Abstract. This contribution to “Lacerda 120” is a personal account of a student of Lacerda’s who had the privilege to work with him in the years 1966–68. During that time he helped Lacerda to collect data for his vast and last research on Portuguese intonation using tools like the chromograph and the tonogramme desk that Lacerda himself had designed and developed. The auspicious beginnings of Lacerda’s scientific career are mentioned and some aspects of his last research work on Portuguese intonation are highlighted.

First I would like to greet the colleagues and the public who found their way to Porto University in order to honour Armando de Lacerda on his 120th anniversary. I also have to thank the university dignitaries who made this meeting possible, and I express my gratitude to the Executive and Scientific Committees for the organization. A special thank you goes to Quintino Lopes, who rediscovered the Coimbra Experimental Phonetics Laboratory and its founder Armando de Lacerda, and is developing tremendous efforts to bring both back to historical awareness.

I am of course very happy, perhaps I should say “lucky”, to have been asked to deliver the keynote address, but I am also conscious of the fact that this does not imply any merit of mine, the whole merit belonging to Armando de Lacerda who in 1966 chose me to be his student assistant. In my talk I’ll first focus on him as a person, and afterwards I’ll call your attention to the beginning and the end of his scientific career.

As some of you know I left phonetics in 1986 and worked then in computer utilities for translation till 2010, when I retired. So my span of life as a phonetician goes from 1966 to 1986. Nonetheless it means twenty years that begin with the acquaintance with Armando de Lacerda. Although I left Portugal in 1968 we still maintained a regular correspondence and I met him a few times between 1975 and 1984. How I came to meet him and perceive him during this time that is what I will try to convey to you next. It is a subjective recollection or a reminiscence of what occurred long ago, so I will not pretend to sketch a picture of Lacerda’s personality.

When I began my English and German Studies at the Coimbra University in October 1963, Phonetics was among the introductory subjects taught during the first academic year, but only for the duration of one semester while all other subjects stretched along the whole year. Lacerda gave this course and so I met him for the first time as a “freshman”, or in Portuguese “caloio”.

The course was in form of a lecture in one of the small amphitheatres of the Arts Faculty, that means Lacerda was down on the stage at an impressive desk with the big blackboard behind him, and around 200 students sitting before him like a human cascade. His lecture went along the lines of what was usual at that time, it was frontal teaching. As for the students they were not expected to read original articles or books, one book was enough to succeed in the exam at the end of the semester: It was the “sebenta”, which one could translate by “greasy book”. This was a record or transcript of what the lecturer said in his course, sometimes it had been written down by one or more students, then copied and distributed or sold to their colleagues, at other times the teachers would themselves write it down. The designation “sebenta” came from the
fact that students tended to sell it to the younger colleagues as soon as they had passed the exam. So with time such notebooks became "greasy". One might say they were a real institution. For Lacerda's course there were two "sebentas", the one for phonetics had been assembled by students, the other one for phonology was the work of Lacerda himself.

When five years later I went to Marburg University in Germany and saw how students were supposed to read the original literature and deliver their own paper, I was a bit ashamed of the Portuguese academic system, but today I think in the end it was adapted to the circumstances. We were very young, I myself was admitted to university at the age of 17, and we were used to a school system of "livro único" or "single book", that meant that for each subject only one textbook was used from north to south in every school. Moreover, the syllabus at Portuguese universities tended to prefer broad to deep knowledge, so at that time one would have expected too much from students to do their own reading.

This is the context in which I met Lacerda. I found out during his lectures that in fact phonetics interested me more than literary subjects. I even dared to step out of the crowd and ask questions on points about which I wanted more information. The first time I addressed him with a question he commented: "Oh, you are also from Porto!" This intrigued me because neither I knew that he came from Porto nor had I any cue how he found out my home origin. He explained that my pronunciation was undeniable. I was embarrassed because the Porto accent was laughed at everywhere else in Portugal and after that I tried to get rid of it as best I could. Today I regret the loss of this very distinctive feature.

Lacerda made a strong impression on me and I was very curious to visit the Laboratory. I asked him a few times if and when it would be possible. He didn't refuse, but he always excused himself politely by explaining the lab needed tidying up and he was too busy with research in progress. I guess I was a bit of a nuisance to him because even after I passed the course I would ask him about a visit to the lab whenever I saw him in the corridor. Anyway, my perseverance was rewarded some two years after I had passed his course. It was he himself who came to me once in the corridor and asked me if I wanted to help him in a research project he was doing and for which he had received funding from the Instituto de Alta Cultura, so that he could even pay me. I accepted immediately and really rejoiced. He refers to the official subsidy at the beginning of the book on this research [6: 1].

