttering remain extremely scarce. Klingbeil's survey (1939) hardly contains 4 entries for the period between 500 and 1500. Physicians at that time generally adopted Hippocrates' doctrine of humours according to which illnesses were the result of an imbalance of the four bodily fluids (black bile, blood, yellow bile, and phlegm). Also stuttering was viewed in this way. In addition one usually associated stuttering with an affection of the tongue, like the French physician and surgeon **Guy de Chauliac (c1300-1368)**, for example. In his *Chirurgia Magna*, a book of seven volumes on surgery from 1363 de Chauliac ascribed stuttering to spasm, ulcers and other affections of the tongue but believed that it most often resulted from paralysis and humidity in the nerves and muscles ("...*balbuties licet possit venire a spasmo, ulceribus, et ab aliis passionibus linguae, ut plurimum tamen venit a paralyti, et ab humiditatibus in nervis, et musculis*") (p. 322). It's obvious that given the limited interest in stuttering in general at that time stuttering and bilingualism was not yet an issue.

## Modern times (1500-1945)

Also in early modern times little progress is seen. This does not mean that stuttering was not alluded to but overall the number of contributions continued to remain limited and authors who did write on stuttering mainly repeated ideas of ancient and medieval predecessors such as for instance the Italian physician **Hieronymus Mercurialis (1530-1606)** in his *De Morbis Puerorum* ("On the diseases of children", 1583) and the British philosopher and statesman **Francis Bacon (1561-1626)** in his *Sylva Sylvarum*, a book on natural history from 1627. Both authors attributed the cause of stuttering to moisture or dryness of the tongue.

Near the end of the 18<sup>th</sup>, beginning of the 19<sup>th</sup> century, however, more publications appear on speech disorders including stuttering. The profession of speech language pathology gradually develops and the first education programs are founded. From this era onward one also finds the first observations and recommendations regarding stuttering and bilingualism. In line with the fact that speech language pathology as a profession originated in Europe, these first references are primarily found in European publications and appear to center around four major themes: the manifestation of stuttering in bilinguals, bilingualism as the cause of stuttering, the treatment of stuttering in bilinguals, and bilingualism and foreign languages as a cure for stuttering.

## The manifestation of stuttering in bilinguals

Bilinguals who stutter do not necessarily stutter in both languages or do not always stutter to the same degree or in the same way in both languages (Nwokah, 1988). Quite early several authors have referred to the various possible patterns in this respect, describing examples they observed. In some instances the author was a person who stutters himself and thus reported about his own experiences.

### More stuttering in a foreign language

A very early and perhaps even the oldest example is that of **Moses Mendelss hohn (1729 - 1786)**, a Jewish philosopher and grandfather of the famous composer Felix Mendelss hohn. In a publication from 1738, Mendelss hohn commented on the case of a German theologian who became aphasic and in addition described at length some speech disorders, including stuttering. Mendelss hohn was of the opinion that the origin of stuttering is psychological rather than mechanic or organic. He provided several observations to support his view, mentioning that he was in the best position to make these observations and as such referring to the fact that he was a stutterer himself. One of his observations was that stuttering tends to occur more in a foreign language than in the mother tongue: *“we are more exposed to it when speaking in a foreign language which we are not so familiar with”* (Mendelss hohn, 1738, p. 56, translated from German: *“Man ist demselben in einer fremden Sprache, die uns nicht so geläufig ist, mehr ausgesetzt als in der Muttersprache”*).

Other early examples of the fact that there may be more stuttering in a foreign language were rendered by Joseph Frank, Rudolph Schulthess and Marc Colombat de l'Isère. **Joseph Frank (1771-1842)**, a German physician and also musician, studied and worked in Pavia, Vienna, and Vilnius. He published a number of books, one being a work in Latin with a chapter on *“De vitiis vocis et loquelaē”* (“about disorders of voice and speech”). In this chapter Frank briefly mentions the case of a certain Polish professor who spoke fluently in his mother tongue but immediately stuttered whenever he started to speak French (*“Professor aliquis polonus suo idiomate fluenter loquitur, quo primum vero notissima quoque ei lingua gallica loqui initiator, statim balbutit”*) (Frank, 1826, Part II Vol II sect I cap II). The example of Frank gained some fame as it was picked up and referred to by other authors (see for instance Schulthess, 1830, p. 102 and Ssikorski, 1891, p. 261)

The Swiss physician **Rudolph Schulthess (1802-1833)**, apart from referring to the case of Frank, reported an observation in his brother, a teacher of French. In German the stuttering of Schulthess's brother had spontaneously diminished considerably with increasing age, but his fluency problem continued to hinder him often in French so that he longed to be completely free of it: *“...mein Bruder, bei dem das Uebel mit dem fortschreitenden Alter bereits von selbst bedeutend abgenommen hatte. Da es ihm aber als Lehrer der französischen Sprach in einer öffentlichen*

*Schule doch öfters noch hinderlich war, so wünschte er sehnlich, dessen ganz ledig zu werden.*” (Schulthess, 1830, p.160-161)

**Marc Colombat de l'Isère (1797-1851)**, a French physician who specialized in voice and speech disorders, recorded how inhabitants of China and especially Indo-China never stutter when they speak their mother tongue while some individuals of these two countries do present with stuttering when speaking another language (*“c’est que les peuples qui habitent la Chine et surtout la Cochinchine ne bégaièrent jamais quand ils parlent leur langue qui est toute muscical, tandis que quelques individus de ces deux nations ont fourni l’exemple du bégaiement dans un autre idiome que le leur”*) (Colombat de L’Isère, 1840, p. 362). Colombat further described in some detail the case of a young man named Chaigneau, The man was born in Indo-China from a French father (the old consul of Indo-China) and an Indochinian mother and spoke both French and Indochinian from early childhood. However, he stuttered a lot in French while he expressed himself with ease in the Indochinian language (*“mais il bégayait beaucoup en Français, tandis qu’il s’exprimait avec facilité dans l’idiome cochichinois”*), and this in spite of the fact that he used French more often (*“la langue française dont il se servait plus habituellement”*) (p. 363) Like the case of Frank the example of Colombat was subsequently referred to by others (see Romberg, 1853, p. 365, Kussmaul, 1877, p. 231 and Potter, 1882, p. 84).

Several years earlier Colombat already described how, due to the necessity to be more attentive and to think more about what they are going to say, clutterers speak better when they are forced to use a language they are not so familiar with as their mother tongue (*“Il en est de même de ceux qui sont forcés de parler une langue qui ne leur est pas aussi familière que leur langue naturelle;”* Colombat, 1830, p. 87). And he related the case of a French professor at a faculty of law who cluttered while teaching a course in French law, but on the contrary spoke very distinctly when teaching a course in Roman law in Latin (*“J’ai connu un professeur suppléant à une faculté de droit, qui bredouillait lorsqu’il faisait un cours de droit français, et qui au contraire parlait très-distinctement quand il faisait en latin un cours de droit romain;”*). Interestingly, Colombat remarks that the reverse would have happened if instead of cluttering, this person had stuttered because the time it would have taken to translate his thoughts would have further increased the slowness of his speech (*“L’inverse aurait eu lieu, si, au lieu de bredouiller, il avait balbutié, parce que le temps qu’il aurait mis pour traduire ses pensées aurait encore augmenté la lenteur de leur émission”*). In other words, according to Colombat clutterers speak better when they using a foreign language while stutterers speak worse.

