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***MEMÓRIAS DO INSTITUTO OSWALDO CRUZ FROM THE AGE  
OF EMPIRE TO THE POST-GUTENBERG WORLD: LINGUA  
FRANCA AND THE CULTURE OF TROPICAL MEDICINE***

**Florianópolis  
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Tese submetida ao Programa de Pós-Graduação em Estudos da Tradução da Universidade Federal de Santa Catarina para a obtenção do Grau de Doutor em Estudos da Tradução.

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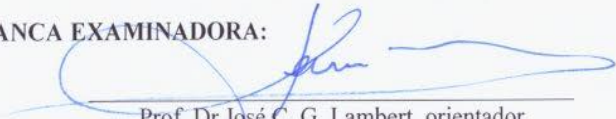
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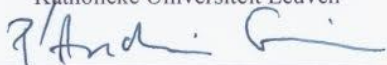
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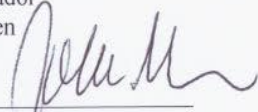
  
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*In memoriam:*  
*Dr. Nicolau Serra Freire (1948-2015)*





*“Language is a part of our organism and no  
less complicated than it.”*

Ludwig Wittgenstein



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**To Vanessa, my constant companion of** ...how long has it been?...not long enough! We heard that a PhD can destroy a marriage, but doing ours together has been, instead of stress, a relief...two heads really are better than one.

and to the Sine Qua Non

## ABSTRACT

The Oswaldo Cruz Institute, founded in 1900 as a public health initiative, represents the institutionalisation of empirical science in Brazil. In 1909 it launched a journal called *Memórias do Instituto Oswaldo Cruz* that now publishes only in English, but was multilingual when it began and continued to be so for much of its history, although the trajectories of the languages of publication differed greatly. If changes in language represent changes in network structure, these shifts in language policy reflect repositioning with regard to partnerships, colonialism/politics and the nature of the scientific community and the organisational development of the Institute. To better understand these changes, a diachronic analysis of the full corpus (1909-2013) of this journal was conducted. This corpus was analysed for foreign language frequency, origin and content as well as paratextual clues regarding *Memórias'* editorial policy. Based on the results, distinct language-based editorial periods were identified and the trajectories of individual foreign languages were traced. Foreign language quality was evaluated in an effort to clarify the agency and purpose of translation. Pursuant to these questions, an ancillary corpus, consisting of biographical editorials in *Memórias*, parallel Institute publications and correspondence, the language data and policies of national and international cohort journals, as well as extra-institutional publications, was examined. These sources revealed priorities in consumption, production and networking that clarified the previously-established editorial periods, as well as those of the general milieu of Tropical Medicine literature. A final dimension to the investigation was an explanatory analysis of these phenomena through norms specific to Anderson's conception of imagined communities and Bourdieu's conception of the institutionalized, objectified and embodied state, and, moreover, as a function of the post-Gutenberg paradigm shift due to the onset of digital publishing, which was predicted in the work of McLuhan and Ong. Though the journal was originally intended to promote the Institute's research, a complex changing dialogue with international partners was revealed in a pattern that seems to defy colonial models prevalent in the field of Tropical medicine. The Institute seemed to thread a delicate balance between science as a form of nationalism and science as an independent metanational community, the fragility of which was tested by war, alliances, economic downturns and dictatorship. The onset of English as

the journal's only language of expression occurred quite late, at roughly the same time its electronic version appeared. This could have been an inevitable result of a new open editorial policy set in 1980, but it also seems due to a new level of interconnectivity in the scientific community precipitated by advancing communication technology, which would tend to confirm Anderson, McLuhan and Ong's theories about communication technology as a fundamental driver of society.

**Keywords:** *Memórias do Instituto Oswaldo Cruz*, Tropical Medicine, scientific literature, translation policy, colonialism, lingua franca, scientific community, digital publishing

## RESUMO

O Instituto Oswaldo Cruz, fundado em 1900 como uma iniciativa de saúde pública, representa a institucionalização da ciência empírica no Brasil. Em 1909 ele lançou uma revista chamada *Memórias do Instituto Oswaldo Cruz*, a qual hoje publica artigos somente em inglês, mas era multilíngue em seu início e continuou a sê-lo durante grande parte de sua história, apesar de as trajetórias das línguas de publicação terem diferido imensamente. Se mudanças na língua representam mudanças na rede de trabalho, essas mudanças na política linguística refletem um reposicionamento com relação a parcerias, colonialismo/políticas e natureza da comunidade científica e do desenvolvimento organizacional do Instituto. Para melhor compreender essas mudanças, foi conduzida uma análise diacrônica do corpus completo dessa revista (1909-2013). Esse corpus foi analisado considerando a frequência, a origem e o conteúdo em língua estrangeira, bem como indícios paratextuais relativos à política editorial das *Memórias*. Com base nos resultados, identificaram-se períodos editoriais distintos com relação às línguas, e foram traçadas as trajetórias de línguas estrangeiras individuais. A qualidade da língua estrangeira foi avaliada em um esforço para esclarecer a agência e o propósito da tradução. Em conformidade com essas questões, foi examinado um corpus auxiliar, composto por editoriais biográficos das *Memórias*, publicações e correspondências paralelas do Instituto, dados linguísticos e políticas editoriais de revistas nacionais e internacionais com características semelhantes, e ainda publicações extra-institucionais. Essas fontes revelaram prioridades de consumo, produção e trabalho em rede que esclareceram os períodos editoriais previamente estabelecidos, bem como aqueles da área de literatura voltada à Medicina Tropical. Uma dimensão final da investigação foi a análise explanatória desses fenômenos através de normas específicas da concepção de comunidades imaginadas de Anderson e da concepção de estado institucionalizado, objetificado e incorporado de Bordieu, e, ainda, como uma função da mudança de paradigma pós-Gutenberg, devido ao advento da publicação digital, a qual foi prevista nas obras de McLuhan e de Ong. Apesar de a intenção original da revista ter sido promover as pesquisas do Instituto, um complexo e dinâmico diálogo com parceiros internacionais se revelou em um padrão que parece desafiar os modelos coloniais prevalentes na área de Medicina Tropical. O Instituto pareceu traçar um delicado balanço entre a ciência como forma de nacionalismo e a ciência como

uma comunidade metanacional independente, cuja fragilidade foi testada por guerras, alianças, crises econômicas e ditaduras. O começo do inglês como única língua de expressão da revista se deu já tarde, praticamente no mesmo momento do surgimento de sua versão eletrônica. Isso pode ter sido um resultado inevitável da nova política editorial aberta estabelecida em 1980, mas também parece ter se dado graças a um novo nível de interconectividade na comunidade científica impulsionado pelos avanços da tecnologia de comunicação, o que tenderia a confirmar as teorias de Anderson, McLuhan e Ong acerca da tecnologia de comunicação como um propulsor fundamental da sociedade.

**Palavras-chave:** *Memórias do Instituto Oswaldo Cruz*, Medicina Tropical, literatura científica, política de tradução, colonialismo, lingua franca, comunidade científica, publicação digital.



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## PREFACE

This is a story I will never really get to the bottom of, although I hope that I have at least explored it in sufficient detail to begin to bring forth some of its many important lessons. In fact, the longer and deeper I look into these people, this field, this polysystem, what have you, the more things come to light and the more complex it all becomes, perhaps not at all unlike the sensation these scientists felt with their forays through the microscope into the human body: scaling downwards to the level of its tiny pathogens, only the effects of which are visible on the surface (and then sometimes detectable only to the trained observer). Unraveling the relationships of these Brazilian scientists *through language* with the international Tropical Medicine network was also not unlike the process, so clearly exemplified by Dr. Chagas at the beginnings of the Instituto Oswaldo Cruz (shortly after the turn of the 20<sup>th</sup> century), of determining the chain of events, and the settings that facilitate them, in the transference of code (in his case the protozoa that causes American trypanosomiasis) through a vector to a host to incubate, reproduce and dominate. But, not to abuse the metaphor, it is the model and not necessarily its political overtones which is the fascination here.

In this fractal-like world of information, I did often feel like I would simply get lost, while at the same time I perceived that I was locked out of critical living detail by the historical gap (notwithstanding the careful work of the Institute's graduate school for the history of science, the *Casa de Oswaldo Cruz*). But I am, nevertheless, grateful for the latitude afforded me by my academic supervisor to freely explore, the results of which I hope to have been able to shape without insufficient focus.

However, before getting started, I would like to preface this study with an account of how I first came to know, in a striking way, about the existence and work of the *Instituto Oswaldo Cruz*. When I first came to Brazil in the early 2000s, I was readily able to get work teaching English, which soon came to involve revising the language of scientific articles due to the immense backlog at the school where I worked. What stuck in my mind from this was the (often impenetrable) wall that English represented for Brazilian research, specifically, the level required by the peer reviewers and editors of international academic journals and the lack of personnel to deal with it here.

A few years later, having moved back to the US, my wife and I slept by an open window in our new apartment and woke up itchy. Unbeknownst to us, we had been bitten by a specific strain of mite infesting the pigeons nesting in the gutters above. This bite (instead of granting super powers) caused a chain reaction in our immune systems leading to a state of hypersensitivity in which we could feel, crawling over our skin, day and night, the many tiny parasites that unfortunately live in symbiosis with humans.

Of course we didn't know this; we thought we had been infested with some kind of indestructible lice, from which no amount of disinfection could bring us relief. A bit of internet research led us to a 'bird mite victim' support group: people who had the same condition as us, but were no better off in their understanding of it. Of course the landlord didn't believe our continuing complaints after he had knocked down the nests – he even contacted the entomology department at a nearby state university to be comforted with the information that our bird mite story didn't add up. In the end, the only way he would let us out of our contract was if I proved there were mites in the house, so I actually bought a microscope and pulled samples from my arms with packing tape, sending the slides off to the University of Florida for identification... and we eventually did find a mite.

However, after we moved to a new apartment across town (closer to the school where I was teaching English as a Foreign Language), the crawling sensation came back, despite our having put all our belongings in storage and fumigating them profusely. I had even bought the most powerful outdoor pesticide I could find and we slept directly on the carpet which I had liberally doused with the powder. When this absurd measure didn't work, we ourselves contacted the university for help, but they only insinuated that we needed mental health treatment.

Thus, having exhausted our hope of a cure by our own means, we abandoned everything and came back to Brazil in desperation. My mother-in-law, a professor of nursing, asked around at the hospital for advice, and a colleague suggested that we check with FIOCRUZ (the Fundação Oswaldo Cruz in Rio de Janeiro). A phone call and a long car trip later, we found ourselves in the Arabesque halls of its *Palácio Mourisco*: so still, otherworldly and strangely out of place in the bustle of Rio. We were brought into a lab/office where we awaited the arrival of Dr. Nicolau Serra Freire, a mite specialist, who was late due to the fact that his mother had just died a few hours earlier - and yet was still honoring our appointment, which to this day astounds me. His assistant, Dr. Gazeta calmly prepared us psychologically for the news, telling us

that many people the world over had come to them for a solution to this problem and that, no, we were not infested (or insane). After Dr. Nicolau's explanation of what had actually happened to us, he sent us to a former student's medical office in the city of Juiz de Fora to receive a prescription for a common allergy medicine, since he was a veterinarian and couldn't prescribe anything for humans. A week or so of pills later, we had our lives back.

I was shocked that this simple information was not properly diffused worldwide, since people with this condition have actually been driven to burn down their own houses and even kill themselves. Although I fervently offered to translate or revise any of Dr. Nicolau's current or future publications for him, he never took me up on it, and these events receded in my mind. We went on to establish a translation business in Brazil, specializing in academic – particularly medical – articles, and ended up in the graduate program at UFSC. I set out to write about the role of the text reviser in the chain of production of scientific literature, but looking for more specific material to analyze, I discovered the SciELO database and stumbled upon the *Memórias do Instituto Oswaldo Cruz*, with its complete, meticulously scanned corpus from 1909 to the present available, open access, online, and I realized that my focus had just changed.

Thus, after these past years of research, I feel obliged to point out the industry, intelligence, resourcefulness and dedication of these researchers who carved out a place, despite so many disadvantages and great adversity, alongside (and sometimes ahead of) scientists patronized by the mightiest colonizers, and this years before the foundation of the first Brazilian university<sup>1</sup>.

Nonetheless, the purpose of this study is neither to engender secondhand patriotism, produce promotional discourse or repay a debt, but rather is derived from an expanding awareness about the distorted nature of a construction called the “Third” or “developing” world, as well as the central function that language has been playing, for good or for ill, in its global interface.

*William Hanes, Florianópolis, June 2016*

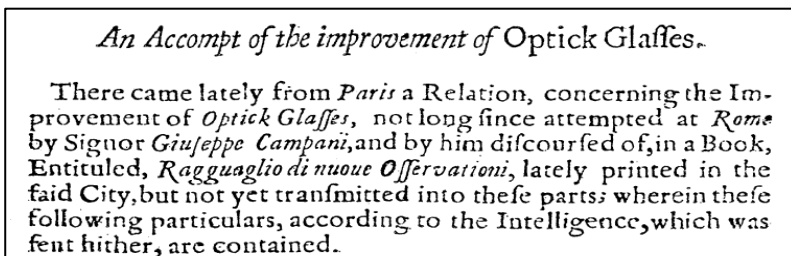
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<sup>1</sup> The first permanent university was the Universidade de Rio de Janeiro (now the Universidade Federal de Rio de Janeiro), founded in September 1920 as a union of preexisting Polytechnical, Medicine and Law schools (Portal Universia 2008).



## 1 MEMÓRIAS OF MULTILINGUAL SCIENCE

### 1.1 DEVELOPMENT OF THE SCIENTIFIC LITERATURE AND THE STATE OF ITS LANGUAGE POLICY META-DISOURSE



**Figure 1.1:** Lead article from *Philosophical Transactions of the Royal Society* 1665(1)<sup>2</sup>

These are the first lines of the first article in the first issue of what is held as the very first scientific journal<sup>3</sup>, and it is strangely appropriate that they transmit information about an observational apparatus over a distant web of connections by means of translation. From such a perspective, the *society* aspect, rather than the *royal* one, comes to the fore, i.e. these authors appear less as agents of the crown than as partakers of a different identity, that of a global society whose basis is less territorial – or linguistic – than methodological. The publication of this and similar journals helped codify and institutionalize the scientific report and scientific literature, which had been largely contained in private or semi-private letters to that point (SOLLACI; PEREIRA 2004, p. 364-365; LARIVIÈRE; HAUSTEIN; MONGEON, 2015; VALLE, 1999).

It should immediately be pointed out that many of these scientists were multilingual. When these journals were being established, the European vernaculars that would go on to become the *linguae francae* of global colonial

<sup>2</sup> In case of difficulty in making out the text: “There came lately from Paris a Relation, concerning the Improvement of Optick Glasses, not long since attempted at Rome by Signor Giuseppe Campani, and by him discoursed of, in a Book, Entituled, Ragguaglio di nuoue Osservationi, lately printed in the said City, but not yet transmitted into these parts; wherein these following particulars, according to the Intelligence, which was sent hither, are contained.” (Royal Society 1665:2)

<sup>3</sup> Debate exists about whether this or the French Journal des Sçavans is first (March 5 vs. January 6, 1665, respectively), however, the Journal des Sçavans was not dedicated exclusively to science (<http://gallica.bnf.fr/ark:/12148/bpt6k56523g/f5.image>).

empires had been established relatively recently as official court languages, whose consolidation and territorial dissemination were incomplete for quite some time afterwards (e.g. ANDERSON, 1983; 2006, p.42,44; BOURDIEU, 1991, p. 258). The linguistic channel for Newton & Leibniz' famous controversy about the calculus that began at the end of the 17<sup>th</sup> century, for example, was Latin (*Commercium Epistolicum*, Newton 1714 see Wilkins 2002). The corpus of Leibniz' epistolary writings was approximately 40% Latin, 30% French and 15% German, with some letters in English, Italian and Dutch (Gottfried Wilhelm Leibniz Bibliothek Library 2016). Meanwhile, four of Newton's six major scientific works were originally published in Latin and, although *Opticks* was first published in English in 1704, he had translated it to Latin by 1706 for international use (The Newton Project 2016). Moreover, in 1685 the Royal Society made it obligatory in the newly-created office of Clerk (the first of which was no less than Edmond Halley) "That he shall be master of the English, French and Latin tongues" to handle the flux of communication with the continent (WELD, 1848, p. 304).

It is evident that the internationalism of science was especially intensified with the development of the scientific journal, and this industrialized entextualization owes its existence to the technological innovation of the movable type press, a novel medium of mass communication that had swept Europe and shaken its institutions in the previous century (McLUHAN, 1962; 2000; ONG, 1982; 2002, ANDERSON, 1983;2006; VERDUIN, 1976). And although Latin still predominated as a form of universal discourse for important works, the bustling, ever-expanding scientific network did not necessarily entail a sole lingua franca, since local vernaculars were employed for the regular business of scientific societies. Thus, as the figure above also clearly testifies, the circulation of ideas, which is fundamental to the scientific enterprise (WELD, 1848, p. 301), is subject to a specific sociocultural force also at work in literary markets – translation – which has been described as "the hidden motor generating and driving national literatures" (FLYNN, 2013, p.16).

