



## ARMANDO DE LACERDA AND HIS CONTEMPORARIES: PAUL MENZERATH

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**Abstract:** Armando de Lacerda was one of the most gifted and most famous experimental phoneticians of his time. His *Laboratório de Fonética Experimental da Faculdade de Letras de Coimbra* attracted many scholars from all over the world who used the resources at the lab for their own studies. Lacerda also travelled extensively, sharing his expertise with experimental phoneticians all over Europe. This contribution focuses on Lacerda's ties to Germany and to the phonetics institute at the University of Bonn specifically. A name figuring prominently in this context is that of Paul Menzerath, then head of the Bonn phonetics lab. Not only did the two co-author one of the most famous and widely cited monographs in phonetics – they collaborated extensively for a number of years. Not much is known about Menzerath as a person or about the exact nature of their working relationship, but it seems as if Menzerath was much more of a beneficiary of their collaboration than was acknowledged at the time. Following some biographical remarks on Menzerath, the nature of their collaborative work is explored. Menzerath's achievements are then discussed from the perspective of modern phonetics. There are indications that Lacerda may not have always received the recognition which he deserved for his ingenuity.

### 1 Introduction

*Koartikulation, Steuerung und Lautabgrenzung* is probably one of the most frequently cited works in phonetics. However, since it was never translated into English, it is quite possible that far fewer people have actually read than cited it. Its message, though, is omnipresent, and the findings nowadays are part of the basic knowledge about human speech production. In addition, relatively little is known about the authors of this monograph, Armando de Lacerda and Paul Menzerath. The workshop which is the basis for the present publication was devoted to the memory of Armando de Lacerda. A contribution on Paul Menzerath thus adds to the high regard for the great Portuguese phonetician.

### 2 Paul Menzerath – The Man

Paul Menzerath was born in Düren in the far west of Germany on 1 January 1883. His academic education was varied both geographically and topically: Menzerath studied in Freiburg, Berlin, Marburg, Würzburg, Kiel, Geneva, and Paris. He received his PhD in philosophy, general linguistics, and classical philology at the University of Würzburg in 1906. Late in 1908 he was made the head of the newly established Institute of Psychology at Fort Jaco near Uccle in Belgium. This included setting up an experimental laboratory. Menzerath was expelled from Belgium in 1914, and after one year of military service he started working as a lecturer for French at the University of Bonn. The year 1916 took him back to Belgium, where he was appointed extraordinary professor of psychology at the University of Ghent. In 1917, he was made an ordinary professor there. However, one year later he was forced to return to Germany (see below), where he once again took on the post of a lecturer for French at the University of Bonn. He kept this post until 1946, when he was finally made an adjunct professor [9: 14].

Menzerath always had an interest in empirical work – in the late 1910s this must have extended from psychology to phonetics. His *Habilitation*, which he earned in 1920, was in both Psychology and Experimental Phonetics [32: 18]. The oral presentation, which is part of the examination, was entitled *Die Aufgabe und Methodik der experimentellen Phonetik* (‘Tasks and methodology of experimental phonetics’ – our translation; [32: 18]). When the University of Bonn decided to set up an experimental phonetics laboratory in 1920, Menzerath was the obvious candidate to be charged with carrying out the work. He was knowledgeable, experienced, internationally renowned, and he was already present in Bonn and a member of the Faculty<sup>1</sup> so that it was not deemed necessary to create a new post. For Menzerath, this meant that he could carry out experimental phonetic work, but also that he would have to do that on top of his duties as a lecturer. He set up the laboratory in 1921 [41: 65]; [32: 17]. In 1927, he finally got an assistant (Karl Weitkus) and a budget<sup>2</sup>. In that same year, phonetics was admitted into the canon of subject areas in which PhDs could be earned [32: 19]. It must have been a popular subject, since Miron [32: 19] reports that the number of students increased to 180 in the summer term of 1928. Menzerath remained in Bonn until his passing in 1954. He married Marguerite Kingma in 1914, and they had one daughter.

A question which invariably arises if one talks about science in the Germany of the 1930s and the 1940s is the scientists’ relationship with the Nazi government. Menzerath was never an active member of any Nazi organization. He himself mentions that he was a member of the Deutsche Volkspartei [3: 7714], but he did not play an active role in it. He was a supporting member of the SS [3: 7737], but according to Gerd Simon [37] that did not require any active involvement. In WWI, he did not progress beyond the rank of private.