A somewhat later example is that of the German politician and co-recipient of the Nobel prize, **Ludwig Quidde (1858-1941)**. In an article entitled “Erinnerungen eines Stotterers” (“recollections of a stutterer”) published on December 20 th, 1925 in the *Vossische Zeitung*, a Berlin newspaper, Quidde reports about his own stuttering: “Some traces of the affliction remained. At a time when I spoke German almost

*perfectly, I was very embarrassed when I had to speak a foreign language. While from 1890 to 1892 I was secretary of the Prussian Historical Institute in Rome, I stuttered, as far as I remember, only in Italian, and this often quite severely*”(translated from German). The original German text says: “Gewiss Reste des Uebels blieben. Zu einer Zeit, da ich in deutscher Sprache fast tadellos sprach, brachte es mich in grosse Verlegenheit, wenn ich mich einer fremder Sprache bedienen musste. Während ich 1890-1892 Sekretär des Preussischen historischen Instituts in Rom war, habe ich nach meiner Erinnerung nur auf Italienisch gestottert, und das oft ziemlich arg.” There exists a published English version of Quidde’s article (see *Living Age*, 328, February 13, 1926, p. 360-363) which, unfortunately, is a free and at times inaccurate translation.

### Less stuttering in a foreign language

That stuttering occurs less in the mother tongue than in a foreign language seems to be the most common situation (see Van Borsel, 2011). Yet, some individuals do show the opposite pattern, i.e. more stuttering in the mother tongue than in a foreign language. Also this pattern was observed and described already in the early writings on stuttering. In his publication of 1830, **Rudolph Schulthess** not only referred to the case of Frank and that of his own brother to illustrate that some people only stutter when they speak a foreign language but also added that on the contrary some individuals show less stuttering, when for instance speaking the standardized variety of German that is used in formal context (hochdeutsch) compared to speaking their local dialect: “Im Gegentheil gibt es auch Leute, welche weniger stottern, wenn sie z.B. hochdeutsch, als wenn sie in dem Dialect ihrer Heimath sprechen.” (Schulthess, 1830, p. 102).

At about the same period, the British scholar **James Wright (?-?)** in his “*Treatise on the causes and cure of stuttering, with reference to certain modern theories*” remarked: “that any one should stutter in his native tongue, and yet speak a foreign language with perfect freedom of utterance, may appear strange” but added: “Such, however, was the case in the instance of Sir George Braithwaite Boughton; he stuttered when he spoke in English, but spoke most fluently when he conversed in French” (Wright, 1835, p.22).

A later example is that of the American author **George Andrew Lewis (1870-1915)**, who in his book *Home cure for stammerers* from 1907, said about his own stuttering: “In translating foreign languages into English I found that I had almost no trouble in giving the translation” and further: “I could also read Latin without hesitation or sign of stammering” (p.338).

### Explanations

Why some bilinguals who stutter stutter only in one language or stutter less in one language than another, is not really clear. Various hypotheses have been put

forward, also already in the early writings. Quite in line with what some present day studies suggest (see for instance Jankelowitz & Bortz, 1996; Scott Trautman & Keller, 2000; Schäfer, 2008; Lim, Lincoln, Chan, & Onslow, 2008), Moses Mendelss hohn attributed the higher frequency of stuttering in a foreign language to a lesser degree of proficiency, where he spoke of “einer fremden sprache, die uns niet so gelaufig ist” (a foreign language *which we are not so familiar with*) (Mendelss hohn, 1738, p. 56).

More than a century later, in his book “*Neueste Heilmethode des Stotterübels*” (1841), the German author **F. Blume (?-?)** also refers to a lack of proficiency to explain the higher frequency of stuttering in a foreign language. According to Blume dysfluencies in people who stutter occur because of a lack of harmony between thought and speech. Individuals who stutter show dysfluencies because they either are not yet aware of what and in what form they want to say something or because the vocabulary is not available to them as required to immediately give their thoughts the right expression in speech: “*sie haben sich entweder noch nicht zum klaren Bewußtsein gebracht, was und in welcher Form sie es sagen wollen, oder der Sprachschatz steht ihnen nicht so zu Gebote, wie es dessen bedarf um den Bewegungen ihrer Seele sogleich den rechten Ausdruck in der Sprache geben zu können*” (p. 27). This, says Blume, also consitutes the most natural explanation for the phenomenon that people who in their mother tongue or dialect speak fluently and without hesitation come back to stuttering as soon as they want to use a foreign or not so familiar language or dialect, especially if this happens with awareness, shame or shyness: “*Hieraus läßt sich wohl am Natürlichsten die Erscheinung erklären, daß Menschen, welche in ihrer Muttersprache oder ihrem Dialekte ganz geläufig und ohne Anstoß sprechen, in den Fehler des Stotterns verfallen, sobald sie sich einer ihnen fremden, noch nicht geläufigen Sprache oder Mundart bedienen wollen, zumal wenn dies mit Befangenheit, Schaam oder Schüchternheit geschieht*” (p. 27).

It is of course important to distinguish between genuine stuttering and non-fluency due to insufficient proficiency as the Northern Irish physician **Henry McCormac (1800-1886)** already pointed out in 1828: “*But to confound, as some have done, the difficulty of executing some sounds in one’s own or in strange languages, such as the en of the French, the H of the Spanish or Arabic, or the ich of the German, not to mention others, with the vice of stammering, is somewhat thoughtless, not to say absurd.*” (p. 18).

A quite different reason why in bilinguals fluency may vary according to the language they speak, was given by **Samuel Otway Lewis Potter (1846-1914)**, an American physician born in Ireland and severe stutterer himself. Discussing Colombat’s case Chaigneau, the son of the old consul of Indo-China, Potter believed that the man stuttered less in the Indochinian language because of the influence of his mother: “*Colombat mentions the case of the son of a French father and a Chinese mother, who stuttered violently in French, but spoke his mother’s language*

*with the greatest facility, corroborating my theory of the beneficial influence exercised by the mother over the speech of the child*". (Potter, 1882, p.84).

Colombat himself, however, had ascribed the difference in fluency to characteristics of the languages involved. That Chaigneau stuttered a lot in French while he expressed himself with ease in the Indochinian language and that some inhabitants of China and Indo-China only presented with stuttering when speaking another language, was according to Colombat, due to the fact that Chinese and Indochinian are tone languages with a lot of musicality. Actually, Colombat made reference to the inhabitants of China and Indo-China and to the case of Chaigneau in order to prove the influence of singing on stuttering ("*Pour prouver l'influence du chant sur le bégaiement, nous croyons devoir signaler une particularité très remarquable*" (Colombat , 1840, p. 362). Furthermore Colombat seems to suggest that this observation was especially true for the Indochinian language (*c'est que les peuples qui habitent la Chine et surtout la Cochinchine ne bégaièrent jamais quand ils parlent leur langue qui est toute musicale*) because of the higher number of tones distinguished in that language ("*La langue cochinchinoise a six tons*" and "*La langue parlée des Chinois a deux tons de moins*") (Colombat , 1840, p. 362).