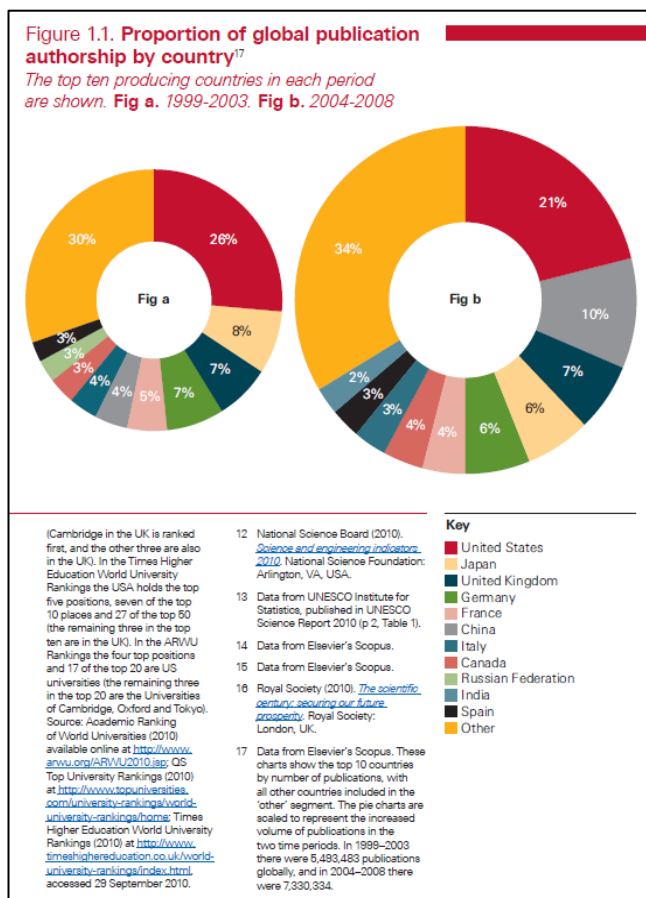
Fast forwarding 350 years to a recent publication by the same organization demonstrates the international proliferation of this enterprise, now firmly entrenched as a marker of 'development', economic advantage and prestige, as well as the recipient of massive public investment<sup>4</sup> (ROYAL SOCIETY, 2011, p. 17, Figure 1.2, below, especially item 16: "The scientific century: securing our future

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<sup>4</sup> According to batelle.org, 2014 R&D spending in the United States alone was calculated at US\$465 billion.



prosperity”). Two particular characteristics of the system stand out in this figure: first, the top producers were principal belligerents in the Second World War (US and UK at 1st and 3<sup>rd</sup>, respectively)<sup>5</sup>, which is particularly evident on the left (1999-2003); second, the lower left column lists different rankings of world universities, which are, again, totally dominated by the US and the UK.



**Figure 1.2:** Proportion of global publication authorship by country, reproduced from Royal Society (2011, p. 17)

<sup>5</sup> According to Lillis & Curry (2010:11) The “‘triad’ of the United States, European Union and Asia still dominates scientific journal production, totalling 81% of world share in 200up from 72% in 1981.”

As might be expected, these facts are not disassociated from language issues within the literature: although a minimum of 62% of the sci-med-tech (STM) literature in 2008 came from countries in which English is not an official or default national language (HANES, 2016, p.169), this system has developed a virtually exclusive dedication to a single language as the language of production, such that “the language of science” has now become “scientific English” (HALLIDAY, 2004, p.138). According to the 2011 Scimago Scientific Journal Rankings, of the top 100 scientific journals, only 18 are from outside the US/UK – and of these 18, only 2 are not affiliated with giant science publishing houses such as Elsevier, Wiley and Springer. Of the top 1000 journals in this list, the current issue of only one<sup>6</sup> was not exclusively in English. Even Chinese Optics Letters (ranked 433rd) and Acta Physica Slovaca (ranked 456th) were completely in English: website and all articles. In these journals, no mention was found that submitted manuscripts had to be in English –apparently it just goes without saying now (Hanes 2013b:128). Thus SciELO founders Meneghini and Packer wonder, with understandable irony, “Is there science beyond English?”(MENEGHINI; PACKER, 2007, p. 112)

Although writers such as Scott Montgomery speak of this “quiet, bloodless [...] linguistic revolution” as “a new era” in which the scientific community “begs for and even demands such a language” (MONTGOMERY, 2013, p. 168; 175), and that a “country that determines it will not teach English to its people is one that seeks defiant isolation” (MONTGOMERY, 2013, p.35), the current global science language policy must first be taken into consideration as a social practice (LILLIS; CURRY, 2010, p.19). Despite protestations that no “imperial policy is at work to impel scientists to take up this one language” (MONTGOMERY, 2013, p.22), the enormous benefits that this status brings to Anglophone countries cannot be ignored (Hanes 2016): by 2003, this \$7 billion-dollar global STM market had been the fastest growing sub-sector of the media industry in the last 15 years.<sup>7</sup> (ELECTRONIC PUBLISHING SERVICES, 2003). Thus, with multinational publishers in command of the literature<sup>8</sup>, it would stand to reason that the language of publication must comply with that of, or be

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<sup>6</sup> Phlebologie, published in Germany, ranked 638<sup>th</sup>.

<sup>7</sup> More recent figures indicate still more growth: in 2015, Elsevier’s profits were £2.070 (RELX.com 2016, i.e. its London-based owners), while those of Canadian-controlled Thomson Reuters (the owners of Web of Science) were US\$12.607 billion in 2014 (Google Finance 2016).

<sup>8</sup> “In biomedical research, the share of the top five publishers almost reached 50% in 2009 (49%), but then decreased to 42% in 2013, mainly as a result of the emergence of new publishers, such as the Public Library of Science and its mega-journal PLOS ONE, which publishes more than 30,000 papers per year. (Larivière, Haustein,& Mongeon 2015:6 )

sufficiently acceptable in, the largest market share. And that is exactly where the data point: according to a 2003 report from JPMorgan, the SMT literature market had the following proportions: 58% North America, 26% Europe, and 16% “Rest of the World” (DE GRUYTER OPEN 2014). Besides (or concomitant with) revenue, it also means control: in 1995 80% of the world was represented by 2% of the journals in the ISI’s Science Citation Index (now Thomson Reuter’s Web of Science)(GIBBS, 1995, p. 96); this is also true on an individual author level since, in 1994, of the articles accepted by the top journal *Science*, >20% were from the US, >15% were from the UK, >10% each from France, Germany and Canada, >5% from Japan and ~2% from a total of 12 “Third World” countries.<sup>9</sup> The invisibility engendered by such a system has become so entrenched and apparently self-evident that Jerome Kassirer, editor of the *New England Journal of Medicine* was actually quoted as saying that “Very poor countries have much more to worry about than doing high-quality research. There is no science there”<sup>10</sup> (DeKOKER, 1995, p. 97).



**Figure 1.3:** US Centers for Disease Control and Prevention director (1966-1977) David J. Sencer in his office with an image of the Chagas disease vector, whose discovery was described in the first volume of *Memórias do Instituto Oswaldo Cruz* in 1909

<sup>9</sup> Which is, incidentally, not entirely dissimilar to world financial contributions to the United Nations (UN, 2016).

<sup>10</sup> “Acceptance rates at the Lancet and the New England Journal of Medicine seem to reflect the difference in their editors’ views. The Lancet accepted about 8 percent of the submissions it received from developing countries last year, whereas the New England Journal accepted only 2 percent.” (DEKOKER, 1995, p.97)

## 1.2 MEMÓRIAS DO INSTITUTO OSWALDO CRUZ: A PERIPHERAL ANOMALY?

However, as the image above (Figure 1.3) indicates, “La science n'a pas de patrie”<sup>11</sup>, since neither does disease respect such boundaries. Despite the fact that “historians of science [i.e. those from the ‘developed’ world], have shown little interest in the development of science outside the major scientific countries” (Stepan 1976:13), one fascinating example can be found in a Tropical Medicine journal called *Memórias do Instituto Oswaldo Cruz*. Founded in 1909, this is the longest-running scientific journal in Brazil and has currently featured the highest impact factor of any academic journal in Latin America and, as expected, it is an English-only affair. Thanks to a commitment to open-access publishing and to its own history, the journal’s full corpus of articles is accessible online for download (COURA, 2006, p. 816). This century of data could speak volumes about the development of science in Brazil (i.e. from what has been assumed to be the periphery), including a new diachronic reassessment of the language of science that reframes the question of *lingua franca*.

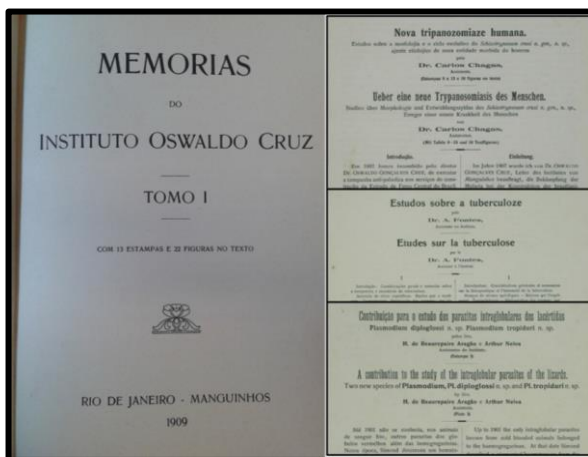


**Figure 1.4:** *Memórias do Instituto Oswaldo Cruz*’English-only homepagein, 2013

<sup>11</sup> A toast by Louis Pasteur at a the 1876 sericulture congress in Milan: «...et je me sens pénétré de deux impressions profondes : la première, c’est que la science n’a pas de patrie ; la seconde, qui paraît exclusive de la première, mais qui n’en est pourtant qu’une conséquence directe, c’est que la science est la plus haute personnification de la patrie. La science n’a pas de patrie, parce que le savoir est le patrimoine de l’humanité, le flambeau qui éclaire le monde.» (PASTEUR, 1939).

What became immediately apparent upon examining the corpus was the presence of a complex interrelationship of *linguae francae* in what can be considered an avant-garde layout and language policy: the journal began publication in a bilingual two-column format in which each article appeared in the local Portuguese and another international (colonial) language, either German, French or English. What is ironic, or poignant, about *Memórias*' original policy is that this is exactly what was recently suggested by authorities as a way out of the current dilemma that hegemonic English poses to the scientific community:

The language barrier is not an exclusive problem to SciELO journals; many journals would benefit if articles from non-English-speaking authors were published in their original language and in English. [...] Online publishing of bilingual articles is neither difficult nor costly for journals in the era of the worldwide web [...] *Of course, only visionaries or ambitious or well-funded researchers would be inclined to do so initially.* Conversely, both international and national journals should consider offering two versions of every article: one in the author's native language and one in English (MENEHINI and PACKER, 2007, p.116, emphasis added).



**Figure 1.5:** Initial multilingual format of *Memórias do Instituto Oswaldo Cruz* (vol.1 1909)

### 1.3 HISTORICAL BACKDROP: COLONIAL MEDICINE, THE INSTITUTO OSWALDO CRUZ AND *MEMÓRIAS*

Although Patrick Manson preferred the term “Tropical” Medicine in his original appeal for the formation of the discipline at London in 1897 (a term reinforced by his publication in 1898 of the first authoritative textbook in the area, *Tropical Diseases*), other concurrent denominations employed in the literature of new centers being established in Europe (see Figure 1.8 below) included (translations of) “Naval”, “Overseas”, “Hot Countries” “Exotic” and, tellingly, “Colonial” (see section 3.6.2). The objectives of Colonial Medicine, although with ostensibly contrasting motivations, are clearly attested, nonetheless, by the London School’s seal, which speaks in the best tradition of Roman imperial antiquity (Figure 1.6, below). In this image, the Rod of Asclepius appears as the foundation upon which the huge chariot of empire rolls, the central fruit/product of the tree (historically: rubber, cotton, tea, coffee, palm oil, etc.) closely guarded with the deadly weapon drawn and ready<sup>12</sup>. Thus, the riders proclaim godlike power to take and give life (i.e. war and medicine) in this untamed land. This design remains historically unaltered, compared to more neutral design possibilities, such as that used by Institute of Tropical Medicine-Antwerp.

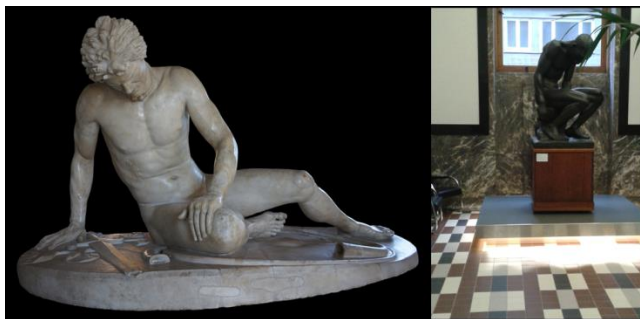


**Figure 1.6:** Current seals of the London School of Hygiene and Tropical Medicine and the Institute of Tropical Medicine, Antwerp

However, statuary in the lobby of Antwerp’s Institute of Tropical Medicine (Figure 1.7, below right), commissioned ostensibly to stress the solemn urgency of its humanitarian aims, is no less dubious,

<sup>12</sup> The fact that a ranged weapon (i.e. for killing from a distance) was selected is not without significance.

subtextually painting the Belgian empire<sup>13</sup> as savior to the emaciated, helpless Central African who has already been vanquished by a lack of technical/medical understanding or, worse, the corporate will to improve his situation – Rodin’s *Le Penseur* benighted and bereft of thought.<sup>14</sup> Such a figure, as the posture would seem to suggest, is begging for outside administration, neck extended for the yoke of a superior foreign culture. Comparison to the Greek work on the left, however, which was commissioned as a celebration of military conquest in Asia Minor, was simultaneously a salute to the dignity and valor of their fallen barbarian enemies, who fought subjugation to the last breath. Even the tone of the nudity in the two sculptures rings differently, heroic compared to pathetic. Such an interpretation is borne out in the title of a 1931 work by Pierre Ryckmans, the governor of Congo, Rwanda and Burundi from 1934-1946, *Dominer pour servir*.<sup>15</sup>



**Figure 1.7:** A comparison of *Dying Gaul* attributed to Epigonos<sup>16</sup> (left) and a sculpture at the main entrance of the Institute of Tropical Medicine- Antwerp (right)

<sup>13</sup> The empire to which this, the former Prince Leopold Institute of Tropical Medicine (Brussels), is inevitably linked. The Belgian Congo existed officially from 1908-1960; the Institute was formed in 1906 (in Brussels; it was moved to Antwerp in 1931: the building in which this statue sits was opened in 1933).

<sup>14</sup> i.e. shoulders slumped instead of having the forearm supporting the chin to facilitate concentration.

<sup>15</sup> *Dominer pour servir* est le titre d’un recueil de textes de Pierre Ryckmans, qui fut résidant en Urundi de 1919 à 1928 et gouverneur-général du Congo belge et du Ruanda Urundi entre 1934 et 1946. Le recueil a été publié pour la première fois en 1931 et au fil des rééditions jusqu’en 1948, la table des matières s’est légèrement modifiée. Demeurent constants le titre et le socle, à savoir une préface de deux pages qui dit vigoureusement les raisons de l’engagement colonial de l’auteur : volonté de «civiliser» l’Afrique, de comprendre les coutumes et les langues de ses habitants, et – sans présomption – de rendre ceux-ci «plus hommes» (LEWIN, 2007, p. 97).

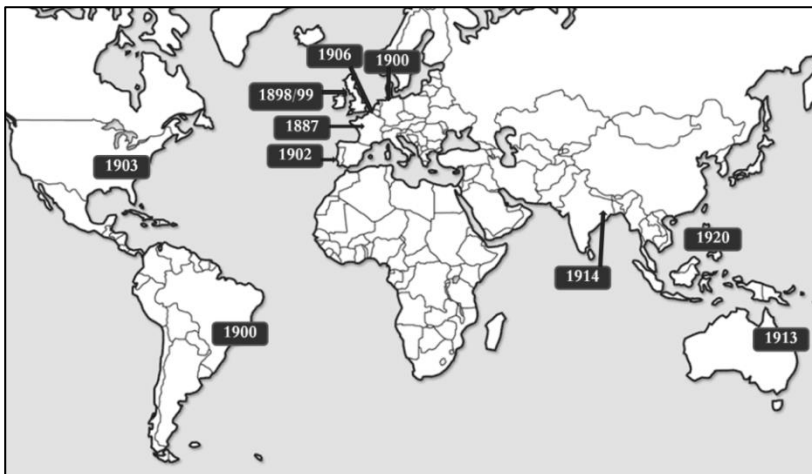
<sup>16</sup> (Roman copy approx. 220BC)

This new application of scientific medicine came during the *belle époque*, on the heels of the Pasteurian age, which firmly established the field of microbiology and the germ theory of disease, industrializing Jennerian vaccination for anthrax, rabies and the plague. The Institut Pasteur was opened in Paris in 1888, with its journal *Annales de l'Institut Pasteur* established a year previously.

Two years after Pasteur's death in 1895, a young Oswaldo Cruz, son of Bento Gonçalves Cruz, who had briefly been Brazilian national Director of Public Health, journeyed to Paris to absorb all he could of these new trends in medicine, where he earned an invitation from director Émile Roux to stay on as full time staff. However, Cruz had other plans. Upon his return to Brazil in 1899, Cruz, now recognized as a bacteriologist, was quickly enlisted to help assess and control an outbreak of the plague in Santos. The urgency of concurrent epidemics of yellow fever, smallpox, and the plague in Rio (i.e. the *Distrito Federal*), of such a level that international shipping traffic was being interrupted due to casualties, and recognition of his work in Santos, led to his appointment as technical director of a serotherapy production facility being established in the outskirts of Rio, due the exorbitant price of importing vaccines (ARAGÃO, 1950, p.1ff).

Not long after, Cruz replaced Baron Pedro Affonso as director, and the *Instituto Municipal* (later *Federal*) *Soroaterápico* quickly evolved from a vaccine production center into a research facility (the *Instituto de Patologia Experimental* in 1907) and then an educational institution (opening the *Curso de Aplicação*, a postgraduate medical training program). This didactic aspect is important, since it was Cruz' goal to send personnel abroad, as he himself had interned in Paris, as well as to host foreign scientists at the Institute, a practice that began after the Institute's victory at the 1907 Berlin International Hygiene and Demography Exposition (RODRIGUES; MARINHO, 2009, p.527; Hanes 2014:99), which means that multilingualism was never a concept far from his operation.