That is how my work with Lacerda began, which gradually grew to friendship between teacher and student, I can go so far as to say even almost like father and son. Lacerda was a tireless worker, but he also knew the value of pausing in between, so we had the opportunity to talk about most everything.

He was very curious. Once I had a book with me which I laid on the table face down. He lifted it and looked at the front cover. I felt uneasy because it was a book on sex, but he reassured me, I shouldn't feel shame, to enjoy sex was important in our lives. Looking back, I doubt that any other docent at that time would have reacted in the same way.

He did not show me the premises of the lab right at the beginning, neither did he explain which kind of work I was expected to do. It was only with time that I came to know the different rooms and understand my job. At that time the lab was not busy anymore, I think Lacerda did not teach in the summer language courses and the only foreign visitor I remember during the two years I worked there was Brian F. Head, who for some time was a visiting professor in Coimbra.

I did not have part in Lacerda's theory building. He had been working on it since 1939, as he explains in the introduction to “Objectos verbais e significado elocucional” [6:1], and this last research, which was published in 1975, was the culmination of a series of smaller articles along the years. But I accompanied him in all practical work, preparing and doing tape recordings, transcribing and classifying each utterance auditorily, making chromogrammes, measuring the fundamental tone in each of them, and converting them into tonogrammes.
At that time the polychromograph had ended its active life and Lacerda worked a few days to bring to life again the simpler chromograph with only one inkjet. It was a prototype that had probably not been used for years, so every part of it had to be inspected and adjusted, gas and ink reservoirs had to be filled up, pressure calibrated, drum speed and paper strip tension fixed. Then it was the work of a few weeks to produce the chomogrammes for the recordings and of a few months to measure the wave period and draw the respective tonogrammes. In Lopes's book on the Coimbra Phonetics Laboratory there are illustrations showing the long chromograph loop going through the room and also the table used for the measurements [7: 50; 66-67], which was obviously designed by Lacerda [4]. Although his degree from Porto University was in German and English Philology, he was just as much interested in scientific progress in general. He was quite enthusiastic when he explained details of the chromograph to me, which he had developed in Germany in order to have better function curves than with the kymograph. One of the problems was to craft drums with a section as near to a circle as possible. In Germany he had found a mechanical workshop that threw a light beam on the drum sideways and used its reflection on a surface in order to correct the curvature. In Portugal, he said, he hadn’t been able to attain such perfection, but he was satisfied with cylinders approximating roundness.

So we worked patiently on things that computers can quickly take care of today, but it gave us the opportunity to talk. I learned a lot from and about him. He was a great admirer of the U.S.A. He had visited universities there a few times and was impressed by how hard working lecturers and students were. He also loved Hollywood movies for their technical precision and acting performance. Germany, which had been his first stay abroad of some length, didn’t seem be among his preferred countries, although he had praising words about the colleagues whom he had worked with. It could be that the IIIrd Reich and WWII influenced him, but I do not remember to have ever spoken about that with him.

In relation to this I remind you that he was in Germany in the middle of the Nazi struggle for power. In 1933 the Nazis after being extremely successful in the elections of the “Reich” very quickly passed the Enabling Act, which transferred power from the Imperial Diet or “Reichstag” to Hitler’s government. I don’t exactly know when Lacerda came back to Portugal, but while he was in Germany, he certainly noticed what was going on and how the Second World War was being prepared.

However, in fact we never spoke politics. I myself came from an unpolitical family and as far as Lacerda is concerned a record of the political police PIDE from 1950 attested him that he had no definite political orientation (“não se lhe conhece politica definida”), as Lopes [7: 127] documents in his book. Another document from 1953, assembled on the occasion of an investigation of the Education Ministry, repeats the assessment and astonishingly explains this by the fact that “he speaks ill of everything and everybody [tr. AA]”. The same document declares he is “intelligent, dynamical, and of good morals” [tr. AA] [7: 127]. In fact, Lacerda felt free to criticize everything he found wrong, had contact with colleagues from left as well as right wing circles, he had profited from Salazar’s approval of establishing an Experimental Phonetics Laboratory when the new faculty building was set up, he was happy to have a predictable director for negotiations notwithstanding his regime affiliation.

There is one exception to the absence of politics in our conversations, but it referred to something indefinite in the future. I do not remember the reason for or the occasion on which he mentioned that, obviously communism would be universally accepted at some point, and that there was no better idea for an altruistic and peaceful society. At that time communism was identified with Russia or the Soviet Union, and he immediately restricted his opinion in a tone between upset and angry: He had been told in Russia WCs didn’t have doors, which he found totally unacceptable! We could say the moral of the story is that a beautiful idea does not harmonize with doorless WCs…
When I look back I can say Lacerda was a very gentle person. He spoke very affectionately about his late wife, and then again after his second marriage about his second wife. He also loved nature and even ran a farm in North Portugal for many years. But he hated stupidity in all its manifestations. Take for instance the wasting of resources. A dripping tap tormented him, he did not accept that the people in charge did not take care of it. Or letting the water run while soaping one’s hands was another sin for him. At that time ecology hadn’t yet entered public consciousness, but Lacerda certainly had ecological concerns.