Some other authors too pointed out language characteristics to explain why stuttering may occur more in one language than another, though not always referring to bilingual speakers. One of them was **James Hunt (1833-1869)**, the British speech therapist who had the famous author Lewis Carroll among his clients. According to Hunt, who also mentions the case of Chaigneau, the absence of stuttering among inhabitants of China was not due to the musicality or rhythm of the language as Colombat had claimed, but to fact that it is a monosyllabic language: "*It appears to me, that if it be true, as has been asserted on very slender grounds, that there are no stutterers in China (...), the circumstance is not so much owing to the sing-song, nor to the rhythmical structure of the Chinese language, but chiefly to its being a mono-syllabic tongue.*" (Hunt, 1861, p. 38). Hunt further presumed that stuttering would occur more frequently among speakers of what he called "harsh and guttural" languages than among speakers of "soft flowing" languages, ("*It is presumable, that a soft flowing language may not produce such a percentage of stutterers as a harsh and guttural one*"). Also the observation that stuttering does not occur in uncultivated nations as reported by some, may according to Hunt be related to linguistic aspects: "*... it is not easy to say so whether this immunity is owing to the more ample physical development of the buccal cavity in savages, to the nature of their dialect, or to their freedom from mental anxieties and nervous debility, the usual concomitants of refinement and civilization.*" (Hunt, 1861, p. 39)

The earlier mentioned **Samuel Potter** too reported the influence of language characteristics on the prevalence of stuttering, referring to the lesser occurrence of stuttering in Chinese ("*Nations whose language is mono-syllabic and rhythmical, as the Chinese, suffer very slightly from defects of speech*") and adding a personal observation: "*During several years spent among the Indian tribes of Arizona, I*

observed many cases of stuttering among the Apaches and the Maricopas, whose language is harsh and consonantal; but never one among the Pimos, whose speech consists of vowel-sounds almost entirely." (Potter, 1882, p. 84).

That he did not stutter when translating foreign languages into English or when reading Latin, had according to **George Andrew Lewis** to do with the fact that these activities required so much attention that he forgot about his speech defect. About his fluency in translating he said: "*I attribute this to the fact that one of the principal things in translating is to get good sense, and in my desire to obtain this, I forgot to a degree that I had any difficulty in speaking*" and about the absence of stuttering in reading Latin: "*I am of the opinion that this is because in reading Latin one has to be very careful (...)*" (Lewis, 1907, p.338).

**Ivan Alekseevich Ssikorski (1842-1919)**, a psychiatry professor and anthropologist from Kiev (Ukraine), was of the opinion that there are probably many reasons why patients do not stutter to the same degree in the different languages they are able to read or speak ("*... bei der Untersuchung von Kranken kann man sich leicht davon überzeugen, dass die Stotteranfälle nicht in allen den Sprachen gleich stark auftreten, in welchen der Kranke lesen oder sprechen kann. Den Grund hierzu bilden wahrscheinlich sehr viele Bedingungen*"). He mentioned the different combination of sounds, more or less closeness of the languages involved, the involvement of one or the other language as a tool in reasoning, and the higher or lower frequency of use of the languages ("*es handelt sich hier vor allem um eine verschiedene Combination von Lauten, um die nähere oder weitere Verwandtschaft der Betreffenden Sprachen, um die Annäherung der einen oder der andern Sprachen als Gedankenwerkzeug an die Ideenwelt des Kranken und um den mehr oder weniger häufigen Gebrauch einer der Sprachen;*") (Ssikorski, 1891, p. 262-263).

### Equal stuttering in different languages

Although bilinguals who stutter usually stutter more in language than the other, one may yet come across individuals who show a similar fluency failure in the different languages they are using. Recent examples referring to this condition are for instance Bernstein Ratner and Benitez (1985), Lebrun, Bijleveld, and Rousseau (1990), Woods and Wright (1998) and Roberts (2002). As the latter studies also show, however, it may be difficult to assess that stuttering frequency is equal in both languages and clinical impressions may be quite misleading (Van Borsel, 2011).

In any case, the condition of similar stuttering in different languages was already referred to as early as 1841, namely by the German surgeon **Johann Friedrich Dieffenbach (1792-1847)**. According to Dieffenbach stuttering was caused by spasms of the tongue and his cure consisted of sectioning the root of the tongue. In an open letter addressed to the learned society the *Institut von Frankreich* (Institut de France) he reports his experiences, describing the surgical procedures he used as well as detailing some cases. One of these, actually his very first case, was that

of a 13-year-old boy, Friedrich Doenau. The boy stuttered so severely since his early childhood that his stuttering was considered untreatable. Dieffenbach described how the disfluency varied (*“bald war es stärker bald schwächer”*). Sometimes the boy could not utter a single sound (*“bald trat ein völlige Unvermögen ein, auch nur einen Laut hervorzubringen”*), sometimes he stuttered on this, then on that sound or word (*bald stotterte er bei diesem, bald bei jenem Laut oder Wort*) and this happened apparently irrespective of the language he spoke: *“sowohl bei deutschen als auch bei lateinischen oder französischen Wörtern”* (Dieffenbach, 1841, p. 6).

## **Bilingualism as the cause of stuttering**

The possibility that bilingualism might cause stuttering is a topic that has been addressed in a number of studies over the years. We did already mention the study of Travis, Johnson and Shover (1937). A similar study was conducted some years later by Stern (1948) in Johannesburg (South Africa). In a group of 1861 children a stuttering prevalence of 1.66% was found in monolinguals and a prevalence of 2.16% in children who had been bilingual prior to age 6 years, again suggesting a causal relationship between bilingualism and stuttering. Still more recent studies investigating the role of bilingualism in the development of stuttering include that of Dale (1977), Karniol (1992), Au-Yeung, Howell, Davis, Charles, and Sackin (2000), and Howell, Davis, and Williams (2009).

When the idea that bilingualism might cause stuttering was first launched and by whom is hard to say but certainly spread as early as the 19<sup>th</sup> century. In 1861, the British speech therapist **James Hunt** already put forward the possibility that mixing languages can cause stuttering: *“In Great Britain I think there is an excess of the average amount of stutterers in the north, where our language meet the Gaelic. Where a mixed language is spoken, the majority are unable to speak the one or the other perfectly, and the result is, that they find a difficulty at both, whence arises a certain hesitation, the forerunner of stuttering, If this be true, we might, a priori, expect a large number of stutterers and stammerers at the frontiers of countries in which the languages differ; but I am not aware whether such be the fact.”* (Hunt, 1861, p. 38-39).