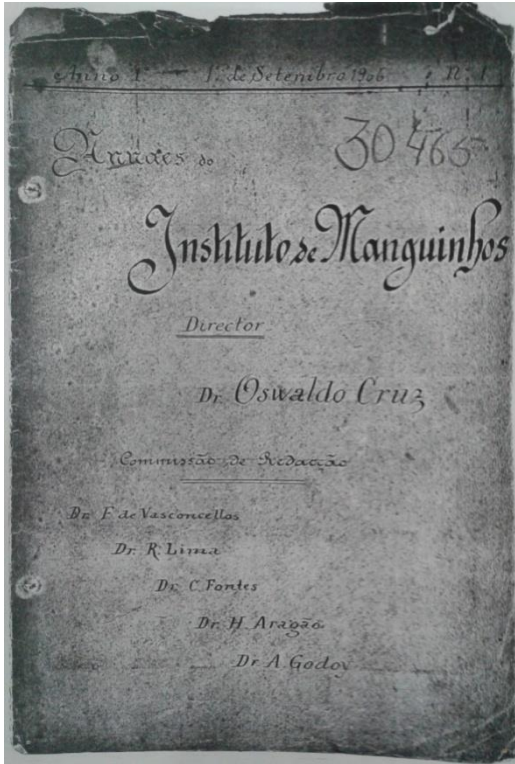


**Figure 1.8:** The birth of Tropical Medicine: dedicated centers worldwide according to date of establishment

Another important aspect of Cruz' goals was the establishment of a world class institutional journal. In the 1907 congressional decree establishing the *Instituto de Patologia Experimental de Manguinhos* (what would be renamed the next year as the Instituto Oswaldo Cruz)(IOC), a provision is made that:

the studies proceeding from the Instituto de Manguinhos will be published, entitled Memórias [i.e. Memoirs], at such time as the experiments have been confirmed. The Memórias will be distributed to extant professional schools of medicine, veterinary and agriculture in the country, and will also serve as object of exchange for foreign journals of the same genre. (DECREE 1,812 of 1907, in LEMOS, 1993, p.162, my translation<sup>17</sup>)

<sup>17</sup> os estudos procedidos no Instituto de Manguinhos serão publicados, a título de Memórias, ao passo que se forem confirmando as experiências. As Memórias serão distribuídas pelas escolas profissionais, de medicina, de veterinária e de agricultura, existentes no país, constituindo objeto de permuta com as publicações estrangeiras do mesmo gênero



**Figure 1.9:** Short-lived prototype of *Memórias do Instituto Oswaldo*

*Cruz* called *Annaes do Instituto de Manguinhos*<sup>18</sup> (1906)

As the figure above shows, however, *Memórias* was not the IOC's first publication, but rather the result of a trial-and-error process. Nevertheless,

Oswaldo, about the end of 1908, decided to edit the “*Memórias*”, whose purpose was to publicize our scientific works [...] Since there was no one, at that time, who was capable of managing the task, he encumbered himself with all the work, from the choice of printing machines, selection of types [i.e. for typesetting], ordering the papers, coming to agreements with lithographers and

<sup>18</sup> Manguinhos is the name of the farm at which the IOC was built and has been used frequently as a nickname for the Institute.

specialists in stereotype, the selection of translators for the articles and, finally, even revising the proofs, without demonstrating, as was his custom, the least vexation for all this routine labor he took upon himself.

Thanks to his dedicated efforts, in April 1909 the first issue of *Memórias do Instituto Oswaldo Cruz* appeared, very well printed, with each article consisting of one text in Portuguese and another in French, English or German, at the author's discretion, to make the subject accessible to foreign readers unfamiliar with our language [...] For a long time Oswaldo performed all the duties related to publishing *Memórias*, applying himself so that it would come out perfect, and only when he had to travel did the task fall to [Adolpho] Lutz, who executed it with much zeal and goodwill. (ARAGAO, 1950, p. 37)<sup>19</sup>

#### 1.4 DEFINING THE THEORETICAL REFERENCES

There is a wealth of resources which inform and interact more or less obliquely with this study, and although they overlap to a certain degree, they have been separated for the sake of discussion into several categories described below. Nevertheless, although the interdisciplinary frame of reference invites dialog with a broad range of theory, it should be pointed out that there is very little in the literature, whether scientific, sociological or of translation studies itself that lent itself to direct modeling.

- a) Initial sources of data, providing a general overview of the science literature system, were statistical reports on publishing volume by

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<sup>19</sup> Oswaldo, em fins de 1908, resolveu editar as “*Memórias*” destinadas a divulgação dos trabalhos científicos [...] Como não houvesse, na época, no Instituto, quem pudesse cuidar do assunto, ele tomou a si todo o trabalho, desde a escolha das máquinas impressoras, seleção dos tipos, encomenda do papel, entendimentos com litógrafos e especialistas na feita de clichês, a seleção dos tradutores para os artigos e, finalmente, ainda a revisão das provas, sem demonstrar, como de costume, o menor enfado por todo o labor rotineiro que tomara a si.

“Graças ao seu dedicado esforço, em abril de 1909 apareceu o primeiro fascículo das *Memórias do Instituto Oswaldo Cruz*, muito bem impresso, tendo cada artigo um texto em português e outro em francês, inglês ou alemão, à vontade do autor, para tornar o assunto acessível aos leitores estrangeiros desconhecedores do nosso idioma. [...] Durante muito tempo encarregou-se Oswaldo dos trabalhos relativos à publicação das *Memórias*, esmerando-se para que saíssem perfeitas, e unicamente quando tinha de ausentar-se passava a tarefa a Lutz, que a executava com muito zelo e boa vontade.

country, such as Royal Society 2011, and journal ranking schemes based on bibliometric calculations, such as the Scimago Journal Rankings.

- b) Studies on English as the lingua franca of science that have investigated its practical effects were also fundamental, especially the aforementioned Wayt Gibbs article “Lost Science in the third world” (1995). Outstanding in this category is the work of Rogerio Meneghini and Abel Packer, founders of SciELO (also cited above), who have taken up, in the most practical way, the issue of visibility for ‘peripheral science’, much of it focused on the foundations for and progress of SciELO (of which *Memórias* has been a member journal since the database’s founding in 1997).
- c) The sociology of science served as an important conceptual source for the idea of science as a social construct: a pioneering work in this area is Bruno Latour & Steve Woolgar’s *Laboratory life* (1979); Latour’s *The Pasteurization of France* (1988), perhaps more directly linked to this study, examined Pasteur as a social movement, being followed by *Pasteur: une Science, un Style, un Siècle* (1994). Studies in a similar vein have been produced in a partnership between the Institut Pasteur and the Instituto Oswaldo Cruz, such as Lima & Marchand 2005. On a somewhat related behavioral note, certain papers in organization studies, especially those of Rebecca Piekkari and her colleagues (e.g. 2012) have analyzed translation behavior in corporate settings.
- d) Similarly, linguistic/discourse studies on scientific writing have been of assistance in understanding the discursive formation of the field and the development of translation within it, e.g. Valle 1999, Halliday 2004, Peci & Vieira 2009 and Franco Aixelá 2013.
- e) The history of science, especially that pertaining to translation and languages to networks has been useful (Montgomery e.g. 1996, 2013), particularly Deborah Neill’s *Networks in Tropical Medicine* (2012). Of indispensable importance, however, has been the Casa de Oswaldo Cruz, a postgraduate department in the history of science at FIOCRUZ, whose collections of images and documents, collected works and extensive production on a number of aspects of the history of the Institute, not to mention its journal (*História, Ciências, Saúde – Manguinhos*), are perhaps too much for a single researcher to thoroughly digest. However, among its works, several stood out: Benchimol & Teixeira’s *Cobras, Lagartos & Outros Bichos* (1993), Benchimol & Sá’s multivolume *Adolpho Lutz – Obra Completa* (2006), doctoral theses such as those of Simone Kropf (on Chagas

disease) and André Felipe Cândido da Silva (on Rocha Lima in Germany), its digital collection of Adolpho Lutz' correspondence and its extensive image files (which have been used liberally herein). Other primary Brazilian historical sources, such as Carlos Chagas Jr.'s *Meu Pai*, as well as a critical lengthy interview he granted to the Fundação Getúlio Vargas in 1976-77.

- f) There have been few longitudinal case studies of a specific journal's language trajectory. The most complete that could be found was Navarro 1997 on the *Swiss Medical Weekly*, which used its citation patterns from 1920 to 1995 as an indicator of a general move among its authors toward English as the lingua franca. There was also a brief section in Montgomery 2013 following *Geologische Rundschau* from 1952-2000, which changed its title to *International Journal of Earth Sciences* in, tellingly, 1997 (Montgomery 2013:93-95). Legout 2008 provides a very brief account of the *Annales de l'Institut Pasteur*'s history from 1887-2007, including its decisive turn toward English in the 1970s and 80s. The journal, incredibly, had "never before been the subject of a historical investigation" (Legout 2008). Thus it must be considered that the extreme weakness of systematic diachronic study regarding the ELF phenomenon (especially in the scientific literature), a phenomenon that seems mystifying even to translation theorists on the level of Anthony Pym (2008), contributes to a general misunderstanding of its roots (Cronin 2003).
- g) A theoretical setting for issues of language and power was found in Pierre Bourdieu (1986, 1991 and 1993) Eric Hobsbawm (2008) and de Swaan (2002); through Benedict Anderson (1983/2006) this discussion spills over into technology as a paradigm-shifting factor in social structure, a topic well-explored by Marshall McLuhan (1962/2000 and McLuhan, Powers 1989) and Walter Ong (1982/2002). These sources will be explored in more detail in Chapter Four.
- h) Within the field of Translation studies discussion of the scientific literature is still quite limited (e.g. Montgomery's segment "Scientific Translation" in Gambier & Van Doorslaer's *Handbook of translation studies*). Nevertheless, there is a body of work on multilingualism and language policy by authors such as José Lambert (e.g. 2010, 2014) and Reine Meylaerts (e.g. 2011, 2013), not to mention the Springer journal *Language Policy*, which began in 2002). However, the general methodological approach of this study has been well-established in the translation studies literature, particularly with the work of Itamar Even-Zohar, who formulated

adapted the theoretical principles of polysystems theory for use in literatures, whose “purpose is to make explicit the conception of a system as dynamic and heterogeneous [...emphasizing] the multiplicity of intersections and hence the greater complexity of structuredness involved (Even-Zohar 1990:2), as well as in Gideon Toury’s seminal book, *Descriptive Translation Studies and Beyond* (1995), which focuses on the nature and role of norms in translation.

## 1.5 RESEARCH QUESTIONS

As a century-long case study focused on, behind and around a major so-called peripheral scientific journal, a platform is provided for a gamut of qualitative and quantitative relationships to be investigated.<sup>20</sup>

The first and most immediate types of questions have to do with the contrast seen between figures 1.4 and 1.5 above, i.e. determining exactly what happened between (A) the multilingual, two-column format of 1909 and (B) the English-only present context. The initial task would be to collect the data, article by article, year by year, to discover how long the two-column format, or translated articles, for that matter, lasted in the journal. The trajectories of the several languages must be traced to determine when they died out. The dates at which they died out may also begin to indicate whether their deaths were *de jure*, decreed by policy, or *de facto*, as a matter of habit.

Since, besides articles, the journal naturally contains paratext such as mission statements, editorial material and instructions to authors within its corpus, this can be examined to discover institutional publication and language policy in order to provide an initial level of interpretation of the language data. Thus, at this point questions such as “What exactly were the journal’s declared historical language policies and what changes have they undergone?” and “Which IOC authors produced the foreign-language articles?”, with its corollary “Were there authors from outside the IOC?”, can be asked.

Examining, on a linguistic level, a sample of the translated articles will yield information about their translation quality and, thus, their adequacy for foreign audiences. The question of agency, “Did these authors self-translate?”, can be addressed through paratext and

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<sup>20</sup> The only ground barred here is the classic experimental study, although experimentation with the language policy variable, observing its effects, and managing those effects has been an ongoing (executive) project of *Memórias* editors since the beginning of the journal, especially since the advent of indexes and ranking.

supplemental historical clues and may begin to clarify the purpose of the translations.

Along with the initial language data, information about the topics of the foreign-language articles can also be gathered. Thus the question “Were there systematic differences in content between the articles published in each language?” can be asked, which has to do with discursive identity, i.e. self-presentation to specific regional scientific cultures. Through this combination of language and topic, it will be easier to understand to whom these articles were directed, i.e. further clarifying the network model.

A second, expanded circle of data that gathers information about the Institute’s reading, external publishing, correspondence and collaboration can help corroborate the language trajectories observed in *Memórias*. “Were the staff’s external publications (production) and reading (consumption) proportionally and directionally parallel to the foreign language seen in the journal?” If found parallel, this would further confirm the existence of a network and, more importantly, that changes in language of publication could be identified as changes in network structure.

A further means of tracking the intangible structure of the Institute’s network over time is through institutional self-description found in key obituaries and historical editorials that appeared in the journal. The people, places, institutions, literature and events mentioned in such documents, although naturally variable according to subject, may nevertheless help form network models that provide a degree of diachronic comparability.

These could be considered the main lines of questioning immediately related to the journal, which although contributing in part to the “why” question regarding language policy, they more directly address the immediate facts of the case, i.e. “what happened” and “when”.

However a second, broader question should be asked by turning the scope away from the journal to the surrounding milieu of scientific literature. The question that can be answered in doing so is: “Were the language trajectories observed in *Memórias* unique?” (i.e. especially in consideration to the rise of English as lingua franca). This question can be addressed with national and international cohort studies. A reasonably concrete resolution to this question would allow comparison with the empirically unconfirmed notion, for example, that English became the lingua franca on the coattails of American dominance consolidated at the conclusion of the Second World War (espoused in

MONTGOMERY, 2013 and discussed in NAVARRO, 1997). If similar patterns were observed in other national or international journals, then the degree of uniformity would proportionally confirm that greater national or international sociopolitical and/or socioeconomic forces were at play, overruling or controlling local considerations and trends. A simple corollary to the above-mentioned cohort studies would be to superimpose external events of great political moment, such as wars and national regime change on the previously-determined language trajectories.

A final investigative step in this broader contextual perspective could be to analyze the interaction of individual IOC staff in international collaborative efforts, particularly those before the First or Second World War, such as the creation of internationally-aimed textbooks or the establishment of international scientific societies. In doing so, the manifestation of colonial priorities in the chain of events or in the self-censoring behavior of the Brazilians could serve as further confirmation of the dynamics of the conditions present in the international milieu regarding language issues.

All of these descriptive results, however, must be submitted to interpretation in light of established theory in order to obtain any explanatory power, i.e. “Why did it happen this way and what does this indicate?” The largest question here, which perhaps extends beyond the reach of these data, is the question of identity: “What is the scientific community (and the IOC as a specific example of it)?” The answer to this question also holds the key to explaining its behavior. The incremental broadening of the results from *Memórias* language data and their subsequent filtering through language theories of social capital and technological determinism will help arrive at minimally satisfactory responses to these increasingly difficult questions. And thus the various forms of textual data presented will have been used as so many nodes upon which national, international and institutional forces have played out.

## 1.6 GENERAL METHODOLOGY

Pioneering descriptive studies such as Gideon Toury’s doctoral dissertation on translations of German fiction into Hebrew in Israel between 1930 and 1945 and Katarina van Braght’s 1995 study of translations registered in the *Bibliothèque nationale de France* between 1810 and 1840 have demonstrated the power of broad, longitudinal data sets to reveal shifts in a nation’s literary priorities through translation.



Although national importation was the focus in these studies, which would seem fairly straightforward (albeit laborious) to track, the active exportation of translated literature, where such has existed, could, additionally, identify priorities for target readership, revealing the character and longevity of real, imagined or proposed connections with foreign partners. Thus, Ong and Hobsbawm's reasoning (1982 and 1996, respectively) that communities are dependent on their language, and, ergo, that any changes in language represent changes to the community, could be seen to function bidirectionally.

The online corpus of *Memórias do Instituto Oswaldo Cruz* provides a diachronic sample similar to the above-mentioned studies (1909-present), although with a more restricted literary genre (scientific prose) and scaled down to the polycentric communication<sup>21</sup> of a single organization that consisted, for much of its history, of a fairly small group of individuals (e.g. ARAGÃO. 1950, p.20-21; 26-27). Thus, the objective of the above-mentioned studies, determining the norms at play in (or controlling) changes observed in the data, would be a given here, at least ostensibly, since the policies driving the editorial practice were set by identifiable individuals at specific points in time and left, to a certain degree, in writing. This arrangement would set the query beyond the identification of norms to the motives for their adoption. The narrower, concentrated focus on the production of a single organization that has depended on both the consumption of foreign literature and the exportation of its own translated literature would also allow a measure of bidirectional detail that could form a more dimensional picture of the various networks that the editorial policies were designed to engage.

### 1.6.1 Defining the main corpus and its relation to the questions

Thus, the principal object of study was a bibliometric analysis of the full online corpus of *Memórias do Instituto Oswaldo Cruz*, available open-access<sup>22</sup> in pdf format beginning with the first issue in 1909<sup>23</sup>, both

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<sup>21</sup> See Blommaert's discussion (2006, p.514) of Hanks' 1996 study.

<sup>22</sup> All SciELO journals are fully open-access. To carry out such a study in a for-profit journal, such as The New England Journal of Medicine (NEJM) or The Lancet would be impossible at universities without subscriptions/collections due to the absurd cost, since each individual article, and even each table of contents is charged. Just to provide a notion of such a cost, the index alone to The Lancet 1909(1) is priced at US\$31.50 on their site; for –albeit incomplete– diachronic parity with the Memórias corpus, at around 6000 articles, the price would be no less than US\$189,000.00. Similarly, with an individual one-year subscription to NEJM, only 50 free document views in the archives (1812-1989) are allowed. Nevertheless, such an undertaking would be uninteresting linguistically since these journals have always been

through the official journal site and the SciELO database.<sup>24</sup> The endpoint for this main corpus was the final issue of 2012.

Accordingly, every article from 1909 through the end of 2012 was examined for the following data: (1) language/s of publication; (2) author/s and their institutional affiliation; (3) anything unusual, such as the presence of an abstract/summary or indication of inter-institutional partnering, particularly in the journal's translation era<sup>25</sup>. All editorials available online were downloaded and examined for insight into organization, policy, networking and history. The topics of the foreign-language articles produced during the translation era (1909-1956) were considered, revealing differences in the general profile of research targeted for Anglophone, Francophone and Germanophone readers. Although a number of studies, including Navarro 1997, have successfully employed bibliometric analysis to create a diachronic profile of the citation patterns (i.e. consumption/reading habits) of authors publishing in a specific journal, this data was not collected from the articles in the corpus. However, a 1911 IOC volume (described below) provided key data that opened a window into the staff's early reading and publishing habits, which was complemented with analysis of the collected works of several key figures at the Institute.