The fact that Menzerath’s request for an extraordinary professorship was turned down twice almost works in his favor. He evidently did not collaborate to an extent where he would be appointed on his political merits. Unlike other members of the German phonetics community, he never engaged in racist rhetoric [37], but he seems to have successfully created the impression that he was not opposed to the Nazi movement, since its local representatives supported Menzerath’s application for a professorial post [3: 7737]. Still, following a trip to Sweden in 1943 he was accused of having made derogatory remarks about Hitler and the chances of Germany winning the war and of having praised Heinrich Heine’s work<sup>3</sup>. In the investigation that ensued, he was exonerated and thus not prosecuted. After the war, he had to fill in the questionnaire for the Denazification Office and was categorized as *entlastet* (‘exonerated’; [37: 19]).

### 3 Running a Lab without an Appropriate Post

Paul Menzerath did not have an easy life. The fact that he was expelled from Belgium twice during WWI forced him to earn his living as a lecturer for French in Bonn after having worked

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<sup>1</sup> This was an important argument at the time. The Faculty in Bonn had no time to lose because they feared that the rivalling University of Cologne would establish such a laboratory before they could do so in Bonn [32: 17].

<sup>2</sup> Evidently there was also a workshop and at least one lab technician. In a letter to Luís Raposo in February of 1932 which is quoted in Lopes and Pereira [19: 97], Lacerda describes the labiograph as “an apparatus that the [Bonn] laboratory has built in accordance with my instructions” (ibid.). The same may be assumed for the chromograph (ibid, 99). The fact that Menzerath asked Lacerda to teach a class on the use of the chromograph [18:97] demonstrates that he was on the conceptualizing rather than the technical side of matters.

<sup>3</sup> Heinrich Heine (1797–1856) was a German poet who emigrated to Paris in 1831. His books were among those that were destroyed in the Nazi book-burning.

as an ordinary professor in Ghent. In addition to his lecturer's post he acted as head of the Experimental Phonetics Laboratory without being granted an extrabudgetary or extraordinary professorship, let alone an ordinary one. Two attempts by the Bonn Faculty towards this aim in 1938 and 1939 failed [3: 7727; 7729]. When – finally – a post was created as of winter term 1949/50, Menzerath was too old to even be considered for it. In 1951, the post of an assistant was established and filled with Werner Meyer-Eppeler, who would succeed Menzerath, this time as an ordinary professor [39: 5].

Menzerath also suffered setbacks in his personal life. “His” institute was completely destroyed in an air raid on 18 October 1944. He then kept what was worth keeping at his private home. However, that was destroyed by a fire in July of 1945 together with all of his books, documents, manuscripts, and notes [9]. This may be one reason why there are not more post-war publications by Paul Menzerath. Finally, he had financial difficulties because his wife became ill, and he had to get a mortgage on his house in order to pay for her treatment [3: 7744]. Still, she passed away in the early 1930s.

## 4 Menzerath – The Scientist

It is hard to tell whether it was a personality trait or a consequence of not feeling properly recognized – Paul Menzerath comes across as a very principled researcher who has firm stand-points which he does not refrain from defending vigorously. He definitely does not hold back his opinion, and that includes rather harsh comments on his colleagues. Some of the examples below will serve to illustrate the point.

### 4.1 Sound Duration in German

Menzerath was convinced that there was a three-way distinction in the duration of German vowels and a two-way distinction in length for many consonants. He advocated this view vehemently in several publications [21], [23]. In [21] he stated: „Trotz aller Anfeindung aber fühlte ich nicht die mindeste Veranlassung, von meiner Behauptung auch nur das Geringste abzustreichen.“ (‘Despite all hostilities, I do not in the least feel inclined to even slightly modify my previous statements’ – our translation).

Menzerath did not provide proof for this claim, and it does not seem obvious that he could have done so. The reason why there was hardly any contradiction was probably that to most researchers it was immediately obvious that Menzerath was mistaken. Still, he insists that his view is correct and regrets that it has been totally ignored in German pronouncing dictionaries. The only place where this view is published is the textbook authored by himself accompanying the Linguaphone language course<sup>4</sup>.