In a somewhat later publication, **George Andrew Lewis** pointed out that anxiety to speak the languages correctly might be at the origin of stuttering in bilinguals. In his book entitled *“A home cure for stuttering”* he, wrote: *“A condition engendering stammering among children is, when a child is subject to the strain of learning to talk where several tongues are spoken”* (Lewis, 1907, p. 30). He subsequently cites a case from *“an authoritative source”* not mentioning its name, which he considers illustrative of the condition: *“A case I met with in the course of medical practice, was the three and one-half year old son of a German father and a French-Swiss mother The child was born in New York. Hearing three languages at once, as you may say, he developed an uncertainty and lack of concentration that*

lead to the spasmodic condition. The act of choosing a word, whether it be from a foreign language or from our own, coupled with the anxiety to get just the right word, produces hesitation that is so near akin to stammering that it sometimes runs into it.” (Lewis, 1907, p. 30-31.).

It’s interesting to observe that even more than a century later, several authors consider the same underlying factors as James Hunt and George Andrew Lewis in their discussion on bilingualism as the cause of stuttering. See for instance Lebrun and Paradis (1984) and Agius (1995) for the role of mixing of languages and Dale (1977) on pressure to correctly speak a language.

## **The treatment of stuttering in bilinguals**

The treatment of stuttering in individuals who speak more than one language is quite challenging and raises several questions. For instance, if an individual stutters in two languages, does one need to treat each language or may one assume that treatment and improvement in one language will automatically lead to more fluent speech in the other language too? And if one decides to treat only one language, which one does one choose? The language that was acquired first, is used more often, presents less stuttering, presents more stuttering, ...? Moreover, practical problems may play a role such as one’s own knowledge (or rather lack of it) of the languages involved. Very often treatment in one language appears to be the most viable option. While the above issues have not been systematically studied in the 19th century, some relevant observations were already reported, for instance by John Thelwall, Hermann Klencke, and George Andrew Lewis.

In 1812 already, the English lawyer and elocutionist **John Thelwall (1764-1834)** made reference to the fact that therapy in one language does not necessarily leads to fluency in another. In his *Illustrations of English Rhythmus*, pointing out that the lack of attention to rhythm may be at the origin of stuttering, Thelwall mentioned how he had to treat one of his pupils in Latin after being cured in English: “*I had one pupil, in particular, who after having been pretty well cured of his English impediment, was obliged to come to me again (from his college tutor) to remedy his Latin stammering; that by teaching him how to reconcile theory with practice, I might enable him to apply the principle of cadence to a Latin Hexameter, as well as to an English heroic.*” (1812, p. viii-ix).

That generalization of fluency into another language does not always take place automatically was also observed by the German physician **Hermann Klencke (1813-1881)**. In his book “*Die Heilung des Stotterns nach meiner rationellen, didactisch-medicinischen Methode*” (The treatment of stuttering according to my rational, didactic medical method), published in 1860, Klencke described how over the years he treated 148 people who stutter. Most of them were of German nationality but there were also 5 French, 2 Belgians, 3 Swiss from French Switzerland, 2 Vachs (more in particular from Bucharest), 1 Hungarian, 1 Lombard, 1 English-

woman and 2 Swedes. In some of these foreigners Klencke noticed that when stuttering was overcome in one language, improvement in another language only took place when the languages shared certain sounds and syllable characteristics: “*Be-merkens werth ist es, dass, wenn das Stottern in der einen Sprache, wodurch wir uns verständigten und die wir als Conversationssprache benutzten, überwunden war, dasselbe in der anderen Sprache regelmässig nur dann sich einstellte, wenn Töne und Sylbencharaktere vorkamen, welche jener Sprache eigenthümlich sind*” (p. 153).

**George Andrew Lewis**, on the other hand, provided some examples of treatment in bilinguals that apparently resulted automatically in fluency in both languages. In “*The origin of stammering*”, published in 1897, Lewis presented the therapeutic method he developed including a chapter with *Testimonials and press notices* endorsing his approach. In two of these testimonials reference is made to bilingualism. A certain Henry Doerfing wrote: “*Dear Mr Lewis: I write to express my thankfulness to you for the relief you have afforded me. Although I stammered for many years and my difficulty of speech was certainly increasing, you have completely cured me. I feel that I cannot recommend your system of treatment too highly to others and shall always be pleased to speak with gratitude toward you and your school. I find in conversation that I speak without stammering as well in German as in English.*” (p. 112-113). Another person, Louis S. Wagner, wrote: “*Dear Sir, It is with the greatest pleasure that I have to let you know that I am completely cured of my stuttering and stammering. After having taken my first lesson at the Lewis Phonometric Institute, at the hour of 10 o'clock A.M. on Monday last, at 11 o'clock I could speak without the least hesitation.*” and concluded his letter with the postscript: “*I speak equally as well in English as I do in French*” (p. 86).

## **Bilingualism and foreign languages as a cure for stuttering?**

### **Itard's advice**

Since the recognition of stuttering in ancient history, people have tried all kind of remedies to cure the condition. A quite special approach and probably unique to the 18<sup>th</sup>/19<sup>th</sup> century is learning and (temporarily) using another language in order to overcome stuttering. The person most notably associated with this approach is the French physician and educator of the deaf **Jean Marc Gaspard Itard (1775-1838)**. In a work entitled “*Mémoire sur le bégaiement*”, published in 1817, Itard described various therapeutic strategies, the use of which depending on the client's age and the severity of the stuttering. In very talkative children with confused and defective articulation Itard recommended to search for a means to set limits to the immoderate use of speech, have the child spell, read out loud and quietly, forcing it to return often to the articulation of the syllables that are most difficult to pro-

nounce. But this approach, he said, did not outrank the one he noticed twice with full success, namely to confide the child exclusively to a foreign governess who, being able to speak only the language of her own country, forces her pupil to learn that language slowly and to give up for some years the language he learned too suddenly: “*Toutefois ce moyen ne vaut pas celui dont je me suis avisé deux fois avec un plein succès; c’est de confier exclusivement l’enfant à une gouvernante étrangère qui, ne sachant parler que la langue de son pays, force son élève à l’apprendre lentement, et à renoncer, pour quelques années, à celle dont il a fait un trop brusque apprentissage.*” (p. 138). Once he also advised, in addition, to let the organs of speech rest completely in silence for a year: “*J’ai une fois joint à ce conseil celui de laisser reposer entièrement, dans le silence, les organes de la parole...*” (p. 138). Itard further added that these remedies bring about but little change once beyond adolescence.