The data extracted from the main corpus led to the following branches of analysis, each of which will be examined in separate sections in the results: (1) the characteristics and trajectories of each of *Memórias'* five languages of publication; (2) the classification of distinct editorial phases in the journal's development based on specific characteristics of language policy and formatting; (3) a description of the most prominent contributors of foreign-language articles during the journal's 'translation era'; (4) identification of articles authored by researchers outside the Instituto Oswaldo Cruz, including special focus on the sixteen years before and after the journal established an online presence (i.e. 1980-1995 and 1996-2011).

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monolingual, as have virtually all Tropical Medicine journals from the colonial powers, with few exceptions; only a study of citation patterns (i.e. determining the volume and variation of foreign citations over time) or author origins (i.e. determining when a substantial number of foreign authors begin appearing in these journals and how this has varied by region) might shed some light on the their international dimensions.

<sup>23</sup> Earlier articles are photographic scans and more recent ones are copy-pastable texts.

<sup>24</sup> *Memórias* homepage: <http://memorias.ioc.fiocruz.br/>; *Memórias* homepage in SciELO: [http://www.scielo.br/scielo.php?script=sci\\_serial/pid\\_0074-0276/Ing\\_pt/nrm\\_iso](http://www.scielo.br/scielo.php?script=sci_serial/pid_0074-0276/Ing_pt/nrm_iso)

<sup>25</sup> such as Lauro Travassos' series of articles from 1930 written while researching at the Instituts für Schiffs- und Tropenkrankheiten (now the Bernhard Nocht Institute for Tropical Medicine) in Hamburg.

While these branches address questions about language practice and extent of the journal's sphere of influence, as well as the effects of advances in communication technology on the former and the latter, they do not in themselves reveal who set the policies and why, who translated the bilingual articles or how fluctuations in individual and collective language trajectories should be interpreted, i.e. the data show effects, not causes or explanation.

### **1.6.2 Defining the ancillary corpi and their use**

Because many questions – questions of an explanatory nature – are left unanswered by the raw language data obtained from the *Memórias* articles, secondary lines of research were opened and an ancillary corpus was gathered from *Memórias* editorials and paratext, as well as sources within the Instituto Oswaldo Cruz and the Oswaldo Cruz Foundation (FIOCRUZ). This corpus, although described below, will be presented, along with most of its results, in the first part of Chapter Three since it is more explanatory in nature.

The first line of ancillary research included *Memórias* paratext, since the online *Memórias* corpus is not a complete representation of the published issues: only the original articles and certain editorials, such as obituaries, are included. Paratext, such as the instructions to authors, purpose statements and a number of editorials, can only be obtained from printed copies. Thus, a primary supplement to the electronic corpus was an analysis of the original works, which was carried out at the Institute of Tropical Medicine - Antwerp, FIOCRUZ and private acquisitions.

A subset of this paratext were key editorials (obituaries and historical commentaries) in *Memórias*, during its 'translation era' (1909-56) principally those dealing with the foundation of the Institute/the career of Oswaldo Cruz (e.g. CHAGAS, 1917; CHAGAS; DIAS, 1922; ARAGÃO, 1950). To these three was added, for an external point of view, a 1917 eulogy of Oswaldo Cruz by Brazilian statesman Ruy Barbosa. Together, the many people, places, events and institutions cited in these documents provided a surprisingly complex and dense web of information on culture the IOC: its polyphony of national and international identities, priorities and partners, which seemed to change quite drastically over time.

Another critical editorial, not available online, was José Rodrigues Coura's 1980 re-inauguration of *Memórias* after a three-year interruption which, in the most nationalistic terms, set the policy for the

journal's internationalization. This was followed by a number of other important editorials, including a historical retrospective series (beginning in 1988) called "*Memórias das Memórias*". Dr. Coura was twice editor-in-chief of *Memórias* and director of the IOC, and could be considered the figure most responsible for the revival and internationalization of the journal. Although retired, he maintains a research position at the IOC, and granted an extensive interview covering many aspects of his reasoning in these decisions, the circumstances of the Institute at his arrival, the management of the journal over time and perspectives on the scientific publishing system. This supplementary dialog will be referred to throughout the study and a transcript of the full (Portuguese) interview is attached as an appendix.

A second line of research was other source material produced by IOC, in order to set *Memórias* in its context as part of an institutional program of publication. Other publications included books, monographs, standalone article reprints, supplements to *Memórias*, even an earlier, short-lived journal. Among these publications, two were singled out for special analysis: a 64-page German-language promotional booklet entitled *Institut „Oswaldo Cruz“*, produced, presumably, for the 1911 International Hygiene exhibition in Dresden, which details the IOC's mission and facilities, as well as publications by its staff and its journal subscriptions, the latter two of which were analyzed in detail to gain a broader idea of the early organizational sphere and intent: sources for importation/consumption and targets for exportation/production. The other IOC volume singled out for study was a 1929 English-language monograph by Heraclides de Souza-Araujo called *Leprosy: a Survey made in Fourty Countries*, which described his 30-month trek around the globe to visit every known leprosy treatment center, agitating for the creation of a *Société Internationale de Leprologie* and the resuscitation of the Norwegian-based journal *Lepra: Bibliotheca Internationalis*, including his correspondence with involved figures worldwide. This *par excellence* portrait of the incipient global health network in the mid-1920s revealed, by following the trail of correspondence (into the paratext of the later-established *International Journal of Leprosy and Other Mycobacterial Diseases*), the gravitation, or manipulation, of the movement toward London and English and away from Paris and French. This mini case study was compared with similar results found in an early British malaria textbook by Nobel laureate Sir Ronald Ross, to which Oswaldo Cruz contributed a chapter.

To supplement and expand the data on staff publication practices in *Institut „Oswaldo Cruz“*, the collected works of several key IOC

figures were analyzed: Oswaldo Cruz, Gaspar Vianna, Carlos Chagas, Adolpho Lutz and Lauro Travassos.

More recent material produced by the IOC has also been important. The websites of *Memórias*, the Instituto Oswaldo Cruz and FIOCRUZ, contain important promotional paratext, news, and organizational history. A subset of this material came from the Casa de Oswaldo Cruz, created in 1985 as a center for historical research and documentation, which offers a graduate course on the History, Sociology and Philosophy of Science and produces a journal called *História, Ciências, Saúde – Manguinhos* (1994-present). Their collection includes photographic and correspondence archives and a number of articles and theses provided critical historical background.

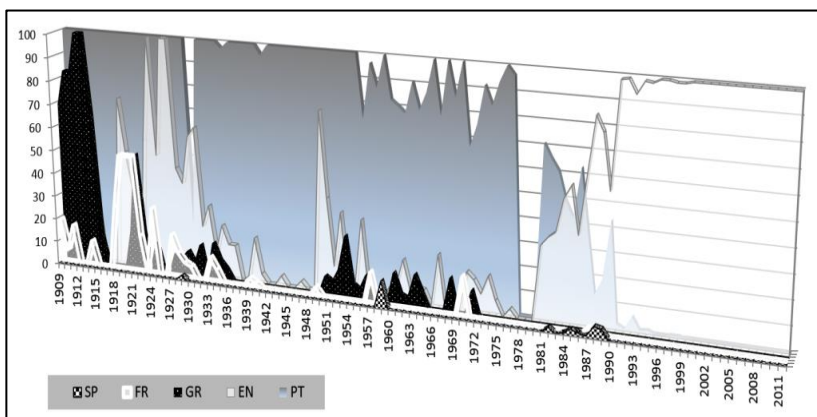
Nevertheless, in order to determine whether the language policy/practice of *Memórias* conformed to broader trends, the milieu of science journals, particularly those about Tropical Medicine, must be described to a certain degree on both national and international levels. *Memórias* was preceded by a number of medical journals in Brazil and has been followed by other scientific and medical journals, including others dedicated to Tropical Medicine. The closest Brazilian cohort journals were *Memórias do Instituto Butantan* (1918-2006) and *Anais da Academia Brasileira das Ciências* (1917/29-present), both of whose corpi have been analyzed in a similar fashion to that of *Memórias do Instituto Oswaldo Cruz*. The general milieu of Brazilian science journals and their language characteristics is also described. For description on the international level, the bound collection of the Institute of Tropical Medicine Antwerp was consulted and individual studies of the Bulletin of the World Health Organization and the *Annales de l'Institut Pasteur* were conducted, as well as a thorough analysis of the Tropical Medicine Institute- Antwerp's periodicals catalog for evidence of language policy among Tropical Medicine journals worldwide.



## 2 MEMÓRIAS: THE MARCH TO FOREIGN MONOLINGUALISM

### 2.1 INITIAL LANGUAGE DATA

The initial and most basic results are the language data from the *Memórias* corpus, which form the trajectories delineated in Figure [1] below. The complete, year-by-year data is provided in spreadsheet form in Appendix A.



**Figure 2.1:** *Memórias do Instituto Oswaldo Cruz*: languages as a percentage of total articles published annually 1909-2012.

*Legend:* SP, FR, GR, EN, PT = Spanish, French, German, English and Portuguese, respectively: Percentages >100 indicate the presence of translated articles.

### 2.2 DEFINITION OF TRANSLATION AND NON-TRANSLATION ERAS

Over the course of *Memórias*' century-plus history there have been two distinct eras describable as "translation" and "non-translation", with "translation" indicating that some or all articles appeared in two languages in the same issue (in either a two-column, side-by-side format or as separate articles in the same issue), i.e. Portuguese and one foreign language (English, French or German). The practice of providing translated articles occurred from 1909-1956.

Beginning (1957), however, all articles appeared in a single language only (thus “non-translation”). Nevertheless, this is not to say that foreign language disappeared after this point, since the journal is published only in a foreign language today, but rather that there was no longer a Portuguese counterpart for foreign-language articles and vice versa<sup>26</sup>. Thus, articles, from this point on, could only be accessed by speakers of the language in which they were originally written. It is important to clarify here that the practice of providing summaries/abstracts in any language only began systematically much later – after 1980. Through 1979, however, Portuguese almost never dipped under 80% of total annual output (cf. Figure [1] above and Figure [2] below); thus the presence of untranslated foreign language articles was never a serious threat to the hegemony of the local language until the journal underwent its modernizing/internationalizing transformation process. In fact, retrospectively speaking, the historical impact of translation practice in *Memórias*, from a numerical point of view, seems almost trivial – a mere 4.9% of the total corpus (see Table [1] below) – although before 1980 and the new authorship policy its mean was more significant, one in five articles. Only when the focus is rolled back to before the height of the Vargas regime in the mid-1930s was translation a real pillar of the journal, especially before the First World War (1909-1914), when it was *de rigueur* under Cruz’ editorship.

**Table 2.1:** *Memórias do Instituto Oswaldo Cruz*: summary of language data 1909-2012

		<b>Totals</b>					
	Articles	Translations	EN	FR	GR	PT	SP
<b>1909</b>							
-	1603	316	213	47	118	1498	4
<b>1976</b>		[19.7%]	[13.9%]	[2.9%]	[7.3%]	[93.4%]	[0.4%]
<b>1909</b>							
-	6406	316	4591	55[0.8%]	118	1899	30
<b>2012</b>		[4.9%]	[71.6%]		[1.8%]	[29.6%]	[0.4%]

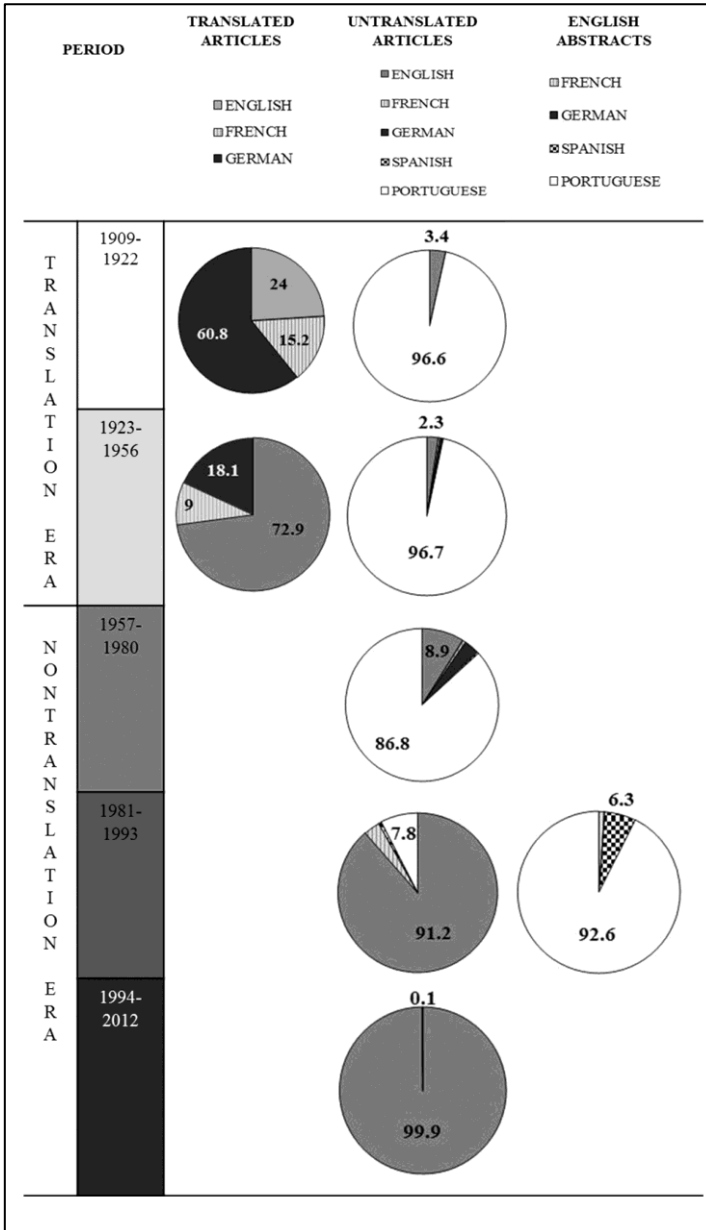
*Legend:* Arts = Articles; Trans = Translations; EN, FR, GR, PT, SP = English, French, German, Portuguese and Spanish, respectively.

<sup>26</sup> Although there was, as described below and presented in Figure [2], a virtual “Portuguese only” period from 1957-1980.



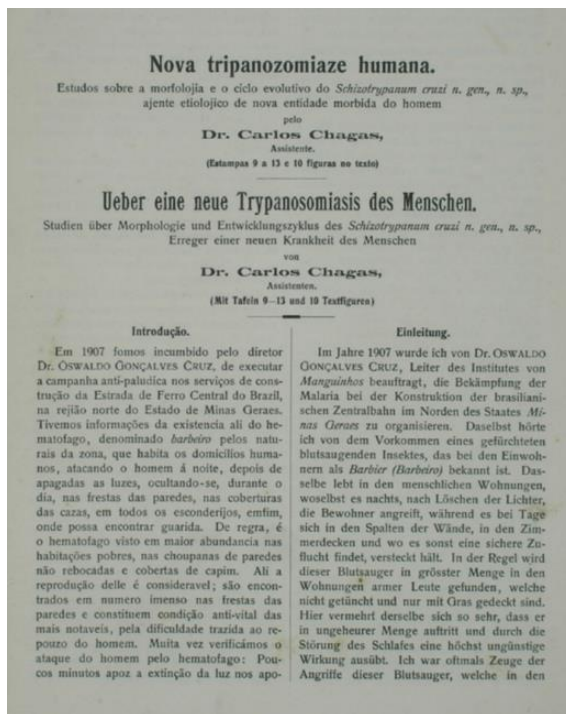
### 2.3 CHARACTERIZING THE FIVE EDITORIAL PERIODS

As can be seen in Figure [2] above, the editorial strategy was separated, for the purposes of this study, into five distinct periods, two in the translation era and three in the non-translation era. However, within these two distinct eras, a number of different sub-periods could have been framed according to different criteria. The beginning of the final (or “English only”) period in 1994, as one example, could have been set, numerically speaking, as early as 1990; however, this would have obscured the important policy-driven language practice (English abstracts), which in this case was given priority over a general trend. The cutoff parameters for each period are described in separate sections below, along with a characterization of the respective linguistic features.



**Figure 2.2:** *Memórias do Instituto Oswaldo Cruz*: relative prominence of published languages by editorial period 1909-2012

### 2.3.1 The two-column format

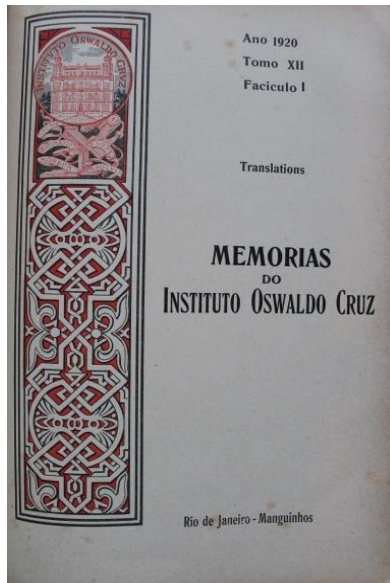


**Figure 2.3:** *Memórias do Instituto Oswaldo Cruz*: example of the initial two-column format featuring parallel versions of the same article (CHAGAS, 1909)

From 1909-1922, in what could be called the *two-column period*, original articles were arranged in a two-column format (Fig.[3], above), which enabled the period's most striking linguistic feature: the vast majority of articles, 157 of 187 (83.9%), appeared in two languages, as side-by-side translations. Inversely, there were a total of 30 untranslated articles (16.1%): 28 Portuguese, one English and one German. Of the translations, 38 were English (24.2%), 23 were French (14.6%) and 96 were German (61.1%). Thus, German was by far the predominant foreign language: 36.5% more frequent than English and French combined. And its position was even more significant before the First World War: from 1909-1914 it averaged 83.5% of all translations, reaching 100% in 1912 and 1913. This result was attributable, at least in part, to the presence of German scientists at the IOC who had been

invited by Cruz to help establish various research departments (KROPF; SÁ, 2009, p.17-20; SCOTT, 1939, p.1025). This group authored or co-authored eight articles in 1909-1910.