### 4.2 Sound Duration in Spanish and Menzerath's Law

The first major publication after the establishment of the experimental phonetics laboratory was *Spanische Lautdauer* (‘Spanish sound duration’) in collaboration with a Spanish Jesuit monk, J. M. de Oleza (Menzerath & de Oleza 1928). In this work Menzerath used the term “law” for the first time to describe certain durational properties of linguistic units: The more sounds in a word, the shorter the individual sound; the more syllables in a word, the shorter the individual syllable etc. [29: 68–71]. This has since become known as Menzerath's Law. It has been studied (and confirmed) in multiple contexts, e.g. in DNA [15] and primate communication [8]; see, however, [38] for a counterexample.

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4 Menzerath must have served as a consultant for Linguaphone. He mentions his textbook and also served as a speaker in nine out of 16 records.

### 4.3 The X-ray Film

Paul Menzerath and his colleague Robert Janker (then head of the Radiology department of the University of Bonn) presented an X-ray movie of speech organs in motion which also contained sound at the second ICPhS in London in 1935 [26]. Thus, for the first time it was possible to listen to speech sounds and simultaneously watch the articulators move. The movie was a huge success and had to be shown several times. Menzerath presented it again at the 4th International Congress of Linguists in Copenhagen in 1936 [28] and at the XIe Congrès International de Psychologie in Paris in 1937. In a reference compiled for Menzerath's application for an extraordinary professorship the linguist Gerhard Deeters writes that it was a big success wherever it was shown [3: 7730–31].

### 4.4 Menzerath on Transcription

Menzerath can point to numerous publications in *Le Maître Phonétique*. In some of those, he does not refrain from criticizing the transcription standards in that journal. He writes

'vi: vɛ:t di: "brø:d trænskri:fn"

fy:r 'ʔan:dərə ,spra:xən fɛr'ventba:r ɪst, vil ɪç 'hi:r niçt ent'ʃɛ:dən ;  
fy:r das 'dɔy:tʃə a'bər ʔɪst zi: als 'ʔun:ʃulɛŋliç un:t als 'ʔɪrɛfy:rənt  
'ʔapʃule:nən. nu:r ɛr'nə gə'nɔʊə, 'ʔɛr:ŋgɛ'əndə 'ʔumʃrɪft kan: dɛ'n  
'ʔɪmərhm: fɛr'vikəltən 'fi:lʃɛ:l:tiçkɛr:tən dər 'dɔy:tʃən 'spra:xə  
gə'rɛçt vɛ'rɔdən, un:t 'zomɪt ,le:nə ɪç ɔʊ:x fast 'ʔalə 'dɔy:tʃən  
,tran:skri'bɪr:tən 't'ɛkstə 'ʔap, di: ɪn dɛ'n 'lɛʃtən 'ja:rən ɪm m.f.  
ɛr'ʃi:nən. das ʒm:t, glɔʊ'bə ɪç, 'rɛr'nə ʃpi:lə'rɛrən, di: 'k'ɛr:n  
gə'bɪldətər 'dɔy:tʃər als kɔ'rɛkt un:t ,nɔx fi:l 'vɛ:nɪgər als  
" 'mustərhaft " 'ʔanɛrkənən vɪrt.

Figure 1. Excerpt from Menzerath [23: 69]<sup>5</sup>

This fairly harsh criticism of the transcriptions in *Le Maître Phonétique* was countered in a letter from Daniel Jones, then editor of the journal, to Hans Jørgen Uldall, which is reprinted in Collins & Meese [4: 348]: “Menzerath will provide German texts, but only those of his own brand – ultra-narrow and showing his Western German peculiarities (which he seems to think are nearly universal). Westermann and E.A. Meyer, the two most practical German phoneticians, assure me he is mistaken.” Still, Daniel Jones did not feel that he could reject Menzerath's manuscripts: “However, Menzerath is an enthusiast, and a member of our Council, so we cannot refuse what he sends” (ibid.).

Daniel Jones would possibly have taken a firmer stand towards Menzerath had he known what the latter thought of phonetics as taught at UCL. In a report to his Ministry of 23 August

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<sup>5</sup> “I do not wish to decide whether ‘broad transcription’ is useful for other languages; for German, however, it has to be rejected as deficient and misleading. Only an exact, in-depth transcription can do justice to the complicated intricacies of the German language, and consequently I reject almost all German transcripts which have been published in m.f. in the past years. I believe them to be mere gimmicks which would not be recognized as correct and even less as exemplary by any educated German” (our translation).