Several authors afterwards referred to Itard’s recommendation, be it sometimes very briefly and not always very accurately. In their “*Nouveau éléments de pathologie médico-chirurgicale ou traité théorique et pratique de médecine et de chirurgie*”, a very popular handbook amongst medical students at the time, the French physicians **Louis Charles Roche (1790-1875)** and **Louis Joseph Sanson (1790-1841)** mentioned: “*M. Itard a guéri deux enfans, en les faisant confier à des gouvernantes étrangères, et les forçant ainsi à faire un nouvel apprentissage de la parole*” (1828, p. 242). **Colombat de l’Isère** (1830) mentioned Itard’s advice together with the mechanical approach he developed (a little fork to be placed in the mouth in order to strengthen the muscles): “*Le savant M. Itard a conseillé de faire apprendre une langue étrangère et de mettre une entrave mécanique à la langue, afin de fortifier cet organe en gênant ses mouvemens.*” (p. 155). In Germany, the **E.N.T. Eduard Schmalz (1801-1871)** wrote about Itard in his *Beiträge zur Gehör- und Sprachheilkunde* (1846): “*Bei Kindern hat er einige Male mit gutem Erfolge das Mittel angewendet, dem Kinde eine fremde Gouvernante, die nur ihre Sprache versteht, zu geben; hat auch ein Kind während eines ganzen Jahres nicht sprechen lassen.*” (p. 134).

Another short reference is to be found in a publication of the French pedagogue and founder of the Institution des bègues in Paris **Claudius Chervin (1824-1896)** who, curiously enough, specifies the languages of the governesses to confide a child to: “*M. le docteur Itard conseille, pour combattre le bégaiement, de confier les enfans à des gouvernantes étrangères, lesquelles parlant l’italien, l’espagnol ou l’anglais, obligeraient ainsi ces enfans à abandonner brusquement la langue maternelle.*” (1867) (p. 36).

Also the French physician **Louis Alfred Becquerel (1814-1862)**, a stutterer himself, refers to Itard in his *Traité du bégaiement et des moyens de le guérir* (1843) though far from accurately. He does not speak about confiding a child to a foreign governess. According to Becquerel Itard had suggested “to learn a foreign language” and “to express oneself in this language as often as possible”: “*Ainsi Itard*

*conseillait-il d'apprendre une langue étrangère, et de s'exprimer le plus souvent possible dans cette langue. Il obligeait ainsi les bègues de parler plus lentement qu'ils ne le font ordinairement.*" Becquerel added that he did not know if this method has led to complete cure but believed it possible due to the fact that it forces one to speak slower and with moderation: "*Ce moyen a-t-il amené des guérisons complètes? Je n'en sais rien; mais cela est possible en raison de la lenteur et de la moderation qui en résultaient forcément dans le discours.*" (p. 86).

Some other authors too added comments, such as the Scottish physician and phrenologist **Andrew Combe (1797-1847)**. In an article from 1826, reviewing the work of the French psychiatrist, Félix Voisin (1794-1872) on stuttering, Combe wrote: "*M. Itard, whom we have already mentioned, recommends very strongly, where it can be done, to force children to speak in a foreign language by giving them a foreign governess or tutor; and the propriety of this advice is very palpable when we consider that it requires a more powerful and concentrated effort to speak and to pronounce a foreign than a native tongue, and that it is precisely a strong, undivided, and long-continued mental effort that is necessary to effect a cure.* (p.466). Interesting in this quote is that Combe apparently had a different view on how speaking another language might function to overcome stuttering than Itard. While Itard saw the introduction of a second language as means to learn to use the organs of speech in slow manner, Combe ascribed a possible effect to the fact that speaking a foreign language might entail the long-continued mental effort necessary to cure stuttering. Note also that Combe seemed to express some reservation about Itard's recommendation, be it in a subtle way, where he suggested (incorrectly) that Itard had recommended to confine children to a foreign governess "*where it can be done*". Clearly Combe was aware that in practice it might not always be possible to confide a child to a foreign governess. One finds the same addition already in the *Dictionnaire de médecine* from 1821 where the French physician **F. Rullier (?-?)** wrote about Itard: "*Ce médecin conseille encore, d'après son expérience propre, de forcer les enfants, à qui l'on peut donner, à cet effet, une gouvernante étrangère, à parler dans une langue différente de celle dont ils ont fait un trop brusque apprentissage*" (p. 351).

More overt critical remarks were voiced by **Henry McCormac**. Referring to Itard's approach as "*a method much practiced*" he concludes that the success Itard had with the two children appears to have been "*equivocal*" for "*we are not told how long the children were under cure, or whether advancing age had not some share in the change*" (McCormac, 1828, p. 80). In other words, according to McCormac the children may simply have outgrown their dysfluency. Also he does not see any reason why learning to speak another language would work: "*But, although stammering might accidentally cease while learning to speak a new language, there is no necessary reason why it should do so*" Moreover, even if it would work, McCormac considered it an inconvenient method: "*But even supposing for an instant that this plan were efficacious, it would be almost always a very inconvenient one*" (p. 80).

While several authors referred to Itard's approach, it is doubtful that it was widely used. In one of his lectures on speech disorders and their treatment, the German physician **Hermann Gutzmann (1865-1922)**, in 1893, briefly mentioned Itard's suggestion to learn a foreign language as well as his use of a little fork to strengthen the speech muscles. Gutzmann concluded, however, that Itard's therapeutic approach was too one-sided and too difficult to enjoy wider distribution: "*Seine Ansicht aber war zu einseitig und zu mühevoll, als dass sie auf weitere Verbreitung hätte Anspruch machen können.*" (Gutzmann, 1893, p. 314).

Although most authors ascribed the approach of learning another language in order to cure stuttering to Itard, not everybody did so. In what has been considered the first American scientific paper on stuttering (Rieber & Wollock, 1977) **Edward Warren (1804-1878)**, a well-known surgeon from Harvard, wrote: "*Some stammerers are said to have been cured by learning to speak a foreign language. As the pupil in this case is required to take lessons in pronunciation, and to speak the words after his instructor, until he obtains the right sound and accent, we can easily understand how the effect is produced.* (Warren, 1837, p. 90). Whether the phrase "*Some stammerers are said to have been cured by learning to speak a foreign language*" refers to the work of Itard, is not clear. It should also be noted that the approach Warren described is somewhat different from what Itard suggested where he speaks of "*lessons in pronunciation*" and "*to speak words after his instructor*" rather than being immersed in a different linguistic environment. About the possible success of the approach, Warren believed it could go both ways where he stated: "*If the pupil is so far interested and engaged in the acquisition of a new tongue, as to forget his impediment, he may be cured in this way; but if sensitiveness predominate, the embarrassment of endeavouring to express himself intelligibly and grammatically in a strange tongue, is added to this habitual embarrassment, and increases the difficulty in a tenfold degree.*". (Warren, 1837, p. 90).