However, during the First World War and its aftermath (1915-1921), article output declined sharply. After 1914, translation also bottomed out: one translation in 1915 and none in 1916 and 1917. When translation reemerged in 1918, German was no longer the preferred foreign language, falling behind both French and English: from 1918-1922 there were 28 English articles, 14 French articles and six German articles. It would remain in this position until after the Second World War, when it was briefly competitive with English (due mainly to the work of a single author).



**Figure 2.4:** *Memórias do Instituto Oswaldo Cruz*: Example of interior title page for separated translation section, featured from 1918-1922<sup>27</sup>

After the death of Oswaldo Cruz in 1917 and the end of the war, the volume of translation returned to a high level, averaging 94.6%

<sup>27</sup> Note that the editors entitled this section in English – not French or German, which indicates a position of priority. Would it be anachronistic to interpret this as meaning that the language was already being taken to function as a lingua franca? This certainly represents a change from 1909, when the journal presentation/instructions to authors were presented in Portuguese and French.

1918-1922, but there was a new approach to its presentation: all articles were still published in two columns, but side-by-side translations were phased out and the translations were segregated in a separate section after the articles in Portuguese (see Figure 2.4 above). This section, however, disappeared beginning in 1923 along with the two-column format, and translations began appearing immediately after the original article. Thus 1918-1922 could be seen as a preparatory period for the format that would last until the end of the translation era. From a taxonomical point of view, however, since 1909-1922 was marked by short disparate approaches to translation and formatting (i.e. parity, exclusion, segregation), rather than multiply periods, the most consistent feature, the two-column format, was used to characterize them.

The editorials published in this period were principally eulogies for fallen comrades, including von Prowazek and Gaspar Vianna, both of whom died in the line of duty, and Cruz, about whom two biographies (1917 and 1922) were written.

### **2.3.2 The contiguous translation period**

Thus, as mentioned above, from 1923-1956, during what could be called the *contiguous translation period*, there were two consistent new features: the text layout was changed to a one-column format and the foreign language versions appeared as separate articles immediately following the Portuguese version. This period also saw a consistent decline in the presence of foreign language, dropping from 100% in 1923 to 0% in 1937 and remaining at low levels until well after the Second World War. The average number of foreign language articles in this 33-year period was only 21.3%, a reduction of over 62% from the two-column period.

The overall language figures were as follows: 984 articles in Portuguese, 156 in English, 20 in French, 38 in German and four in Spanish (the first appeared in 1929; the second in 1949 and others in 1955 and 1956). Thus, within this period of greatly reduced foreign language, the predominance of English, which had begun after the First World War, continued: it was 63% more frequent than German and French combined. There was also a rise in untranslated foreign-language articles: 30 compared to two in the former period, with untranslated English articles outnumbering all others combined roughly two to one.

Between 1935 and 1948, coincidentally (or not) with both the death of IOC director Carlos Chagas (successor to Cruz) in 1934 and the build-up to and aftermath of the Second World War, translation again

virtually ground to a halt in *Memórias*, just as it had during the First World War: except, this time for a period of fourteen, not three, years. In seven of those years, no translations at all were produced, while in four others, translations did not reach 5% of total production. This was followed, however, by a resurgence of translation that began (and peaked) in 1949 (80%), and then waned at around 10% from 1953 until 1956, the end of translation as a practice in the journal. What makes this pattern difficult to understand is the fact that it straddled the tenure of Heraclides de Souza-Araujo as editor (1941-1952)<sup>28</sup>: i.e. there were only four translations between 1941-1948, including six years with none, going from 0% in 1947-1948 to 80% in 1949 and then averaging close to 40% during his final three years. Another factor is the ultranationalist dictatorial regime of Getúlio Vargas (1930-1945; democratically elected 1951-1954). Censorship in Vargas' *Estado Novo* was serious; a number of authors were imprisoned, including the poet Cecília Meireles for translating Mark Twain's *The Adventures of Tom Sawyer* (Milton 2002:29). Thus, a chilling effect on the importation of foreign material or the production of material for foreign consumption would not be surprising, all the more since the foreign partners/powers were being drawn into direct conflict.<sup>29</sup> In this, it seems inevitable that the journal's use of any particular language would have political overtones, both at home and in international networks, even in the apparently innocuous field of Tropical Medicine. However, again, why the resurgence took place in 1949 rather than 1946 (i.e. immediately after the end of the War and the dictatorship), remains a mystery, especially since the same polyglot, globetrotting editor remained in charge.

Nevertheless, it should not be taken to mean that this period of war and dictatorship was also necessarily a period of general decline in the IOC, at least from a production standpoint: in the 19-year period 1930-1948, the output of original research articles averaged 35.5 per year, compared to 13.2 in the 14 years from 1909-1922, when translation was at its peak.

The IOC's 50th anniversary also took place during this period, commemorated with a special 50-page editorial on the early history of the IOC by Henrique Aragão, who was among the original generation of student-collaborators and also wrote retrospectives on Chagas (1953) and Lutz (1956). Other curiosities included an article by an Argentinian

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<sup>28</sup> Information derived from the front matter of MIOC volumes 47 (1949) and 50 (1952).

<sup>29</sup> Alternatively, Vargas' ambivalent, realpolitik stance on international affairs could have been the model (see Appendix B:5-6).

scientist (MAZZA, 1949) defending the existence of Chagas disease<sup>30</sup>, which was published in Portuguese and English. Notable early collaborators who died during this period were Adolpho Lutz (1940) and Henrique Aragão (1956), both chief contributors of foreign-language articles and shapers/upholders of the Institute's multilingual culture.

### 2.3.3 The portuguese-only period

On the heels of this last bloom of translation, beginning in 1957 *Memórias* entered both a non-translation (or monolingual) era, as well as what could be called a virtual *Portuguese-only period*, which lasted until the journal suspended publication in 1977. What this means numerically is that foreign language dwindled to 13.3% of production during this 20-year period: of 406 total articles, 358 were in Portuguese, 29 in English, 3 in French, 14 in German (all these German articles were by a single author; the final German article in *Memórias* appeared in 1971) and 2 in Spanish. This foreign-language percentage was basically the inverse of the two-column period (1909-1922) and actually was the continuation of a larger trend away from foreign language since the mid-1930s.

Perhaps symbolic of the intensifying Cold War was a single 1957 missive (Portuguese only, no translator credit) from the 'United Nations Scientific Committee for the Study of Atomic Radiation Effects', which warned scientists of their responsibilities when handling X-rays and other types of ionizing radiation. The Cold War spread to Brazil through another period of dictatorship, this time presided over by the military, beginning in 1964 and ending in 1985 with the current constitution. This time the IOC was directly affected. *Ato Institucional n° 5* (or AI-5), in force from 1968 to 1978, brought all means of communication under rigorous censorship. In this tense McCarthyist atmosphere, what was called the *Massacre de Manguinhos*, the expulsion of ten important scientists from IOC took place in 1970 (LENT, 1978, p.20-21) and also resulted in closed laboratories, courses and lines of research, as well as the dismantling of the Institute's vast Entomological Collection (COSTA, 2008, p. 402). Only 26 foreign language articles appeared between 1964 and 1977, 19 of those in English.

### 2.3.4 The abstract period

After a period of interruption from 1977-1979, which was only

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<sup>30</sup> See Coutinho Freire & Dias 1999:128-29

excused with the most enigmatic of explanations in a brief editorial,<sup>31</sup> *Memórias* was re-launched in 1980 with a new editorial board and a transformed authorship policy: there was extended, for the first time – although in Portuguese – an invitation to extra-institutional contributors, both national and foreign. And this invitation is the most apparent link with the ensuing rapid shift in language practice and policy. During this 14-year period, foreign language, (i.e. for all intents and purposes, English), came to the forefront at 78.8% of the total production: 375 articles in Portuguese, 1320 in English, 8 in French and 27 in Spanish. The number of articles in English met that of Portuguese in 1981, and overtook it for the first time in 1982; it was never again to relinquish this position.

From 1981-1993, as a matter of policy, English abstracts, initially often one sentence long, without the title “Abstract” or “Summary”, appeared in italics in most non-English articles. Due to this characteristic, which implies much about the editors’ perspective on language and the international scientific community, the appeal of *abstract period* as an appropriate classification was strong. Portuguese and Spanish articles with English abstracts (always at the beginning) were found to have a same-language abstract at the end of the article before the bibliography. Keywords were not used in 1981 but were present by 1989. Although it was stated policy (see Table [3], 1980, below), the fact that Portuguese, Spanish and French articles were all published with and without English abstracts indicates that the practice was not strictly enforced. Spanish and French together represented only 2% of the total output during this period. Also of note is that the first editorial in English appeared in 1984.

### 2.3.5 The english-only period

The final articles in French and Spanish were published in 1989, leaving only English and Portuguese as languages of production. With the end of the abstract policy in 1993 and Portuguese output at 0.5%,

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<sup>31</sup> From Coura 1980: “The *Memórias do Instituto Oswaldo Cruz* return to regular circulation beginning with the current year 1980, after a brief interruption for reasons beyond the current administration of the Oswaldo Cruz Foundation” (my translation). Coura stressed that, after all, it was the Regime that created the Fundação Oswaldo Cruz and places the blame for the Massacre on their liaison, Minister of Health and former IOC director (1964-69) Francisco de Paula de Rocha Lagoa, who himself was later removed for insubordination. He credits the journal’s hiatus to a general state of decadence and disorganization in the IOC resulting from severe underfunding (see Appendix B:1-4, 10; corroborated in GARCIA, 2009)



from that point until the final Portuguese article appeared in 1998, an almost literal *English only period* began in 1994<sup>32</sup> (from 1994-2012, there were four Portuguese articles and 3037 English articles). Nevertheless, the online instructions for authors ostensibly allowed submissions in Portuguese as late as March 2012 (Internet Archive 2014), indicating that the journal's movement toward a lingua franca was not completely (or ostensibly) policy-driven<sup>33</sup>.

The journal's Internet presence was first established in 1996 and it joined SciELO (a Brazil-based, online science metapublisher for developing countries), which ostensibly sets no specific language policy for member journals (SciELO, 2010), at its inception in 1997.<sup>34</sup> This association facilitated the journal's indexing in major databases such as PubMed and affected its impact factor. There is an interesting association in this: the total convergence of production and English occurred in 1999, the year after the final Portuguese article was published, which is close to the point at which the journal went online (1996/7). Such an alignment would fit nicely into the theoretical framework of Walter Ong (1982). Predictably(?), a few years later, the entire language editing process, i.e., final control over expression, was being outsourced to an American firm<sup>35</sup>.

Entangled in the technological and lingua franca question is a third aspect: quantitative output. Figure [5] (below) shows the strong association between the volume of production and the percentage of English.

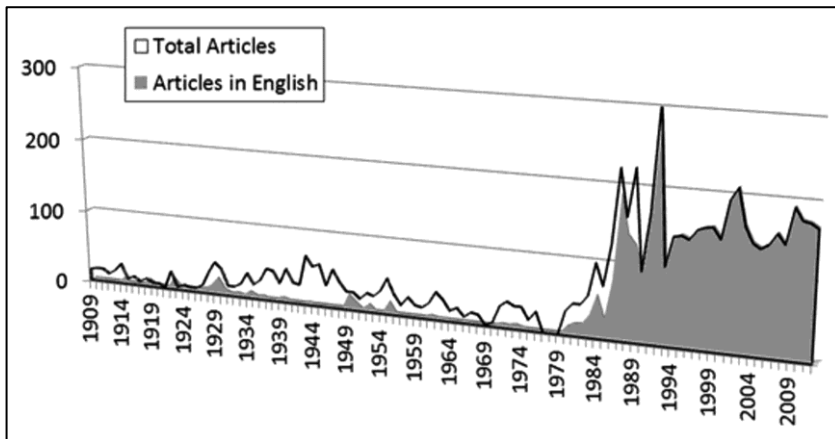
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<sup>32</sup> Barring the English abstract policy, however, the English only period could rightly be demarcated at 1990, when, after being 55.8% the year before, English leapt to and then permanently stayed above 98%.

<sup>33</sup> Or that certain editors were attempting to curtail policy set by a predecessor (see Appendix B:10) or, alternatively, that what was already an extinct practice was retained in the official instructions for the sake of appearances, as in the following ironic example from Anais da Academia Brasileira de Ciências (1992: 62.2): the interior of the front cover states "Manuscripts should be preferably written in English. Papers written in French, Portuguese or Spanish will also be considered for publication"; however, the interior of the back cover declares "In principle, the manuscripts may be written in any language. There are, however, editorial and typographical constraints."

<sup>34</sup> The IOC also became a charter member of the International Association of National Public Health Institutes (IANPHI) in 2006 (at a meeting that took place in Brazil) (IANPHI 2013).

<sup>35</sup> American Journal Experts (see Appendix B:11 AND LOURENÇO-DE-OLIVEIRA, 2013). And with impressive effects: see Hanes 2013.



**Figure 2.5:** *Memórias do Instituto Oswaldo Cruz*: total article output vs. English language output 1909-2012

An initial, conjectural interpretation for this would be that as *Memórias* began calling for outside contribution, this contribution came in the form of English and the in-house authors followed suit, conforming to the need for a uniform language for the mutual communication of so many sources. Inasmuch as the principally foreign location of non-IOC contributors is correct, this would indicate that English had already been established (at some prior point) as lingua franca internationally in Biomedicine.

A further factor to be considered in the concomitant rise in production and lingua franca is the rise in multiple authorship. Until 1980, the number of authors for original articles in *Memórias* was generally limited to one or two, with the vast majority (over 80%) of early (i.e. 1909-1922) articles authored by a single scientist. However, as Table [2] (below) shows, there was a steady increase in both the percentage of articles with two or more authors and in the author-to-article ratio (i.e. the total number of articles divided by the total number of authors).

**Table 2.2:** *Memórias do Instituto Oswaldo Cruz*: Number of authors per article by editorial period

NUMBER OF AUTHORS (AS %)							
Period	Tot.Arts.	1	2	3	4+	tot 2+	Auth/Art ratio
1909-22	185	81.6	15.6	2.7	0	18.3	1.21
1923-56	1010	65.5	28.2	4.9	1.2	34.3	1.42
1956-80	407	50.6	31.6	12.5	4.9	49.4	1.72

Beginning in 1970, articles with two or more authors always outnumbered those with one (this had only occurred previously in 1944, 1955 and 1967). Also of note is that there were two articles (one each in 1956 and 1957) whose authorship was corporate (i.e. an institution and not individuals). However, after the ‘modernization’ policy began in 1980, multi-authored, polycentric articles began appearing, such as the one in Figure [6] (below), which features 15 authors from 12 centers in six countries. Until 1980, only a single article had reached over six authors: the 1938 report of a joint IOC commission on Leishmaniosis, which had eight. However, inter-institutional collaboration became the norm, rather than the exception, after 1980.

**A new consensus for *Trypanosoma cruzi* intraspecific nomenclature:  
second revision meeting recommends TcI to TcVI**

**B Zingales<sup>1/</sup>, SG Andrade<sup>2</sup>, MRS Briones<sup>3</sup>, DA Campbell<sup>4</sup>, E Chiari<sup>5</sup>, O Fernandes<sup>6</sup>, F Guhl<sup>7</sup>,  
E Lages-Silva<sup>8</sup>, AM Macedo<sup>9</sup>, CR Machado<sup>9</sup>, MA Miles<sup>10</sup>, AJ Romanha<sup>11</sup>, NR Sturm<sup>4</sup>, M  
Tibayrenc<sup>12</sup>, AG Schijman<sup>13</sup>**

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**Figure 2.6:** *Memórias do Instituto Oswaldo Cruz*: example of multicentered, collective authorship in the electronic age (ZINGALES et al., 2009)

## 2.4 TEST CASE: THE EFFECTS OF THE INTERNET ON LANGUAGE AND AUTHORSHIP

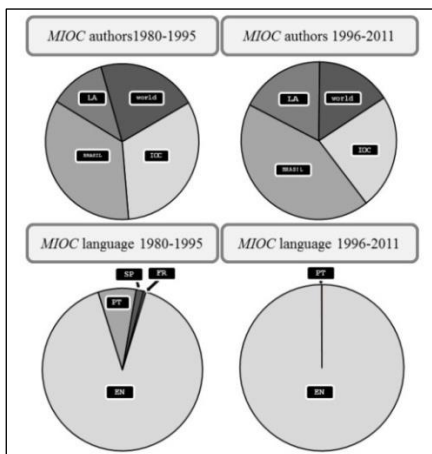
In order to determine more precisely the effects of the internet on *Memórias*, a sub-analysis regarding language and author origin was conducted in the 16 years before and after the journal went online in 1996. The results are presented below in Table [4] (numerically) and Figure [7] (graphically).

**Table 2.3:** *Memórias do Instituto Oswaldo Cruz*: comparison of contributing author institutions and language of publication in the 16 years before and after the journal went online

AUTHOR INSTITUTIONAL ORIGIN					
Period	Auth/Art ratio	IOC	Brazil	LatAm	World
1980-1995	3.11	1949	2130	725	1286
1996-2011	4.86	3577	6480	2662	2361

Language of publication					
Period	Total Articles	PT	EN	FR	SP
1980-1995	2048	137	1614	8	27
1996-2011	2587	2	2585	0	0



**Figure 2.7:** *Memórias do Instituto Oswaldo Cruz*: comparison of contributing author institutions and language of publication in the 16 years prior to and after the journal went online.

*Legend:* LA = Latin America; IOC = Instituto Oswaldo Cruz; EN, PT, SR, and FR are, respectively, English, Portuguese, Spanish and French

This analysis revealed several curious results. First, the gradual increase in authors per article traced in Table 3 continued here at a more exponential rate: the period 1996-2011, in which an average of almost five authors per article was reached, represents a 36% increase over 1980-1996 (which itself was already a 45% increase over 1956-1980). Article production, likewise, increased 21% between the two periods. However, the geographical distribution of contributing authors remained precisely constant in that 67% of the authors came from Brazilian institutions and 33% came from abroad in both periods. Of course, there was variation within these categories: Brazilian institutions gained over the IOC, and Latin America gained over the rest of the world, which indicates a fairly strong regionalizing effect. This effect, nevertheless, was influenced by the production of special issues stemming from international conferences sponsored by the IOC: spikes in production in 1987 and 1992 (see Figure [5]) were the express result of such conferences, creating more articles and more international contribution. And in light of all this, the language results would seem predictable. English totally eclipsed all other languages, with the final PT article appearing a mere two years after the journal went online.