1935, reprinted in [37], in which he draws a distinction between practical phonetics and scientific (=experimental) phonetics, Menzerath writes:

„Wer weiter nichts als einen Kursus in praktischer Phonetik, wie er in London gegeben wird, nachweisen kann, ist eben nur ein Anfänger. England leistet Musterhaftes in praktischer Phonetik, wissenschaftlich aber ist es auf diesem Gebiete vollkommen bedeutungslos.“<sup>6</sup>

#### 4.5 Menzerath and the Pronunciation of German

Menzerath also had ideas about what German should sound like and which variant was to be taught to students of German as a Foreign Language. Once again, the forum which he chooses for his publication is *Le Maître Phonétique*.<sup>7</sup>

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'dɔy:ʃlan:t ,trɪft ʔe'bən 'nɪçt ʃu', vas her PALMER fy:r 'ja'pan  
 'fɛstʃteltə, un:t vas her GRAHAM mu'ta:ti:s mu'tandi:s (zo'!) fy:r  
 'ʔalə ʃpra:xən 'ʔantʃu:nəmən ʃɛrnt': 'nɛmliç, das 'ʔɛɪnʃax di  
 'ʔɔ:ʃpra:xə 'je'dəs indi'viduums dər gə'bɪldətən 'klasə als  
 'mʊstər gɛltən dar:f. 'das bə,ʃvɛrflə ɪç ʃo'n fy:r grɔ:ʃbrɪ't'anɪən,  
 əs ʃtɪmt 'zɪçər ,nɪçt fy:r 'frɑ:krɛɪç, fy:r ɪ't'a:lɪən 'ʔɔ:x nɪçt', ʔun:t  
 ,gan:t un:t 'ga:r nɪçt fy:r 'dɔy:ʃlan:t'. 'mʊstərhaftəs 'dɔy:ʃ vɪrt  
 ɪn 'k'ɛɪnər 'dɔy:ʃən 'ʃtat o'dər 'lan:tʃaft gə'ʃprɔ:xən; 'ʔɔ:x dər  
 gə'bɪldətə bɛr'li:nər, 'mɪn:çənər, 'vi:nər, 'frɑ:kfurtər, 'k'œlnər  
 ,ʃprɪçt ʔal:zo' nɪçt ʔo'nə 'vɛrtərəs 'mʊstərhaft'.

Figure 2. Excerpt from Menzerath [25: 3].

Therefore, Menzerath strictly adhered to the pronunciation according to Siebs [36]. For example, he demanded postvocalic /r/s to be realized as apical trills<sup>8</sup>. This is something that was not even at the time articulated in formal speech off the stage, let alone in everyday use. Since Menzerath served as a speaker for the Linguaphone company and their German language courses<sup>9</sup>, we get an impression of his ideas about German pronunciation. They are, as Daniel Jones remarked (see section 4.1 above) very conservative and strictly in accordance with Siebs' provisions.

6 'Those who have nothing to offer but a course in practical phonetics, as it is taught in London, are nothing but beginners. England's achievements in practical phonetics are exemplary, whereas scientifically she is totally insignificant in this field' (our translation).

7 'For Germany it is not true what Mr. Palmer noted for Japan and what Mr. Graham seems to assume mutatis mutandis for all languages, i.e. that the pronunciation of any educated individual may serve as a model. I doubt this for Great Britain, it is certainly not true for France, neither for Italy and least of all for Germany. Exemplary German is not spoken in any German city or region; neither the educated man from Berlin nor from Munich, Vienna, Frankfurt or Cologne can be considered to pronounce in an exemplary way' (our translation).

8 It is worthy of note that in the magnetophone recordings he seems to realize uvular trills. It looks as if what applies to many people from the area: they cannot pronounce an apical trill, applied to him as well.

9 This was probably in order to earn extra money on the side, but it also gave him the opportunity to propagate his ideas on German sound duration (see section 2).