### Erasmus Darwin's experiment

Where Itard got the idea from to confine a child to a foreign governess in order to overcome stuttering, is not known but he certainly was not the first one to have adopted this approach. In her "*Memoirs of the life of Dr Darwin*" (1804, p. 63-64) the English poet Anna Seward (1742-1809) relates about the stuttering in the family of **Erasmus Darwin (1731-1802)**, physician, scientist and grandfather of the famous naturalist Charles Darwin, known from his theory of evolution. Erasmus Darwin suffered from "*a high degree of stammering*" which "*retarded and embarrassed his utterance*". He had one daughter and four sons, the oldest of which, the uncle of the naturalist and also called Charles, "*had contracted the propensity*". Anna Seward describes how in order to cure his son's stuttering, Erasmus sent Charles abroad: "*With that wisdom, which marked the Doctor's observations on the habits of life; with the decision of conduct, which always instantly followed the*

*conviction of his mind, he sent Charles abroad;*” Apparently Erasmus was of the opinion that this could help his son in two ways: he would no longer see the stuttering example of his father and using another language would break the habit of speaking dysfluently: *“at once to break the force of habit, formed on the contagion of daily example, and from a belief that in the pronunciation of a foreign language, hesitation would be less likely to recur than in speaking those words and sentences, in which he had been accustomed to hesitate.”*

Seward further provides some practical details of the experiment. Charles, born in 1758, was sent abroad at about the age of 12, i.e. around 1770. So Erasmus Darwin tried this approach even before Itard was born. The person Charles was sent to was a certain Mr. Dickinson: *“About his twelfth year he was committed to the care of the scientific, the learned, the modest, and worthy Mr Dickinson, now rector of Blimel, in Shropshire.”* (Note: it concerns Samuel Dickinson (1733-1823) who became rector of Blimel in 1777). Mr. Dickinson was instructed to use exclusively French: *“That the purpose of the experiment might not be frustrated, Dr Darwin impressed that good man’s mind with the necessity of not permitting his pupil to converse in English; nor even to hear it uttered after he could at all comprehend the French language.”*. The experiment lasted for two years and appeared to be a great success, though Charles’ speech was not completely normal: *“Charles Darwin returned to England, after a two year’s residence on the continent, completely cured of stammering; with which he was not afterwards troubled; but his utterance was, from that time, somewhat thick and hurried”*.

### Translation exercises

Clearly learning a foreign language to cure stuttering was a practice applied already in the second half of the 18<sup>th</sup> century. Another and somewhat related approach that was sometimes used at that era was translating, as proposed for instance by **Colombat de l’Isère**. Colombat first suggested the use of translation exercises in 1830 in his book *“Du bégaiement et de tous les autres vices de la parole traités par de nouvelles méthodes”* in which he presented the method he had developed for treating stuttering. His method consisted mainly of syllable timed speech and reading, first at word level and subsequently reading sentences. **Figure 1** shows some examples of the sentences he had his clients read. At the end the description of his method Colombat suggested translation exercises: *“On pourra varier à l’infini ces genres d’exercices en faisant traduire en français des phrases faciles, soit du latin, soit de l’anglais et de l’Italien, etc. ou de toute autre langue que l’on voit rarement être ignorée entièrement par les personnes qui ont reçu une certaine éducation.”* (p. 200). (“One can vary these kinds of exercises endlessly by having translate into French easy sentences, either from Latin, English or Italian, etc. or any other language that is rarely seen to be completely unknown by people who have had some education”.)

L'ac-cent-du-pays-où-on-est-né-de-meu-  
re-dans-l'es-prit-et-dans-le-coeur-com-me-  
dans-le-lan-ga-ge.

La-plu-part-des-hom-mes-ont,-com-  
me-les-plantés,-des-pro-pri-é-tés-ca-chées-  
que-le-ha-sard-fait-dé-cou-vrir.

**Figure 1.** Reading exercises used by Colombat de l'Isère (1830) (examples from p. 195)

Ten years later, when he published his book "*Traité de tous les vices de la parole et en particulier du bégaiement*" Colombat seems to have definitely incorporated translation exercises in his method, providing no less than 24 pages of examples in Latin, English, German, Italian, and Spanish (see **Figure 2**)

You dance in a net, and think nobody sees you.  
Vous dansez dans un filet, et vous croyez que personne  
ne vous voit.

A tradesman who cannot lie, may shut up his shop.  
Un marchand qui ne sait mentir doit fermer bou-  
tique

---

Geben ist Lust. Bezahlen ist Schuldigkeit. Verdienst-  
lichkeit is nur, wo man das Gegebene entbehrt.  
Don-ner-est-un-plai-sir,-et-pa-yer-un-de-voir;-il-n'y-  
a-donc-de-mé-ri-te-à-don-ner-que-lors-qu'on-se-pri-ve.

---

Il giuoco è paragon dell'uomo.  
Le jeu est la pierre de touche de l'homme.

Chi non ha vergogna, tutto il mondo è suo.  
Celui qui ne sait pas rougir se rend maitre de monde.

**Figure 2.** Translation exercises used by Colombat de l'Isère (1840) (some examples of translation exercises from English (p.441), German (p. 448) and Italian (p. 456))

Colombat does not explain what the specific contribution was of translation exercises in the cure of stuttering but he pointed out that the latter exercises were among the most difficult for people who stutter and if at the end of therapy a person succeeded in translating the phrases without stuttering, he could consider himself totally free of his problem: “... *les personnes bègues, qui, à la fin de leur traitement, parviendront à les traduire sans bégayer, pourront se regarder comme étant parfaitement délivrées de leur infirmité, car cette épreuve est une des plus difficile et par conséquent des plus concluantes.*” (Colombat, 1840, p. 436-437). Judging from a footnote that Colombat added, translation exercises were not only used in individuals who mastered a foreign language but also in individuals not speaking any other languages: “*Comme la traduction doit, autant que possible, être faite mot à mot, nous avons mis le sens en français qui d’ailleurs servira d’exercice pour ceux qui ne connaissent pas les langues dont il est la traduction.*” (p. 437). (“As the translation must, as much as possible, be done verbatim, we have put the meaning in French which moreover will serve as an exercise for those who do not know the languages of which it is the translation.”).

Moreover, Colombat seemed to have used the same method in children who clutter: “*On prévient le bredouillement chez les enfants en les faisant lire à haute voix et déclamer, ayant soin que tous leurs mots soient mesurés par un rythme musical, comme je le conseillerai bientôt pour le bégaiement. Tous ces moyens seront plus efficaces si on y joint de plus l’étude des langues étrangères, et si on force les jeunes bredouilleurs à s’exercer le plus possible dans une de ces langues.*” (Colombat, 1830, p.89) (“One will prevent cluttering in children by making them read aloud and declaim, taking care that all their words are measured by a musical rhythm, as I will soon recommend for stuttering. All these means will be more effective if we also add the study of foreign languages, and if we force the young clutterers to practice as much as possible in one of these languages.”).

## Conclusion

The first real study on bilingualism and stuttering seems to date back from the early 20th century when Travis, Johnson and Shover conducted a survey on the prevalence of stuttering in bilingual compared to monolingual children in a number of public schools in Indiana, USA. However, stuttering and bilingualism received interest already in the 18<sup>th</sup> and 19<sup>th</sup> century. Several of the current research themes were already alluded to at that time, such as the manifestation of stuttering in bilinguals, bilingualism as a possible cause of stuttering and the treatment of stuttering in bilingualism. A unique historic approach appears to be the use of bilingualism and foreign languages to cure stuttering. While the information in the present paper is based on an analysis of a substantial number of sources, the overview given should not be considered exhaustive. Especially in the second half of the 19<sup>th</sup> century there was a rapid growth of publications on stuttering, also in languages

different from the ones considered here, which may contain additional interesting information on bilingualism and stuttering.