So to summarize the results from these two periods, within a general movement away from multilingualism and toward monolingualism and away from an institutional focus and toward multicentered collaboration, there were a number of correlated effects: increased article production, increased regional contribution, increased authors per article and more international symposia, not to mention an increased impact factor.

Of course, correlation does not necessarily show causation. Although, as will be shown below, modernization (i.e. international integration, improved visibility/impact) had been the set purpose of the new editorial regime since 1980, to what extent the internet amplified these concomitant effects or whether the reform came along at just the right time to get caught up in larger movements sweeping the international scientific community is not exactly clear. However, since certain specific effects may be linked to specific policies, a careful examination of *Memórias*' stated editorial policies is necessary.

## 2.5 DIACHRONIC EDITORIAL POLICY: PARATEXTUAL EVIDENCE

Given that only a limited amount of paratext has been made available in the online collection, the paratext of printed editions of the

*Memórias* provided critical data on editorial policy. A summary of key editorial statements on both outside contribution and language is provided in Tables [4] and [5]. Regarding extra-institutional contributors, the question was not raised in 1909, they were excluded by 1923, discouraged by 1957, encouraged by 1980 and taken for granted by 2013. It is also significant that German was excluded as a language of publication by 1980. The rising importance of English can be traced from worry about the quality of English in the abstracts in 1980 to the use of international outsourcing for language editing services in 2013.

**Table 2.4:** Progression of editorial policy in *Memórias do Instituto Oswaldo Cruz* 1909-1979

continued...		
YEAR	LANGUAGE(S)	STATEMENT
1909 [OC]	PT/FR	NOTICE: The “MEMORIAS” will be published in issues which will not appear at fixed dates and which will form volumes of more or less 200 pages. There will appear at least one volume per year [...] All correspondence related to the “MEMORIAS” should be addressed to the “Director of the Instituto Oswaldo Cruz [...]
1923 [CC]	PT	THE MEMORIAS, official organ of the Instituto Oswaldo Cruz, are reserved exclusively for the publication of original works carried out in it. It will appear in issues, without fixed dates, with a minimum of one volume per year. All correspondence should be directed to “Editors of the Memórias do Instituto Oswaldo Cruz [...]
1949 [HSA]	PT	THE MEMÓRIAS, official organ of the Instituto Oswaldo Cruz edited under the direction of Drs. H.C. de Souza-Araujo and Carlos Burle de Figueiredo, are reserved, exclusively, for the publication of works carried out in it, and will appear in trimestral issues. All correspondence should be addressed to [...]

		conclusion...
1952 [HSA]	PT	The MEMÓRIAS, edited by the directory and by the research staff of the Instituto Oswaldo Cruz, are intended [lit: destined] principally <sup>36</sup> for the publication of works realized in this institution. Besides MEMÓRIAS, the Instituto Oswaldo Cruz also publishes a series of MONOGRAPHS and the bulletin entitled MANGUINHOS. All correspondence should be directed to [...]
1957	PT	The MEMÓRIAS, official organ of the Instituto Oswaldo Cruz, are intended, principally, for publication of original works carried out in it. It will appear in separate issues, or in a complete volume, according to editorial conveniences. All correspondence should be addressed to:
1959	PT	The MEMÓRIAS [...] are intended to divulge original works of research elaborated by members of the scientific staff of the Instituto Oswaldo Cruz, exceptionally including the collaboration of authors outside the institution.

*Legend. Bracketed initials = editor-in-chief: OC (Oswaldo Cruz); CC (Carlos Chagas); HSA (Heraclides de Souza-Araujo). All quotes are my translation<sup>37</sup>.*

As might be expected, there was a great difference between the 1959 statement and that produced in 1980 (Table [5], below). The fairly quick progression toward English as the journal's only sanctioned language can be traced in the statements from 1980 through 1989: Coura (editor 1980-85) made English abstracts obligatory, thus treating the language as a default scientific language, not to mention that the notice appears in English only. Deane (editor 1986-89), however, transformed the subtle concept embedded in the abstract policy into an undisguised, official preference for English manuscripts in 1987. Garcia followed this by officially closing the door on any other language in the journal

<sup>36</sup> The word used here, precipuamente, aside from 'principally', carries a judicial sense relating to hereditary rights <http://www.priberam.pt/DLPO/prec%C3%ADpuo> [Accessed 26.09.2015].

<sup>37</sup> See Appendix I for originals

beginning with the 1989 supplemental issues.

Nevertheless, this apparent closure is not the end of the story since, as seen in the corpus, Portuguese articles continued to appear (although at a trickle) until 1998. In fact, editorial resolution about this policy seemed to waver, even during Garcia's term, since the 1990 statement reverts back to the 1987 form. This reversion, however, was undone by the following year, and beginning in 1994 under Hooman Momen (1993-2001), the language of publication was no longer mentioned, it simply went without saying. This, however, was not the case in the website. The online instructions, curiously, stipulated that "Submitted papers must be written in Portuguese or English" from 2002 until the new/current website format was installed in 2013), which might have accounted for the straggling final Portuguese articles, except that the final Portuguese article appeared in 1998.

**Table 2.5:** Progression of editorial policy in *Memórias do Instituto Oswaldo Cruz* 1980-2013

		continued...
1980 [JRC]	EN	<p><b>NOTICE TO CONTRIBUTORS</b></p> <p>The <i>Memórias do Instituto Oswaldo Cruz</i> welcomes previously unpublished scientific articles mainly in the fields of parasitology [7 more categories] and epidemiology of infectious and parasitic diseases. Papers should be sent to: Memórias do Instituto Oswaldo Cruz [...] Manuscripts (2 copies) in English, Spanish, Portuguese or French must be typewritten [...] The <i>English Summary</i> (200 words maximum) [...] must be written by a person who knows the language perfectly. English of low quality is a major cause of delay in publication and we strongly advise authors with English as a foreign language to have their manuscripts checked by someone with English as first language, preferably a scientist.</p>



continuation...

1987 [LD]	EN/PT	<p>The <i>Memórias do Instituto Oswaldo Cruz</i> publishes original research in the field of human and animal biology related with parasitic organisms in the broadest sense... Preference will be given to reports written in English, not excluding, however, Portuguese, French and Spanish.</p> <p>The <i>Summary</i> (strictly in English), up to 200 words, must...</p> <p>The <i>other language summary</i> must be a translation of the English summary. If the article is written in French or Spanish, two summaries should appear (both including the title and the key words), one in the article language, and another in Portuguese (in charge of the <i>Memórias</i>).</p>
1989 <sup>#</sup> [EG]	EN	<p>The <b>Memórias do Instituto Oswaldo Cruz</b> publishes original research in English in the fields of parasitology (including protozoology...), microbiology (including...), tropical medicine (including...), as well as basic studies in biochemistry...</p> <p>The <i>Summary</i>, up to 200 words, must...</p>
1990[EG]		Identical to 1987
1991[EG]		Identical to 1989
1994 [HM]		<p><b>INSTRUCTIONS TO AUTHORS</b></p> <p>The <b>Memórias do Instituto Oswaldo Cruz</b> is the official journal of the Instituto Oswaldo Cruz and welcomes original contributions from research scientists throughout the world. The journal publishes original research in the fields of...</p> <p>The <b>Summary</b>, up to 200 words, must...</p>
2002-12	EN	<p><b>INSTRUCTIONS TO AUTHORS [MIOC website]</b></p> <p>Submitted papers must be written in Portuguese or English. English of low quality is a major cause of delay in publication and we strongly advise authors with English as a foreign language to have their manuscripts checked by someone with English as a first language, preferably a scientist.</p>

conclusion...

2012 [RLO]	EN	EDITORIAL POLICY [MIOC website] The <i>Memórias do Instituto Oswaldo Cruz</i> is a multidisciplinary journal which publishes original research throughout the fields of tropical medicine [...] The journal publishes eight issues constituting one volume per year. Occasionally papers presented at symposia or congresses are published as supplements [...] Submitted papers must be written in English. English of low quality is a major cause of delay in publication and we strongly advise authors with English as a foreign language to have their manuscripts checked by someone with English as a first language, preferably a scientist.
2013 [RLO]	EN	EDITORIAL POLICY [MIOC website] Submitted papers must be written in English. English of low quality... Papers submitted to <i>Memórias</i> will undergo the Premium Editing of English language review made by American Journal Experts, further suggestions will enhance non-native English writing style.

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*Legend: All emphasis original; # = Supplements 1-4, unlike 1989 regular issues. Bracketed initials = editor-in-chief: JRC (Jose Rodrigues Coura); LD (Leônidas Deane); EG (Eloi Garcia); HM (Hooman Momen), RLO (Ricardo Lourenço de Oliveira)*

Website paratext can also contribute, at least somewhat, to clarifying another possible influence on the positive correlation between article production, regional/world contribution and collaboration: increased speed of publication in the electronic age. The revolution initiated by word processing and e-mail has led to the development of a fully electronic submission process. Combined with the elimination of painstaking formatting/typesetting under the Gutenberg paradigm, the instantaneous nature of electronic communication has greatly accelerated the editorial process, allowing more articles and more annual

issues than were possible before<sup>38</sup>. Going completely online also emancipates a journal from both printing and delivery costs, which eliminates constraints on word count, page numbers and figures of all types<sup>39</sup>. It follows that such a transformation would have effects on *Memórias*.

Although diskettes “containing the text (including tables, graphics and digitalized photographs) in Word or Word Perfect for Windows format”, along with the e-mail and fax number of the corresponding author, were required to accompany printed copies of the text as early as November 2001 in the Instructions to authors section of the *Memórias* site,<sup>40</sup> a fully and exclusively online submission process first appeared only in October, 2007, having been implemented sometime after August 28<sup>th</sup> of the same year.

Counterintuitively, however, Figure [5] (above in section 2.3.5) shows no spectacular gains in production associated with the implementation of this new submission process; in fact, the greatest peak came in 1992, well before the journal went online. The number of articles has remained steady at around 150 since 1994 and around 175 since 2008, which is not entirely explained by the fact that the number of annual issues has increased from six between 1996 and 2000 to eight (or seven with one supplement) ever since. Nevertheless, according to Coura, plans are in the works to make *Memórias* a monthly journal due to the volume of material being submitted (Appendix B: question 4).

### **2.5.1 Metatextual evidence of editorial policy**

Nevertheless, certain intentions are transparent in the metatextual discourse of the editorial staff. For example, a 2003 editorial by Coura & Willcox shows that the goal of the journal’s modernization was international recognition, and that the vehicle for achieving this was English, and so the language was made normative by the directors, the first such linguistic restriction I found in over 100 years of paratext:

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<sup>38</sup>Electronic submissions have already led to a new type of platform in online journals, especially smaller ones: ‘rolling submissions’, which adds new articles immediately to the site after approval, eliminating the concept of issue and challenging even the concept of volume (although some do print an annual year-end edition). See, for example: <http://science.nd.edu/research/undergraduate-research/scientia/>

<sup>39</sup>Not that this was ever a binding priority in *Memórias*, given the lack of consistent periodicity and varying number of issues per year (historical funding limitations aside). For example, a single article of 886 pages was printed in 1969, the only article that year (Travassos et al. 1969).

<sup>40</sup><http://web.archive.org/web/20011124184627/http://memorias.ioc.fiocruz.br/>

From...1980, the *Memórias* launched a progressive process of modernization turning into an international journal [...] Consequently, from 1987 on, the *Memórias* started publishing its articles preferentially in English *for a better disclosure*. Indexed by the Science Citation Index [...] it is considered by Bioline [...] the fourth most cited in the field of Tropical Medicine in the whole World. (COURA; WILLCOX, 2006, p.1)

Another thing is also clear: despite frequent claims in the literature that English rose to prominence as a global language immediately after the Second World War (e.g. SCHILLER, 1991, p.18; MONTGOMERY, 2013, p.11), presumably for political and economic reasons, my results show that this was certainly not the case in this important Latin American journal. In fact, despite substantial US political and economic influence and interference in Brazil throughout the 20th century, and although the language was already sharply rising in the decade before the Internet, English was officially embraced only as a byproduct of this fairly recent revolution in information technology

## 2.6 TRANSLATION AND FOREIGN LANGUAGE IN MEMÓRIAS

If the post-1980 movement toward English as lingua franca was to accompany or catch up with international trends in the scientific literature, then what motivations drove the initial multilingual foreign language policy and the subsequent Portuguese-only turn? If the motives for and/or the functions of publishing foreign language are clarified, this may help answer the opposite question: why it mostly disappeared.

A substantive answer will require a more detailed profile. If policy, as shown above, forbade or discouraged outsiders from publishing in the journal, this signals a more narrow set of possible motives, and also opens questions about those outsiders who were allowed to publish in it, either by invitation or for some other reason. Thus, in the first place, connecting specific IOC names with specific languages at specific times, bearing in mind that it is a limited set of articles, as well as, secondly, identifying any outsiders who published in *Memórias* pre-1980, would move things to a more cellular level. An important complement to this would be an analysis of the content of the foreign-language production, since there may be specific profiles for each language. What the messages contain is as important as who wrote

them, when they were written and to whom they were sent. The next three subsections, therefore, will address these three areas: the insiders who wrote foreign-language articles, the outsiders who wrote articles (whether translated or not) and the specific content of the articles. But before proceeding, a statement by Bertha Lutz, daughter of longtime IOC scientist Adolpho Lutz sheds a rather enigmatic light on the practice of translation in the journal:

In the first period of the Institute, the prestige of Oswaldo Cruz and the prosperity of the institution made it possible to publish in a foreign language as well as in Portuguese and to illustrate Lutz' taxonomic papers with color plates. During and after the first World War the Institute lost its best illustrators and for fairly long periods the policy of a double text could not be maintained (FAIRCHILD, 1961, p.186)

Put in this way, translation was first of all a financial concern, which would seem to indicate the hiring of outsiders rather than the other possibility, i.e. simply the extra ink, paper and typesetting time to print twice the pages. In the second place, it is described as ancillary – added value – to the journal, a nicety like color illustrations that could be cut during financial hardship without abrogating its mission. Although this point will be discussed later, it is mentioned here for juxtaposition with the information contained in the following sections.

### **2.6.1 Foreign-language contributors from the Instituto Oswaldo Cruz**

During the translation era, 1909-1956, there were a total of 372 foreign language articles in *Memórias*: 186 in English (by 81 authors), 135 in German (by 26 authors), 47 in French (26 authors) and four in Spanish, (all by different authors). Table [5], below, demonstrates the concentration of foreign language in relatively few hands. Nine of the 18 authors above published in four different languages and four others published in three; besides these 18, there were also 15 more authors with between four and six foreign-language articles. In terms of percentages, Lutz was responsible for 24.6% of all German and 11.2% of all English articles (i.e. 15.4% of all foreign language articles produced in this period, whether translated or not) and Travassos produced 20.4% of all French articles. The top four authors accounted for 57.2% and 52% of the German and French corpus during this period,

respectively; the top five English-language authors accounted for 35.8% of the total during this period. The top four overall foreign-language authors, Lutz, Aragão, Neiva and Travassos, accounted for 34.2% of the total foreign-language production until 1956. Lutz and Neiva died in 1940 and 1943, respectively, and Aragão died in 1956, the final year of the translation era. Moreover, Paraense published nothing in *Memórias* from 1957-79, despite being FIOCRUZ director 1976-79.

**Table 2.6:** *Memórias do Instituto Oswaldo Cruz*: top producers of foreign-language articles during the translation era (1909-1956)

Author	1 <sup>st</sup>	Total			
	Art	FL Arts	EN	FR	GR
Lutz, A	1909	54	16(3)	2	25(8)
Aragão, HB	1909	29	8(4)	2(1)	11(3)
Cunha, AM	1913	21	1(7)	5	7(1)
Travassos, L	1913	17	2	9	5(1)
Barth, R	1951	15	0	0	15
Neiva, A	1909	16	(1)	0	7(8)
Fontes, A	1909	15	4	5	5(1)
Torres, CM	1915	14	8(4)	(2)	0
Magalhães, OC	1912	12	5(2)	3(1)	1
Paraense, WL	1949	10	6(4)	0	0
Dias, EC	1912	10	3(4)	1	1(1)
Souza-Araujo, HC	1918	10	9(1)	0	0
Villela, E	1922	10	4(5)	(1)	0
Faria, G	1909	9	4	0	5
Pacheco, G	1925	9	4(3)	1	1
Lima, AC	1914	7	1(6)	1	0
Moses, A	1909	8	0	0	8
Chagas, C	1909	7	1(1)	0	4(1)

*Legend. (Number) = as co-author.*

Of course, these figures do not represent the complete careers of some of the authors who began to publish during the translation era. Travassos went on to publish six more articles in *Memórias* until 1969, although they were all in Portuguese. After 1980, Paraense continued publishing in *Memórias* until 2006, producing 40 more foreign-language articles, all in English, which makes him second only to Lutz overall, with 50.<sup>41</sup> Barth, who produced the final German article to appear in *Memórias*, produced 15 monolingual German articles between 1957-71,

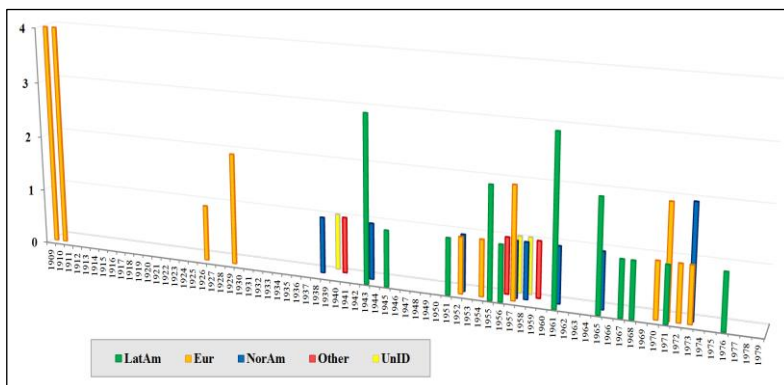
<sup>41</sup> Authors who began publishing after 1956 were not included in this list: i.e. there may be several after 1980 with a substantial number of contributions in English.

totaling 30 in all, which would put him in third place on this list.