Lopes’ book is full of pertinent illustrations, one of them quite striking: It shows a black man in a not quite well fitting black suit, and three white men. The former is named Mateus in the caption without family name, the white men have their full names mentioned. In the Portuguese colonies if a particular child was lucky enough to enter a missionary school and be encouraged in its studies (cf. [1], passim) it might become someone like the black man speaking Kimbundu phrases at the Phonetics Laboratory in Coimbra [7: 58]. Anyhow, it shows that Lacerda was interested in recording samples from any language that he could get hold of. Perhaps the Kimbundu recording is still to be found in his archive.

Considering the present situation in Europe and, in fact, the world, let me tell you that Lacerda had his own opinion on war. We should recall that it was the era of the Cold War, the Vietnam War, the Iron Curtain and uprisings in socialist countries, and liberation movements in the colonies. Lacerda’s creed was that war is all about money and the party with more money is bound to win. So he said, instead of killing people and destroying whole countries the warring parties should enter into a money contest. Each conflicting party should make recurring payments to an international organisation, and as soon as one of them would stop paying the other would be declared the winner. The advantage of this method is obvious: no killing, no destruction, money accumulated for the advancement of humanity. It was a marvellous idea, but reality didn’t follow up.

After this long preamble on Armando as a person to whom I was very attached, let me make you acquainted with Lacerda’s last research work, which, as far as I know, remained unnoticed in the phonetics community except for the occasional mention in articles or books by Portuguese authors. Once you cast a look at this piece of research you understand why it remained unnoticed. There is not one single word in English, not even an abstract. This is not language chauvinism, Lacerda published work in different languages and in cooperation with foreign colleagues, and he also carried out research on other languages. You may get a more complete view of Lacerda’s linguistic interests in Lopes [7, passim]. The reason for publishing this extensive research only in Portuguese, I guess, is that in this phase of his life he was quite solitary and cut off from the phonetics community. You must understand that the Laboratory never had a regular budget of its own, nor was it endowed with technical or scientific personnel.

So, as soon as Lacerda became emeritus and no successor was imminent, other departments turned their “room hunger”, as Lacerda wrote to me, towards the premisses of the Laboratory. In a letter of 23 May 1974 he reports very dramatically how faculty employees invaded it, began to dismantle everything and to store it in the basement. Metaphorically speaking, that is what also happened to this last research piece of his: It remained unnoticed on the bookshelves of some libraries while, in fact, its innumerable suggestions for further research could have guided a cohort of disciples.

Lacerda became famous in phonetics and linguistics in general mostly for his scientific and technical achievements. Technically, he developed the chromograph as a better alternative to the kymograph, and scientifically, with this new technique, he was able to shed new light on the mutual influence between speech sounds, called coarticulation. In the 1930ies he published a few contributions on these subjects, the most important one being a volume together with Paul Menzerath on “Koartikulation, Steuerung und Lautabgrenzung” [8]. Although this is in the domain of segmental and trans-segmental phonetics, Lacerda became
interested in suprasegmental topics very early on and gave a talk entitled “Die Flexion des Sprechtones im Portugiesischen” at the Third International Congress of Phonetic Sciences in 1938 [5]. He himself refers to this talk at the beginning of “Objectos Verbaís e Significado Elocucional / Toemas e Entoemas / Entoação” as marking the onset of his research on “expressive functional phonetics” [tr. AA] [6: 1]. It is impossible to give you a presentation of this volume of more than 500 pages, but I will try to draw your attention to just a few aspects.

Lacerda presents his view on understanding of the world or of “objects” among which he includes speech utterances as being “verbal objects” that convey an “elocutional meaning”. For me reading this book is at the same time imagining Lacerda sitting at his desk or walking around in his laboratory, absorbed in the quest for differentiating concepts, and defining them, advancing in small steps, and reconsidering each step many times. In fact a good part of the investigation focuses on definition and terminology. For the sake of an example and since the concept of “object” is the point of departure let me translate his definition:

An object consists of a real-mental, or mental, actuation perceived by an individual as being a unit. It can be simple or complex. It is simple if it cannot be analysed into two or more aspects either because it is not further analysable or the individual perceiving it does not analyse it.