## 5 Menzerath in the Light of Modern Phonetics

The previous section has provided ample evidence of Menzerath's principled approach to scientific study. Specifically, he advocated the scientific field of phonetics as a natural and experimental science, in line with Panconcelli-Calzia and other contemporaries, but also in striking differentiation from *Ohrphonetik* ('phonetics by ear'), which he regarded as an inadequate scientific approach. Menzerath was a strong proponent of carefully designed experiments: "The most beautiful theories fall apart as soon as the questions are approached experimentally." [20: 114 – our translation)]. Indeed, despite the fact that he – alongside de Lacerda – made strides in advanced instrumentation, Menzerath believed that experiments, not complicated instruments, are at the core of modern phonetics.

The seminal collaborative publication by Menzerath and de Lacerda, *Koartikulation, Steuerung und Lautabgrenzung* ('coarticulation, articulatory control and speech sound segmentation'; [30]) presents the design, recording, and analysis of a dataset using the most advanced version of the kymograph, assembled by the two researchers. They recorded seven signals (upper and lower lip, jaw, oral and nasal airstream, laryngeal activity, and a temporal reference signal from a 100 Hz tuning fork) representing entire utterances in two languages, German and Portuguese. The utterances were constructed to cover specific sequences of speech sounds (for instance V<sub>1</sub> Pl<sub>lab</sub> V<sub>2</sub>) and their underlying articulatory gestures, which were found to be smooth and continuous and specific to the concrete sequence – reminiscent of Sven Öhman's later, equally seminal, work on VCV coarticulation in Swedish [33].

The key concept and term *coarticulation* was coined by Menzerath and de Lacerda [30] to capture their crucial insight derived from their analyses, namely that articulatory patterns are the result of "marvelous, goal-oriented harmony of interweaving gestures" (p. 53 – our translation), to the point that it is impossible, or rather: arbitrary, to decide where the boundary between two adjacent, coarticulated speech sounds is. It may be possible to delineate segment boundaries in the acoustic patterns, but acoustically defined speech sounds will never fully correspond to the underlying articulatory gestures that were orchestrated to produce them (p. 59). We (the authors, and probably many of our colleagues) routinely explain to our students, especially those tasked with speech corpus segmentation and annotation based on acoustic and perceptual information, that the phone boundary markers they readily apply to the speech signals are a useful, operationalized convention agreed upon in the research group or in the community at large, but otherwise a fiction, having no consistent correlate in articulation. Furthermore, Menzerath and de Lacerda inferred that no stable phase exists within speech sounds in continuous speech, neither in vowels nor in consonants, not even in fricatives or in plosive closures (p. 52). They also reveal that, counter to common lore, plosive releases require active lip gestures rather than increased air pressure alone: no degree of pulmonic air pressure would suffice to force apart the lips against labial muscular activity (p. 35).

The claim that speech sound segmentation ('Lautabgrenzung') is possible in the acoustic domain, if not in articulation, was illustrated by Menzerath during his presentation at the Fourth International Congress of Linguists in 1936 in Copenhagen [28]. He concatenated speech sounds cut (literally cut by a pair of scissors and pasted in a different order) from the optical film sound track of several words to create a new word (*Wortsynthese*, 'word synthesis') [27]. This is evidently reminiscent of concatenative speech synthesis. Whereas Menzerath's demonstration may have been successful for the one particular word he used (*Baumeister*), early concatenative synthesis experiments quickly revealed that this kind of allophone synthesis would not produce intelligible speech [6] – and exactly for the reasons that Menzerath and de Lacerda had so convincingly argued about, namely that coarticulatory effects are pervasive and create patterns characteristic for specific sound sequences. As they explained, there are no stable phases in continuous speech, not within speech sounds, let alone at phone boundaries.

Küpfmüller & Warns [11] introduced the concept of diphones, a concatenative unit that contains the natural, highly dynamic yet smooth transitions between adjacent speech sounds. However, even diphone synthesis relied on the (mistaken) idea that the temporal midpoint of a speech sound is a relatively stable phase. The latest development in diphone speech synthesis consisted in a flexible choice of locations for cutting and concatenation to maximize smoothness and the inclusion of context-sensitive variants of the diphone to cover local coarticulatory effects [34]. This development marked the point of transition to unit selection synthesis, which does not rely on a pre-defined, fixed set of concatenative units but retrieves units, the longer the better, from a recorded speech database at synthesis runtime.