## REFERENCES

- Adams 2003: Adams, J.N. *Bilingualism and the Latin language*. Cambridge. Cambridge University Press.
- Agius 1995: Agius, J. Language analysis of a bilingual Maltese-English stuttering child. In: C.W. Starkweather, & H.F.M. Peters (Eds.), *Stuttering. Proceedings of the first world congress on fluency disorders*, Munich, Germany, August 8-11 (pp. 175-178). The Netherlands: University Press Nijmegen.
- Au-Yeung, Howell, Davis, Charles & Sackin 2000: Au-Yeung, J., Howell, P., Davis, S., Charles, N., & Sackin, S. UCL Survey on bilingualism and stuttering. Paper presented at the 3rd World congress on fluency disorders, Nyborg, Denmark, 7-11 August.
- Bacon 1627: Bacon, F. *Sylva Sylvarum: or a naturall historie in ten centuries* (Cent. Iv. Sec. 386), London: William Lee.
- Becquerel 1843: Becquerel, A. *Traité du Bégaiement et des moyens de le guérir*. Paris. Fortin, Masson et Cie, Libraires.
- Bernstein Ratner & Benitez 1985: Bernstein Ratner, N. & Benitez, M. Linguistic analysis of a bilingual stutterer. *Journal of Fluency Disorders*, 10, 211-219.
- Blume 1841: Blume, F. *Neueste Heilmethode des Stotterübels*. Quedlingburg and Leipzig. Druck und Verlag von Gottfr. Bacce.
- Bobrick 1995: Bobrick, B. *Knotted Tongues: Stuttering in history and the quest for a cure*. New York: Simon & Schuster.
- Brosch & Pirsig 2001: Brosch, S. & Pirsig, W. Stuttering in history and culture. *International Journal of Pediatric Otorhinolaryngology*, 59, 81-87.
- Chervin 1867: Chervin Ainé. (= the older, meaning Claudius, not his son Arthur) *Du bégaiement considéré comme vice de prononciation*. Paris: Delalain et fils.
- Colombat 1830: Colombat de l'Isère, M. *Du bégaiement et de tous les autres vices de la parole traités par de nouvelles méthodes*. Paris: Mansut fils.
- Colombat 1840: Colombat de l'Isère, M. *Traité de tous les vices de la parole et en particulier du bégaiement*. Paris, Béchét, Labé.
- Combe 1826: Combe, A. *Du bégaiement, ses causes &c et moyens therapeutiques pur prevenir, modifier ou guerir cette infirmité*; par M. Felix Voisin, D.M.P. *The Phrenological Journal and Miscellany*, Vol IV, October, 1826 – November 1827, 458–467. (Also reprinted in *Journal of Communication Disorders*, 10 (1977), 146–152.)
- Dale 1977: Dale. Factors related to dysfluent speech in bilingual Cuban-American adolescents. *Journal of Fluency Disorders*, 2, 311–314.
- De Bot & Kroll 2002: De Bot, K. & Kroll, J. Psycholinguistics. In N. Schmitt (Ed.) *Introduction to applied linguistics* (pp. 133–149). London: Arnold.
- De Chauliac 1363: De Chauliac, G. *Chirurgia magna Guidonis de Gauliaco*, Reprint. Wissenschaftliche Buchgesellschaft, Darmstadt, 1976.
- Dieffenbach 1841: Dieffenbach, J.F. *Die Heilung des Stotterns durch eine neue chirurgische Operation*. Ein Sendschreiben and das Institut von Frankreich. Berlin. Albert Förstner.

- Edwards 2004: Edwards, J. Foundations of bilingualism. In T. Bhatia & W. Ritchie (Eds.). *The handbook of bilingualism* (pp. 7-31). Oxford: Blackwell.
- Eldridge 1968: Eldridge, M. A history of the treatment of speech disorders. Edinburgh and London: E. & S. Livingstone.
- Frank 1826–1843: Frank, J. *Praxeos medicae universae praeceptis*. Lipsiae: sumptibus bibliopoli Kuehniani
- Freud 1939: Freud, S. Moses and monotheism. Translated from the German by Katherine Jones. Hogart Press and the Institute of Psycho-Analysis. [https://www.taagloucester.org/sites/default/files/uploaded\\_documents/mones\\_and\\_monotheism\\_excerpt.pdf](https://www.taagloucester.org/sites/default/files/uploaded_documents/mones_and_monotheism_excerpt.pdf)
- Gutzmann 1893: Gutzmann, H. Vorlesungen über die Störungen der Sprache und ihre Heilung, gehalten in den Lehrcursen über Sprachstörungen für Aerzte und Lehrer. Berlin N.W.: Verlag von Fischer's Medic. Buchhandlung H. Kornfeld.
- Héral 2006: L'orthophonie avant l'orthophonie. Exposition présentée au 6e festival audiovisuel en orthophonie. Nancy, 10, 11 et 12 novembre.
- Hertz 1930: Hertz, J.H. The Pentateuch and Haftorahs: Hebrew text, English translation with commentary: Exodus. Oxford: Oxford University Press.
- Howell, Davis, & Williams 2009: Howell, P., Davis, S., & Williams, R. The effects of bilingualism on stuttering during late childhood. *Archives of Disease in Childhood*, 94, 42-46.
- Hunt 1861: Hunt, J. Stammering and Stuttering, their nature and treatment. London: Longman, Green, Longman and Roberts.
- Itard 1817: Itard, J.M. Mémoire sur le bégaiement. *Journal universel des sciences médicales*, 7, 129-144.
- Jankelowitz & Bortz 1996: Jankelowitz, D.L. & Bortz, M.A. The interaction of bilingualism and stuttering in an adult. *Journal of Communication Disorders*, 29, 223-234.
- Judy Duchan's History of speech –language pathology. [www.ascu.buffalo.edu](http://www.ascu.buffalo.edu)
- Karniol 1992: Karniol, R. Stuttering out of bilingualism. *First Language*, 12, 255-283.
- Klencke 1860: Klencke, H. Die Heilung des Stotterns nach meiner rationellen, didactisch-medicinischen Methode. Leipzig: Verlag von Chr. Ernst Kollman.
- Klingbeil 1939: Klingbeil, G.M. The historical background of the modern speech clinic. *Journal of Speech Disorders*, 4, 115-132.
- Kussmaul 1877: Kussmaul, A. Die Störungen der Sprache: Versuch einer Pathologie der Sprache. Leipzig: F. C. W. Vogel.
- Lebrun, Bijleveld, & Rousseau 1990: Lebrun, Y., Bijleveld, H., & Rousseau, J.J. A case of persistent neurogenic stuttering following a missile wound. *Journal of Fluency Disorders*, 15, 251-258.
- Lebrun & Paradis 1984: Lebrun, Y. & Paradis, M. To be or not to be an early bilingual? In: Y. Lebrun & M. Paradis (Eds.), *Early bilingualism and child development* (pp. 9-18). Lisse: Swets & Zeitlinger.
- Leon-Sarmiento, Paez & Hallett 2013: Leon-Sarmiento, F. E., Paez, E., & Hallett, M. Nature and nurture in stuttering: A systematic review of the case of Moses. *Neurological Science*, 34, 231-237.
- Lewis 1897: Lewis, G.A. 1897 The origin of stammering. Detroit. Geo. Andrew Lewis.
- Lewis 1907: Lewis, G.A. Home cure for stammerers. Detroit. G.A. Lewis.
- Lim, Lincoln, Chan, & Onslow 2008: Lim, V.P. C., Lincoln, M., Chan, Y.H., & Onslow, M. Stuttering in English-Mandarin bilingual speakers. The influence of language dominance on stuttering severity. *Journal of Speech, Language, and Hearing Research*, 51, 1522-1537.