## 2.6.2 Extra-institutional authors in Memórias

Although, as seen in section 2.5 (Tables 2.4 and 2.5), contribution by non-IOC authors was prohibited or restricted by policy, it occurred nonetheless. From 1909–1979, 52 articles were found either authored or co-authored by scientists from foreign institutions, as well as another 26 authored or co-authored from other Brazilian institutions<sup>42</sup>. Figure [8] below, is a timeline showing the distribution of foreign authors by region (Full data available in Appendix C).

Outside contributorship seems to have occurred in waves: although the precedent and initial wave came in 1909-10 from the Hamburg group, after this there were no more under Cruz' editorship and a mere three under Chagas and Fontes (through 1937)<sup>43</sup>; this changed during the Second World War (1938-45), with eight outside contributions; a new wave occurred 1950s (1951-61), with 19, and a third wave from the mid-60s until the early 70s, with 12 more.



**Figure 2.8:** *Memórias do Instituto Oswaldo Cruz*: contributing authors from foreign institutions, 1909-1979.

*Legend:* LatAm (Latin America); Eur (Europe); NorAm (North America); UnID (unidentified foreign institution).

<sup>42</sup> The first Brazilian extra-institutional article was observed in 1927, and they came at a steady trickle through 1974, with no large breaks or discernible pattern. Many of these institutions were local to Rio de Janeiro. Works from IOC affiliates, e.g. in Belém and Belo Horizonte, were not counted as extra-institutional.

<sup>43</sup> Those published under Chagas had close institutional links: Michaelsen (1926) was from Hamburg, and Vellard (both 1929) had been working with Vital Brazil at the Instituto Butantan in São Paulo.

The second wave, parallel to the Second World War, was not divorced from the new Brazilian political realities under development: i.e., zero European input, Allied partners (one Israeli and two US articles) and a new Latin American presence beginning in 1943<sup>44</sup>, which would go on to be the most frequent region represented until the reform under Coura (1980).

Whereas this second wave occurred apart from any official policy change, i.e. the “exclusivity” clause remained in place in the journal paratext from 1923 through at least 1949 (Table [3]), the wave beginning in 1951 accompanied a relaxation of this policy at the end of Souza-Araujo’s term as editor: the language was changed to “the MEMÓRIAS are intended *principally*<sup>45</sup> for the publication of works realized in this institution” (emphasis added). Of 19 articles in this wave, 6 were carried out under the auspices of the IOC (either by a co-author, or as an intern). The character of this wave was also different in that there begin to appear articles by authors with no apparent direct institutional relationship with the IOC: although Adler 1940 was the first of such cases, 13 more (the large majority) were found in this wave.

In keeping with the control evident in the Portuguese-dominated language component in foreign co-authored articles, the presence of foreign non-co-authored papers looks to be mostly an ‘invitation only’ arrangement due to the following observations about the types of articles:

- Articles supportive of IOC findings (ADLER, 1940; MAZZA 1949- confirmatory evidence about Chagas disease); also there may be some association between Ciucă 1957, Ciucă e Combiescu 1957 and the fact that Chagas had been named Knight of the Order of Romania in 1929 (VILLELA, 1934, p. XVIII)
- Articles in homage to IOC figures (Smith 1958- naming a bromeliad after Adolpho Lutz);
- Articles by prestigious Brazilian/immigrant scientists e.g. Kuhlmann (1928) Vellard (1929), Borgmeier (1950) and Ducke (1953)
- Articles by foreigners who had previously researched at IOC (DOBBIN, 1957; 1958 [at IOC] compared to 1967 and 1971[at a Pharmaceutical faculty in Recife];
- The exceptions that [would seem to] prove the rule: i.e. articles that

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<sup>44</sup> Cerqueira 1943a,b,&c (on malaria in Bolivia), all in conjunction with the Rockefeller Foundation, which maintains a pavilion inside FIOCRUZ to this day. Of the remaining five articles in this wave, three were co-authored by IOC staff.

<sup>45</sup> The word used here, *precipuanente*, aside from ‘principally’, carries a judicial sense relating to hereditary rights <http://www.priberam.pt/DLPO/prec%C3%ADpuo> [Accessed 26.09.2015].



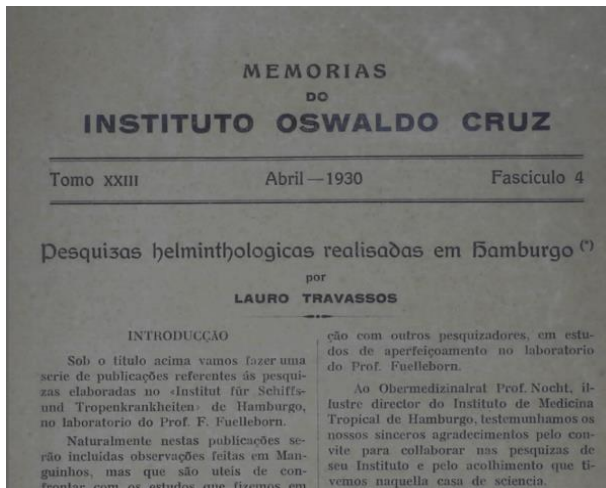
could be seen as ‘impositions’ (the 1957 UN declaration about the hazards of X-rays and atomic radiation and Kirner & Lopes 1961 [US Naval Medical Research & IOC, respectively] – one of the two cases where foreign co-authorship did not produce a Portuguese article)

Regarding the language of these 52 foreign extra-institutional articles, only 11 were bilingual (the last in 1952): i.e. the eight initial German ones (1909-1910) and the first three in English.<sup>46</sup> Thus, there were 41 monolingual articles of foreign authorship, 20 of which were in Portuguese: i.e. of 52 total foreign-authored articles only 21 appeared in a foreign language alone. Of these 21, only two were co-authored by IOC staff; thus, IOC involvement almost always meant a final product in Portuguese. So as the journal began to tentatively open space for outside contributors<sup>47</sup>, they made sure that the balance of discursive power in partnerships fell on the Brazilian side. Nevertheless, this did not mean that the IOC staff restricted themselves to Portuguese in their own writings; for example in 1955 alone, IOC staff produced 9 monolingual English articles and seven English translations, while the two co-authored articles that year (with an Argentinian) appeared in Portuguese only. Moreover, although Portuguese was used to report back the experiences of IOC staff when they researched abroad (e.g. Lauro Travassos’ 1930 series from Hamburg – see Figure [9] below), this tendency did not necessarily hold when IOC co-authored articles from abroad: one of the monolingual English articles from 1955 was co-authored by Emmanuel Dias (IOC) and Mohammed Dawood (Research Institute, Cairo) about a joint Egyptian project initiated after Dias’ report at the 1953 International Congress of Tropical Medicine and Malaria in Istanbul.

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<sup>46</sup>Interestingly, all articles from Francophone countries (e.g. Switzerland, Algeria) were published in French with no translations, and the Romanian authors Ciucă & Combiescu used French as a lingua franca in 1957, which would indicate that the editors expected sufficient French literacy among the readership. That French was accepted by the editors as a lingua franca is also attested by the original paratext, which appeared in French and Portuguese (Table [3]). Nevertheless, there were only three monolingual French articles during the translation era, compared to five in German and 18 in English (10 of which came after 1954).

<sup>47</sup> ‘Tentatively opening space’ in that these 52 articles were among a total of 1603 articles in the 1909-1979 period, or a mere 3.2% of the total.



**Figure 2.9:** *Memórias do Instituto Oswaldo Cruz*: example of reports from IOC staff abroad (the first article in Lauro Travassos’ 1930 series from Hamburg)

### 2.6.3 Content and purpose: foreign language by topic

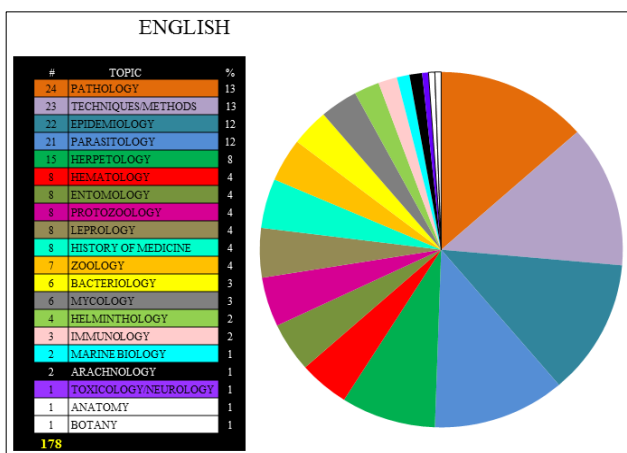
So far, the *Memórias* has been presented as language statistics alone, without actually opening an article, i.e. without reference to content. Although “Tropical Medicine”, as the concept was formulated by Manson (1897), meant a specialty, a subdivision on “exotic” diseases alien to European medicine, when considered from the perspective of the *pays chaudes*, it is nothing more or less than public health, as the IOC’s position as a founding member of the International Association of Public Health Institutes (IANPHI, 2006) clearly shows. However, although this recognition has now reached an international level, it was always the case in Brazil, since both Cruz and Chagas were appointed National Director of Public Health while simultaneously serving as directors of the IOC. Thus the Institute’s focus, in its transformation from a serum factory to a school of experimental medicine, had to broaden considerably, since pathology, etiology, zoology and protozoology, virology, mycology, epidemiology, etc. are all interconnected and necessary for understanding the manifold nature of the disease besieging the country and the conditions that facilitate it. In fact, Ferreira (1989, p. 465) reports that “Oswaldo opened space for any type of science. As long as it was of quality.” (my translation)

This posture has been reflected in *Memórias* since its inception;

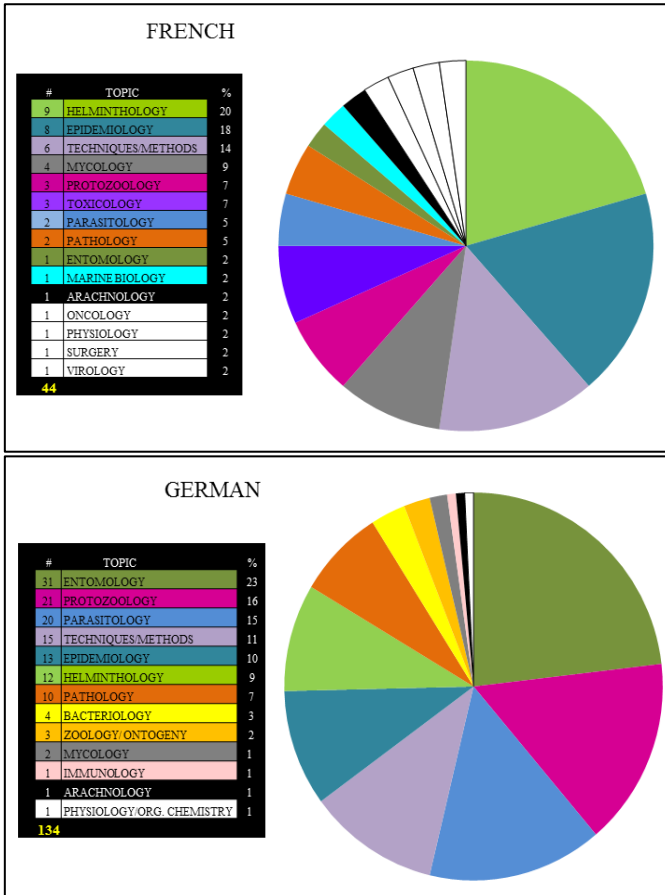
the freedom allowed for staff to pursue their own interests led not only to an interdisciplinary, but a multilingual journal:

Thanks to his dedicated effort, in April of 1909 there appeared the first issue of Memórias do Instituto Oswaldo Cruz, very well printed, having in each article a text in Portuguese and another in French, English or German, *at the author's discretion*, to make the subject accessible to foreign readers who do not know our idiom. (ARAGÃO, 1950, p.37, my translation, emphasis added)

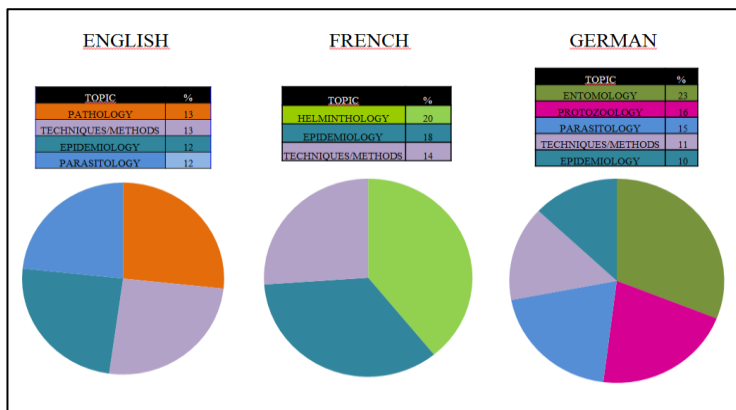
From this statement, it is apparent that the dynamics of language distribution was not according to top-down strategy, but to the authors' personal understanding of his specialty's milieu, inevitably intertwined with his own research (i.e. reading) and network of connections and, thus, language skills. In this light, an attempt was made to categorize all articles that appeared in the translation era (1909-1956) by topic (Figures 8-9, below), in an effort to determine a profile for each foreign language. Full data appear in Appendix D.<sup>48</sup>



<sup>48</sup> Identifying clear distinctions/priorities among the many, often overlapping, subareas of the broad range of subjects published in Memórias (e.g. is this study epidemiological or protozoological?) was often problematic, especially for a layman, but it is hoped that this exercise will help provide a reasonable idea of the content. Articles by foreign authors were included.



**Figure 2.10:** *Memórias do Instituto Oswaldo Cruz*: Foreign language articles by topic (all categories) 1909-1956.



**Figure 2.11:** *Memórias do Instituto Oswaldo Cruz*: Foreign language articles by topic (all categories) 1909-1956

Although the categories “epidemiology” and “techniques/methods” appeared in all three languages and parasitology figured prominently in two, the results show that there were, indeed, fairly distinct profiles for each language, with unique categories heading all three and zoological questions taking precedence in French and (by a wide margin) German. Thus, a divide could be seen between Anglo and European interests or, alternatively, between the New and Old Worlds.

## 2.7 THE INDIVIDUAL TRAJECTORIES OF FOREIGN LANGUAGES IN MEMÓRIAS

This final section provides a review of the individual foreign languages at different scales: on a general level and on a personal, author-based level. The language characteristics of specific authors, particularly top contributors, can help resolve questions of agency as well as purpose. Of course, the language level will indicate whether a native speaker was involved in the translation process, which could mean that native speakers were either unavailable, unaffordable or deemed unnecessary. But beyond this, the publication of impeccable and/or poor unrevised language also has implications about the communicative purpose of the journal: as a cultural statement (the tuxedo), displaying national achievement as peers/coequals or, on the contrary (the crumpled lab coat), as a simple means to an end, one lab technician passing along potentially vital information to comrades in his network. As has been seen above, it was Cruz’ intent for everything to

be top rate – conforming to the highest international standards: from the architecture to the curriculum to typesetting details. Thus, it is important to see how this ideal fared linguistically. Moreover, the frequency of untranslated foreign language could indicate sufficiently high circulation in that language and/or that Brazilian readers were considered capable of reading that language.

A further point to the language analysis involves the source text dilemma. Although the journal's separate "translations" section from 1918-22 (Figure [4], above), labelled all foreign language as translated language, and thus as ancillary (or merely added value) to the journal's primary purpose, it is doubtful that Portuguese was always the source text, especially in articles by/with foreign contributors, but also in the case of immigrant staff members.

Thus, the procedures for analyzing the quality/characteristics of the individual foreign languages involved submitting a sample from each language, particularly articles by top contributors in the translation era, to analysis by a translation scholar who is a native speaker of that language.<sup>49</sup> The Spanish corpus, although its trajectory is described in 2.7.4 below, was not analyzed since the few articles, with one exception, were extra-institutional and never translated.

### 2.7.1 The French Corpus

The complete French corpus in *Memórias* (1909-1989) consisted of 56 articles (<1% of the total production), of which 41 were bilingual (i.e. translations) and 15 were monolingual (3 with English abstracts). Before 1980 there were 47 articles (2.9% of the total production to that point), 44 of which were published before 1956. In summary, except for a brief, small comeback in 1987-89 (of 8 articles), French was basically extinct in the journal after 1934. During the translation era (1909-1956), the 45 articles were from a total of 26 authors; six articles had a co-author. The most prominent contributors were Lauro Travassos (nine articles: 20.4%), Antonio Fontes (five articles: 11.3%) and Aristides da Cunha (five articles: 11.3%), whose resumes are sketched below.

Lauro Travassos, active 1913-1970, is, according to Coura, "the most well-known Brazilian researcher abroad" (1988:143, my translation) and was, according to prominent contemporary Russian scientist K.J. Skrjabin, "the greatest helminthologist in the world" (FERREIRA 1989, p.