Menzerath and de Lacerda's *opus magnum*<sup>10</sup> strikes us as remarkably modern in yet another aspect. They call it an empirical fact that speech production follows economical principles and laws of information transmission. As Menzerath succinctly states elsewhere: "We speak as incorrectly as (just so) possible [...] to the extent that the interlocutor (and thus also the speech researcher) does not notice" [20: 114 – our translation]. This insight is compatible with general principles of least effort [5], [41], [42] and seemingly a precursor of Lindblom's H&H Theory that provides a partial explanation of phonetic variation [16]. H&H Theory posits that speakers tend to encode a maximum of information in the speech signal with minimal articulatory effort. They will produce speech characterized by hypo-articulation, target undershoot, as well as temporal, tonal and spectral reduction, wherever possible, but will help listeners extract contrasts in adverse conditions or insufficient context (hyper-articulation). Contextual predictability is assumed to affect the realization of speech sound sequences by the speaker and its processing by the listener. The expected direction of the effect is such that more predictable units are realized by the speaker in a hypoarticulated form, i.e., the unit is spectrally and/or prosodically reduced in comparison with a less predictable occurrence of the same unit. The listener, on the other hand, will not be adversely affected by the reduced form if it is predictable from context. Conversely, processing is impaired when the realization of a unit is inadequate for its context, i.e., either a reduced form in a non-predictive context or a non-reduced, or even hyperarticulated, form when it is highly predictable.

These assumptions are also compatible with the Smooth Signal Redundancy (SSR) hypothesis [1], [2] and the Uniform Information Density (UID) principle [10], [14]. SSR posits that a smooth signal redundancy is achieved by a complementary relationship between language redundancy and acoustic redundancy. UID asserts that speakers manage linguistic encoding to distribute surprisal as uniformly as possible, to optimize usage of (channel, cognitive) capacity. Both frameworks thus assume a balance of top-down informativity/unpredictability with bottom-up information in the signal.

Menzerath and de Lacerda obviously lacked the formal devices, e.g. from Information Theory [35], but also those used in locus equations [17], to quantify the degree to which speakers fluctuate between careful and relaxed articulation, but they clearly saw that speech production is subject to requirements of efficient communication and economical principles. That said, the contrast between, on the one hand, Menzerath's deep understanding of the characteristics of speech production as the complex result of communicative constraints on both the speaker and the listener and, on the other hand, his strict adherence to categorical pronunciation standards set by authorities, remains irreconcilable.

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<sup>10</sup> We would like to refer to their book as an *opus magnum*, despite the fact that it comprises less than 70 pages.

## 6 Menzerath and Armando de Lacerda

Paul Menzerath and Armando de Lacerda first met in Hamburg at Giulio Panconcelli-Calzia's Institute in the summer of 1931. De Lacerda had a scholarship from the Junta de Educação Nacional, but according to an unpublished manuscript cited by Lopes and Brock-Nannestad it appears that he was less than happy with Panconcelli-Calzia's condescending behavior [18: 96]. Menzerath realized the potential in this young scientist and invited him to Bonn. Panconcelli-Calzia was infuriated by de Lacerda's decision to leave Hamburg. In a letter written to Eberhard Zwirner on 28 August 1933, he pursues a dual strategy of discrediting him as a person, repeatedly calling him "der kleine Portugiese" ('the little Portuguese'), and belittling his ideas, calling them "abenteuerliche Neuerungen in der experimentalphonetischen Technik" ('preposterous innovations to experimental phonetic technique'; our translation). There are indications that Menzerath did not receive the respect he deserved from many of his colleagues either<sup>11</sup> [37: 3]. In the same letter, Panconcelli-Calzia states that Menzerath is not a phonetician. (Archiv der Gesellschaft für interdisziplinäre Forschung Tübingen [GIFT]; document #052680).