- McCormac 1828: McCormac, H. A treatise on the cause and cure of hesitation of speech or stammering. London: Longman, Rees, Orme, Brown, and Green.
- Mendelssohn 1738: Mendelssohn, M. Psychologische Betrachtungen auf Veranlassung einer von dem Herrn Oberkonsistorialrath Spalding an sich selbst gemachten Erfahrung. Magazin zur Erfahrungsseelenkunde, 1, 46-75.
- Mercurialis 1583: Mercurialis, H. De morbis puerorum ("On the diseases of children"). Translated by Johannes Chroszczyowski and J Wollock, Journal of Communication Disorders, 10, 1-2, 127-140.
- Nwokah 1988: Nwokah, E.E. The imbalance of stuttering behavior in bilingual speakers. Journal of Fluency Disorders, 13, 357-373.
- Potter, 1882: Potter, S.O.L Speech and its defects, considered physiologically, pathologically, historically, and remedially. Philadelphia: P. Blakiston, son & co.
- Quidde 1925: Quidde, L. Erinnerungen eines Stotterers. Vossische Zeitung, December 20th. (also translated and reprinted as Quidde, Ludwig, Recollections of a Stutterer, in Living Age, 328, February 13, 1926, p. 360-363.)
- Rieber & Wollock 1977: Rieber, R.W. & Wollock, J. The historical roots of the theory and therapy of stuttering. Journal of Communication Disorders, 10, 3-24.
- Roberts 2002: Roberts, P.M. Disfluency patterns in four bilingual adults who stutter. Journal of Speech-Language Pathology and Audiology/Revue d'orthophonie et d'audiologie, 26, 5-19.
- Roche & Sanson 1828: Roche, L. Ch. & Sanson, J.L. Nouveau éléments de pathologie médico-chirurgicale ou traité théorique et pratique de médecine et de chirurgie. Paris: J.-B.. Baillière.
- Romberg 1853: Romberg, M.H Nervous diseases of man. London. Printed for the Sydenham Society. (Translated and edited by Edward H. Sieveking).
- Rullier 1821: Rullier, F. Bégaiement. In MM. Adelon etc.... (Eds). Dictionnaire de Médecine, Tome Troisième ARG-BUT (pp. 341-353). Paris: Béchete jeune, libraire.
- Schäfer 2008: Schäfer, S.M.C.M. Stuttering characteristics of German-English bilingual speakers. A thesis submitted in partial fulfillment of the requirements for the degree of Masters of Science in Speech-language-therapy in the University of Canterbury. University of Canterbury.
- Schmalz 1846: Schmalz, E. Beiträge zur Gehör- und Sprachheilkunde. Leipzig: Verlag der J.C. Hinrichsschen Buchhandlung.
- Scott Trautman & Keller 2000: Scott Trautman, L. & Keller, K. Bilingual intervention for stuttering: A case in point. Paper presented at the ASHA annual convention, Washington, D.C., November, 16-19.
- Shapiro 1999: Shapiro, D. A. Stuttering intervention. A collaborative journey to fluency freedom. Austin, TX: Pro-Ed.
- Schulthess 1830: Schulthess, R. Das Stammeln und Stottern: über die Natur, Ursachen und Heilung dieser Fehler der Sprache, mit besonderer Berücksichtigung der neuen Curmethode des Stotterns: nebst einem Versuche über die Bildung der Sprachlaute. Zürich: Friedrich Schulthess.
- Seward 1804: Seward, A. Memoirs of the life of Dr. Darwin, chiefly during his residence in Lichfield, with anecdotes of his friends and criticisms on his writings. Philadelphia: At the classic press, for the proprietors Wm.Poynteli, & Co.
- Siguan & Mackay 1987: Siguan, M. & Mackay, W.F. Education and bilingualism. London: Kagan Page in association with UNESCO.

- Silverman 1996: Silverman, F.H. Stuttering and other fluency disorders. Englewood Cliffs, NJ: Prentice Hall.
- Ssikorski 1891: Ssikorski, J.A. Ueber das Stottern. Berlin: Verlag von August Hirschwald.
- Stern 1948: Stern, E. A preliminary study of bilingualism and stuttering in four Johannesburg schools. *Journal of Logopaedics*, 1, 15-25.
- Stuttering homepage. <https://www.mnsu.edu/comdis/kuster/stutter.html>.
- Thelwall 1812: Thelwall, J. Illustrations of English Rhythmus. London. Printed by McCreery Black-horse-court and sold by Messers. Arch, Cornhill; Ridgeway, Piccadilly; Kent, Holborn; and Harwood, Great Russel-street.
- Tigay 1978: Tigay, J.H. "Heavy of Mouth' and 'Heavy of Tongue': On Moses' Speech Difficulty." *Bulletin of the American Schools of Oriental Research*, 231, 57-67.
- Van Borsel 2011: Van Borsel, J. Review of research on the relationship between bilingualism and stuttering. In P. Howell & J. Van Borsel (Eds.) *Multilingual aspects of fluency disorders* (pp. 247-270). Bristol: Multilingual Matters.
- Van Riper 1971: Van Riper, C. The nature of stuttering. Englewood Cliffs: Prentice-Hall.
- Warren 1837: Warren, E. Remarks on stammering. *The American Journal of the Medical Sciences*, 21, 75-99. (Also reprinted in *Journal of Communication Disorders*, 10 (1977), pp. 159-179.)
- Wingate 1997: Stuttering. A short history of a curious disorder. Westport/London: Bergin & Garvey.
- Woods & Wright 1998: Woods, D.W. and Wright, L.W. Dismantling simplified regulated breathing: A case of a bilingual stutterer. *Journal of Behavioral Therapy and Experimental Psychiatry*, 29, 179-186.
- Wright 1835: Wright, J. A treatise on the causes and cure of stuttering, with reference to certain modern theories. London: Whittaker & Co.
- Travis, Johnson & Shover 1937: Travis, L.E., Johnson, W. & Shover, J. The relation of bilingualism to stuttering. *Journal of Speech Disorders*, 2, 185-189.

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