“An object, being complex, is disassembled, when analysed, into as many aspects as the discriminations it prompts, which aspects, stopping to operate as elements of a set, dissociate from the set and become objects of their own. [...]” [6: 13].

Departing from this first unit he unveils successively his views on verbal communication in the form of an authentic treatise on the epistemology of speech. He describes mental processes and arrives bit by bit at the concept of verbal object that emerges again from the title of the work. He advances then to acoustic-articulatory objects, defines the word and in his theory differentiates it from the vocable. Saussure's dichotomy signifiant / signifié appears here as apresentação / representação ('presentation / representation'), but he adds expressão ('expression') as a third aspect that interests him most in the research on intonation. Along the more than 100 pages of the definitions section it is also remarkable that numerous examples underpin the theoretical discourse.

In Chapter 5, Lacerda goes on to report on his earlier “analysis of the expressive form of the utterance” [tr. AA] and sets the beginning of the third phase of research to around 1964 [6: 131]. This phase lasts for ten years till 1974, when Lacerda completed the manuscript, and he sums it up in the following way:

“We combine old and new discriminations and are finally able to guide the research so that it becomes possible to acquire knowledge on the speech sound behaviour underlying the expressive process of elocutional form.” [6: 131; tr. AA].

The kind of material used for the new research is described in this chapter. Mono-allophonic, poly-allophonic monosyllabic, and polysyllabic one-word utterances were recorded which subsequently underwent several analytical steps. Auditorily they were transcribed and evaluated according to articulatory tension, quality, and tonality, instrumentally chromogrammes and respective tonogrammes were produced. My job from 1966 to 1968 was exactly to assist him in this task. That is where I learned transcription and auditory analysis, drew fundamental tone curves, and understood that fundamental tone elicits tonality sensation.

It might sound strange to speak of “mono-allophonic one-word utterances”. In fact Lacerda, for the sake of facilitating the experiments, exploited a special Portuguese feature that I refer to as “lonly meaningful vowels”, by which I mean [a] and [ε]. In Portuguese the answer to a question is not “yes” or “no”, you need to repeat the verb of the question, either alone for an affirmative, or preceded by “não” for a negative. So [a] spelt <há> can be an answer meaning “yes, there is”, and [ε] spelt <é> can be an answer meaning “yes, it is”. Both vowels can also be interjections spelling <ah> and <eh>. I think this was a good stratagem because it allowed
to have many different but easily comparable recordings of utterances that convey situation dependent “elocutional meanings”.

As an example I reproduce Fig. 21 and 22 [6: 156] that show the auditory analysis and the tonogramme of a recording of [a]. Lacerda proposes imaginary situations that would conform to the perceived course of tension, quality, time, and tonality (Fig. 21). In this case the tonogramme (Fig. 22), though more detailed, confirms the tonality course, but we also had a few instances in which subjective evaluation and instrumental analysis produced conflicting results. In the comprehensive discussion of the data Lacerda also refers to this divergence and remarks that auditory discrimination is precarious compared to instrumental analysis.

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I called this book a treatise. I mean by this denomination that you cannot read it like most specialist review literature: bibliography, hypothesis, data acquisition, experimental setup and accomplishment, results and statistics, discussion and conclusion. Quite on the contrary, here you have to accompany Lacerda gradually into his intellectual adventure of integrating knowledge and perception with speech communication and expression. From the study of extensive material he advances with many examples through the determination of what should be considered as toema and entoema on to entoação in as many aspects as possible.

The parallel consideration of knowledge, understanding, perception, speech sound, meaning and expression attests that Lacerda produced here a scientific work of exception. But please mind that researchers with a more pragmatic interest than I have in this workshop will definitely be able to discern important findings that they consider worth discussing. Here I cite Frota [3: 32–33].

Lacerda closes this long work with three lines from a poem by Campos de Figueiredo (1942):

*Anda comigo*
*uma palavra que não digo,*
*porque é só pensamento.*

I dare translate in prose: “a word goes with me / that I don’t utter / because it’s mere thought.” This is an allusion to what Lacerda states at the end of the 50 pages résumé, namely that the man of science should not “trespass the limits of clear understanding” [6: 532]. In light of the link he makes between science and poetry let me finish with a word about Armando de Lacerda and literature. He himself in his youth wrote one thriller, at least two dramas, and one film script. The dramas were staged, one of them even in the national theatre. So Lacerda knew about and liked literature, his preferred Portuguese modern poet being Campos de Figueiredo. But towards the end of the 1960ies university lecturers began to discover and praise Fernando Pessoa, at the same time ignoring Campos de Figueiredo, which he disapproved of a lot. Perhaps
with this quotation he intended to rescue Figueiredo from oblivion. And I would like to thank Quintino Lopes for preserving the memory of Armando de Lacerda.

References