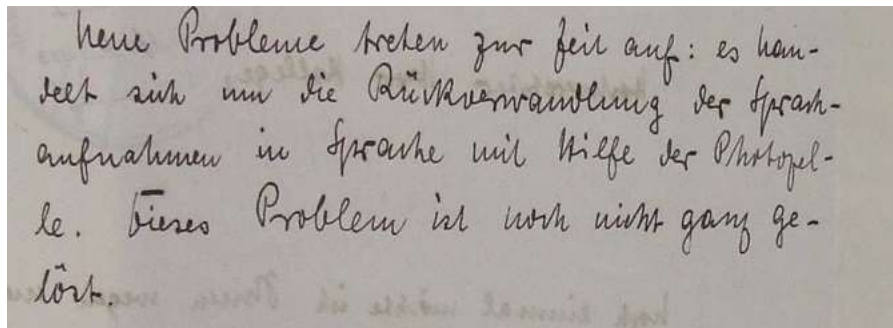


Figure 3. Excerpt from a letter dated 13 April 1932 from Menzerath to Luís Raposo, Junta de Educação Nacional (Arquivo do Instituto Camões, Lisboa, Box 1337, File 3).

De Lacerda travelled to Bonn in the fall of 1931 and had his labiograph as well as the first chromograph built at their workshop according to his instructions [19: 97; 99]. The final stage of the development of the latter is reflected in a letter by Menzerath to the Junta in which he requests an extension of the scholarship to enable de Lacerda to finish his chromograph.<sup>12</sup>:

Over time, Lacerda's role changed from that of the student to that of a teacher. He taught classes on his chromograph in Bonn [18: 97]. Menzerath sent one of his students by the name of Paul Pohl to Coimbra to study with de Lacerda and learn how to use his latest model of the chromograph [12: 641]; [19: 101]. Lacerda returned to Bonn for a visit in 1938 in order to get to know their newly acquired devices [12: 649]. And yet, it seems that the two men never became really close. They were not on a first-name basis. There are no letters from Menzerath to de Lacerda in the family archive. António Almeida (present volume) states that de Lacerda never talked about his time in Germany, but only about his sojourns in the US and Sweden. Still, Menzerath and de Lacerda must have developed mutual respect and a kind of friendship. Menzerath, in another letter to the Junta, writes about de Lacerda (see Figure 4)<sup>13</sup>:

<sup>11</sup> One reason may well have been his status as a lecturer.

<sup>12</sup> "New problems have arisen: they concern the translation of the registrations back into speech using the photocell. This problem has not yet been solved completely."

<sup>13</sup> "He is the most hard-working and efficient student I have ever had. On a personal strand, I appreciate his reserve and modesty, and we have collaborated on a volume which will soon go to press. In addition, Dr. de Lacerda has developed a completely new recording method here (...)" (M. in a letter to the Junta de Educação



lie. Er ist mein fleissigster und tüchtig-  
ster Schüler, den ich je gehabt habe. Positi-  
v ist er mir, bei seiner Zurückhaltung  
und Bescheidenheit, sehr sympathisch, und  
wir haben in Gemeinschaft eine Arbeit durch-  
geführt, die jetzt als Monographie zur Zeit-  
schrift für Experimentalphonetik in Bonn  
erscheint. Ausserdem hat Dr. de Lacerda  
eine ganz neue Aufnahme-Methode hier  
angewendet, die gleichfalls in einem

Figure 4: Excerpt from a letter dated 6 June 1933 from Menzerath to Luis Raposo, Junta de Educação Nacional (Arquivo do Instituto Camões, Lisboa, Box 1337, File 3).



Figure 5. Menzerath and de Lacerda in the Bonn laboratory (courtesy Paulo Lacerda)

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Nacional on 13 April 1932). This suggests that Menzerath saw the student rather than the colleague in de Lacerda. While mentioning that he likes his reserve and modesty, he does not talk about friendship. He expresses his high esteem by calling de Lacerda “Dr.,” which, strictly speaking, was not justified because de Lacerda did not have a PhD.

The above photograph (Figure 5) may serve to illustrate the nature of their relationship. The present authors do not believe it is overstretching the interpretation to conclude that Menzerath adopts the role of the supervisor, sitting there in his suit<sup>14</sup> and being informed about the latest developments, whereas de Lacerda is wearing a lab coat and seems to adopt the role of the junior member of the team who is the one to actually carry out the work and present the results to the professor. This is in keeping with the impression of a rather stern character which is conveyed by Menzerath's publications (see section 4 above). In his obituary, Lacerda calls him “[...] um grande Amigo e um grande Mestre” (‘a great friend and a great master’ – our translation) [13: 167].

## 7 References

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<sup>14</sup> This, by the way, is in sharp contrast to Panconcelli-Calzia; cf. the photographs in Hoffmann, this volume.

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