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<sup>49</sup> French: Jean-François Bruneliere (Doctoral candidate in TS, UFSC); German: Dr. Berthold Zilly (docent, UFSC.); Portuguese: Vanessa L Hanes (PhD in TS, UFSC); English: myself

468, my translation). Of his prolific sum of 439 works (compiled in DIAS et al., 1990), 42 were in French, of which 5 appeared in *Memórias* and all but three of the rest in the Parisian journal *Comptes Rendus des Séances et Mémoires de la Société de Biologie*. He also published 9 articles in German (four in German journals), one in Italian and one in English. In 1929 he was invited to give a 10-month course at the Tropical Medicine Institute of Hamburg, publishing a nine-article series in *Memórias* the next year (in Portuguese) about the studies he conducted while there (Figure [9], above). However, Ferreira reports that he only spoke Portuguese, recounting an episode in which he clung to a Brazilian scientist who could interpret for him at a London congress (FERREIRA, 1989, p.466). Although his oeuvre partly confirms this, the idea may also be problematic. Regarding English, in agreement with the Ferreira's story, it would seem clear that he did not speak it and had no access to a local translator: in 1961 he published an article in the London-based *Journal of Helminthology* in French; for a 1953 commemorative volume for the University of Lucknow (north India) he wrote in Portuguese. He likewise, did not speak Spanish, since he published two Portuguese works in Mexican journals. However, Ferreira erroneously states that all his articles were in Portuguese (FERREIRA, 1989, p.465). And yet, aside from his 40 other works in French, his contributions to commemorative volumes in Russia and Japan (1937 and 1939, respectively) were also produced in French. This mystery was only intensified by the quality analysis of three of his solo *Memórias* articles (from 1920 & 1921), i.e. that the French was “perfect, without any type of error or Portuguese influence” (my translation), unlike the results for several other authors. Thus, he either had access to a top-rate translator (who did not equally help other IOC authors) or he acquired, somewhere along the way, native-like ability in French. However, the trajectory of foreign language in his career is also curious: his contributions to the *Société de Biologie* journal ended in 1934 as abruptly as they had begun in 1924. In fact, except for the three above-mentioned contributions (Russia, Japan and England)<sup>50</sup>, 1933 was effectively the end of his foreign language production, i.e. the entire latter half of his career was Portuguese only, which would indeed seem strange for someone with the skill displayed in his *Memórias* articles.

According to Souza-Araujo (1943), Antonio Fontes, whose main areas of research were tuberculosis and leprosy, was born to Brazilians of Portuguese descent. He obtained his M.D. in Rio and did his PhD

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<sup>50</sup> Even in Italian; he followed up his 1932 article in an Italian zoological journal with a 1956 article in Portuguese. Was it Lutz (d. 1940), whose skill in Italian is known from his correspondence, who translated for him?

under Oswaldo Cruz at the Institute. Regarding study/work abroad: apart from participating in the 1907 Berlin Exhibition team and winning an award at the 1912 International Tuberculosis Conference in Rome, he was an invited researcher and lecturer at the *Institut Pasteur* in Paris in 1926. In 1927 he lectured in Córdoba (Arg.), Buenos Aires and Montevideo, and in 1930 spoke at congresses in Paris, Hamburg (presenting in German) and Oslo. He was awarded an honorary PhD by the University of Vilnius (Poland) in 1933 and attended a congress in Warsaw in 1934; upon his return and the death of Chagas that year, he was named director of the IOC by Brazilian president Getúlio Vargas. In 1940 he attended a congress in Washington and in 1942 was again in the USA studying cancer treatment. Of his 66 publications, 50 were in Portuguese, 4 in German, 3 in Spanish, 2 in English and 12 in French (18%).<sup>51</sup> Analysis of two of his 1914 articles revealed “typical Brazilian errors”; although “generally OK” and “not a beginner”, some “ugly errors escaped” in his writing “due to lack of consistent revision” (my translation), all of which would lend credence to the idea that the multilingualism present in his articles was indeed his own, and that he self-translated, at least in French. Which would make it all the more curious that the year he assumed the directorship marked, for all practical purposes, the end of French in the journal.

Aristides Marques da Cunha, whose first article in *Memórias* appeared in 1913 and who would go on to produce 21 bilingual articles in English, French and German, was chiefly a protozoologist. Analysis of three of his articles from 1918 and 1919 revealed a level of French that was “very good (with some small errors)”, “perfect” and “perfect”, respectively.

The full sample for the quality analysis included 19 articles by 11 authors from 1909-1957; results for authors not already mentioned are organized into Table [5] below. The results indicate a generally excellent, though non-homogenous, level at the beginning, which gradually worsened after Cruz’ death, culminating in a very low level after the death of Chagas, before rebounding to native levels in the monolingual age (this due to the typically foreign author origin). The few errors in this period could simply be due to carelessness by the authors or to errors in the painstaking typesetting process, which might

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<sup>51</sup> Five of these were bilingual French/Portuguese articles in *Memórias*, which accounts for the numeric discrepancy. One of the French works was a 1932 book published in Paris by Masson & Co. Of the 50 Portuguese publications, 10 were in *Memórias* one other was an IOC monograph.



account for the small accentuation problems all along. The early variance in quality would indicate, at the least, that the entire translation/revision service was not outsourced to a single translator/firm, as well as that the strongest staff were not obliged to revise the others' French, at least very carefully. The literalistic translations and non-native errors demonstrate that the Portuguese text was the source text, excepting possibly for Godoy and Travassos. Although not conclusively so, these factors would seem to indicate that self-translation was the general practice.

**Table 2.7:** General comments by a native French translator about a large diachronic sample of the French *Memórias* corpus

AUTHOR/S	YEAR	COMMENTS
Vasconcellos	1909	-Literalistic translation from Portuguese; conjugation error, accentuation errors
Godoy	1914	-Mostly accent errors, nothing serious
	1910	-French surname; well written in both languages (author could be a native French speaker); not a literal translation but a reformulation showing freedom and confidence
Horta	1911a	-Mostly accent errors, nothing serious
	1911b	- The translator has a good command of French but occasionally lets slip errors that indicate a Brazilian origin
Aragão	1911	-Very good French; some small errors due to Portuguese interference
Torres & Villaça	1919	- Well written in French, but small non-native errors demonstrate that it was written by a Brazilian
Almeida	1920	-Structural errors and Portuguese interference, accent mistakes, awkward collocation
Moussatché <sup>52</sup> & Dias	1938	-Gender errors and inconsistencies; 'fatal' plural article error
Ciucă & Combiescu (Romanians)	1957	-Small typos only

<sup>52</sup>Haity Moussatché was born in Turkey and was a victim of the 1970 "Massacre de Manginhos".

## 2.7.2 The German Corpus

A total of 149 German articles (20 untranslated) were published in *Memórias* by 27 different authors, with the first appearing in 1909 and the last in 1971. As shown previously in Figures [1&2], German was the principal foreign language in *Memórias* by a wide margin until the outbreak of the First World War, after which it disappeared until the early 20s, held on at around 10% until 1935 and then again vanished. Except for a few articles published between 1950-1956, it would have remained extinct if it were not for the hiring in 1950 of the just-immigrated German zoologist/theoretical physicist/meteorologist Rudolf Barth, who went on to contribute a total of 63 articles to *Memórias* between 1951 and 1971, 30 of which were in German - 15 translated and 15 monolingual (all of which were published after 1956). Just four authors produced 67.9% of the German articles: Lutz, with 33 (24.6%), Barth, with 30 (21.8%), Arthur Neiva, with 15 (11.1%) and Henrique Aragão with 14 (10.4%). Eight other authors contributed 5-8 articles each. Eighteen articles were collaboratively authored, with Lutz & Neiva writing eight articles together.

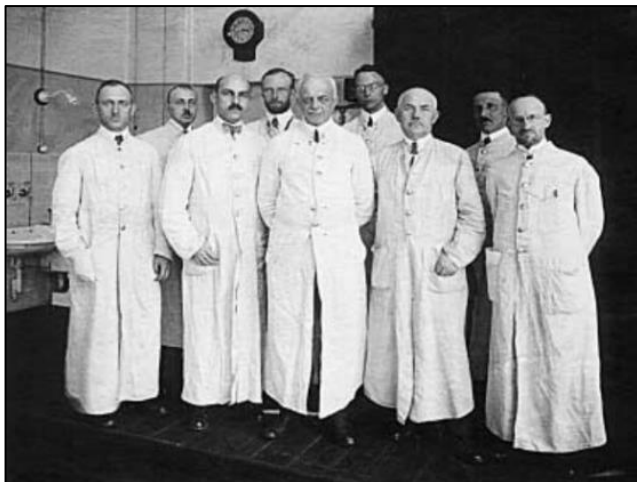
### *The Hamburg connection*

The IOC's chief of service, Henrique da Rocha Lima, left the IOC for Germany in 1906, taking a position as head of the Hamburg Institute's Pathology department in 1909, where he stayed until 1927. Soon after arriving, he "played a key role in the preparation of the materials and works exhibited [by the IOC] at the XIV International Hygiene and Demography Congress and the Hygiene Exposition, which took place in Berlin in 1907" (Silva 2011:29, citing Benchimol, 1990 and Cukierman, 2001, my translation). Following this success, three researchers (Antônio Cardoso Fontes, Alcides Godoy and Henrique Aragão) were sent on research stays in Germany (Silva 2011:30). In return, Gustav Giemsa and Stanislaus von Prowazek<sup>53</sup> came from Hamburg in 1908 and 1908-09, respectively, followed by Max

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<sup>53</sup> From his return to Germany until his untimely death in 1915, Prowazek worked closely with Rocha Lima, discovering the pathogen of epidemic typhus (Fleischer 2000:748-49, Marcolin 2011:9, Silva 2010, 2011 & 2013). The complex network surrounding Prowazek's activity in Brazil, including an intense intercontinental exchange of correspondence and journal articles, has been described in Kropf and Sá (2009, p.17-22).

Hartmann and Hermann Dürck from Berlin<sup>54</sup>, authoring or collaborating (with Godoy, Aragão and Chagas) on eight articles published in 1909-10 (KROPPF; SÁ, 2009, p.17; SCOTT, 1939, p.1025).



**Figure 2.12:** Hamburg Institute for Maritime and Tropical Diseases staff in 1922. Bernhard Nocht, center, flanked by Rocha Lima (his right) and Gustav Giemsa (his left)

### **Textual analysis**

#### ***Chagas 1909***

Chagas produced a total of six articles in German, including two in collaboration with Max Hartmann. Although he was not among the top contributors, the two-column bilingual article, “Nova tripanozomiaze humana/Ueber eine neue Trypanosomiasis des Menschen” (*Mem. Inst. Oswaldo Cruz* 1(2):159-218), is of special importance, being the initial full description of *Schizotrypanum cruzi* and American Trypanosomiasis (what would later be called ‘Chagas disease’). Since it would be difficult to overstate the importance of this article for the development of Tropical Medicine, especially in South

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<sup>54</sup> Prowazek and Giemsa were heads of the Protozoan Laboratory and the Chemistry department, respectively of Hamburg’s Institut für Schiffs- und Tropenkrankheiten (Institute for Maritime and Tropical Diseases) (FLEISCHER, 2000). Hartmann was a founding member of the Kaiser-Wilhelm(later Max-Planck)- Institut für Biologie, serving as director of Protistology from 1914-55 (Max-Planck-Institut für Biologie 1983, Max Planck Campus Tübingen 2015). Pathologist Hermann Dürck was Rocha Lima’s professor in Germany (SILVA, 2011, p.30).

America, it is an opportune place to begin a textual analysis. Coura stated categorically that Chagas could not write in German, although he spoke and could have written in French (Appendix B: question 19). In Dr. Zilly's analysis, the article's German is "perfect"<sup>55</sup>, as well as more accessible than the Portuguese, an example of "real" German, due to the occurrence of words that only with great difficulty could be acquired abroad. He explained that the German text was more economical than the Portuguese, using pronouns to dispense with repetitions (i.e. indicating that the Portuguese was the source text), which led him to infer that the translator must have been a specialist, rather than a professional translator, since he felt free to make alterations, knowing what content was actually essential. Passive voice was changed to first person, and the tone could have been from southern Germany or Switzerland (which might betray the involvement of Lutz). However, there was one case of invented detail added in the German text, i.e. that the *barbeiros* (the insect vectors of the disease) were attracted [out of the forests] to the light of rural shacks. This is completely incorrect since the same text states (1909: 159-60) that they lodge (permanently) in the cracks between the wood slats of hovels, only coming out after all the lights are extinguished and immediately scurrying for cover when a light is lit. This gaffe indicates, first, that it was not Chagas who translated this article and, second, that he did not or could not carefully review the translation. Moreover, the translator could not have been present in Lassance, MG, where the research took place, and did not confer with Chagas about this point. Also of note was that the letter 'ß' was replaced with 'ss' throughout.

### ***Prowazek & Aragão 1909***

After Lutz and Barth, Aragão was the top contributor of foreign language to *Memórias* and, after Lutz, the most diversified: of his 29 foreign-language articles 12 were in English, 3 in French and 14 in German. After obtaining his M.D. in Rio, he later studied zoology at the University of Munich and hydrobiology at the Russian Zoological Station at Villefranche-sur-mer. After a long career researching a wide range of diseases such as bubonic plague, smallpox, yellow fever and malaria, he served as IOC director from 1942-49, the last of the original crew and, according to Coura, the Institute went into a long period of general decline after his retirement (Appendix B: question 2, ARAGÃO,

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<sup>55</sup> All of Dr. Zilly's quoted comments are my translation of notes taken during face-to-face conversations in Portuguese.

1986). He was a member of various societies, including the *Societ  de Pathologie Exotique* and the Royal Society of Tropical Medicine and Hygiene. Coincidentally or not, the year of his death marked the end of the translation era in *Mem rias*.

Since Prowazek was from Bohemia, it was suspected that there might be some evidence of this in his German. However, Dr. Zilly immediately dismissed this idea, reporting that the Czechs [then, at least] had perfect mastery of German.

The analyzed article was “Estudos sobre a Variola/Variola-Untersuchungen” (*Mem. Inst. Oswaldo Cruz* 1(2):147-158), written upon the occasion of the 1908 smallpox epidemic in Rio. It was observed that the German was not a literalistic translation of the Portuguese. A capitalization error was found in the opening paragraph. On this same page two cases of unusual diction were also found: instead of ‘vector’, the word *Erreger* (i.e. “provoker”, “causer”) was selected; the collocation “erster Reihe” called attention, although it was not technically incorrect. This page also contained a disconnection, what might be considered a mistranslation: the word *filtrabilidade* (“filtrability”) in the Portuguese version appeared as *Filtrationsversuche* (“filtration tests”). The final paragraph on this same page contained a very long, complicated procedural sentence in German that was split into two sentences in a subordinate relation in Portuguese, from which it was concluded that the German text came first. Among a few other small cuts and subordination issues, Dr. Zilly concluded with “Hats off to the translator” [i.e. of this complex work]; “I saw no serious error”, “the denotation is there; the essential is transferred”. However, Dr. Lourenço-Hanes did not find the same with respect to the Portuguese: in a single page (148), she pointed out four cases of inverted word order that could only have be due to a literalistic translation from the German (“*Para isso conseguir...*”, “*Condição capital para o sucesso da filtração   que...*”, “*a camada coloidal facilmente se fende...*” and, referring to filtrates, “*são estes desecados*”). In summary, the German appeared to predominate over the Portuguese, giving the idea that the German text came first (and foremost), with the Portuguese version playing an ancillary role, which might be explained by the natural deference of the young Arago for his eminent co-author.

### **Lutz 1910**

Although born in Rio, he obtained his MD from the University of Bern in 1879, subsequently studying experimental medicine in London, Leipzig, Vienna, Prague and Paris. After a period as a clinician in So

Paulo, he specialized in Tropical Medicine at Hamburg. By 1889 he was directing a Leprosy colony in Hawaii, where he met British nurse Amy Fowler, who would become his wife. After a year in San Francisco, he became director of São Paulo's Bacteriological Institute in 1893, where he remained until becoming head of Experimental Pathology at IOC in 1908, where he spent the remainder of his long career, passing away in 1940 (BIBLIOTECA VIRTUAL EM SAÚDE, 2015; BENCHIMOL 2003).

Lutz published total of 64 articles in *Memórias* from 1909 until his death in 1940 (including 4 posthumous articles on the history of medicine in Brazil. Of this total, four appeared in a foreign language only (one each in English and French and two in German) and 10 appeared in Portuguese only. Besides substituting for Cruz as editor of *Memórias* (Marcolin 2009:1), it has also been documented that “the virtually thankless task of translating [the German-language articles in *Memórias*]...fell to Adolpho Lutz” (BENCHIMOL; SÁ, 2006, p. 390). Thus any Swiss regionalisms that might be found in the corpus would tend to confirm his presence as a translator, reviser or editor. However, regarding the article selected for analysis, “Segunda contribuição para o conhecimento das especies brasileiras do genero ‘Simulium’/Zweiter Beitrag zur Kenntnis der brasilianischen Simuliumarten” (*Mem. Inst. Oswaldo Cruz* 2(2):213-267), Dr. Zilly had little to say other than “it could have been written by a professor from Berlin.” Nevertheless, as in Chagas 1909, the ‘ß’ was replaced with ‘ss’ throughout, which, although it might have been a typesetting constraint, might also be evidential: he explained that a double ‘s’ would “never be found in Germany in that epoch” but was characteristic of Swiss German (and anticipated a later orthographic reform). This, together with the language level (and even the factual *faux pas*), could indicate that Lutz was indeed the translator of Chagas (1909).

### ***Institut „Oswaldo Cruz“ (1911)***

*Institut „Oswaldo Cruz“* is an undated 63-page A5 booklet, written entirely in German, which details the IOC's history, techniques, publications and library holdings. Its listing in the WorldCat database,<sup>56</sup> as well as the endpoint of its publications list, indicate that it was prepared as promotional material for distribution at a major event in which the IOC participated in 1911: the Fifth International Exposition of Hygiene and Demography in

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<sup>56</sup> Listed in the WorldCat library system as Institut Oswaldo Cruz, Manguinhos, Rio de Janeiro (Brazil): Internationale Hygiene-Ausstellung, Dresden 1911 ([http://www.worldcat.org/title/institut-oswaldo-cruz-manguinhos-rio-de-janeiro-brazil-internationale-hygiene-ausstellung-dresden-1911/oclc/612057431&referer=brief\\_results](http://www.worldcat.org/title/institut-oswaldo-cruz-manguinhos-rio-de-janeiro-brazil-internationale-hygiene-ausstellung-dresden-1911/oclc/612057431&referer=brief_results)).

Dresden. This event, which was open to the public, was no small proceeding; it was more or less on a par with a World's Fair, attracting up to 30,000 visitors daily during its first two months (DILLON 2007 citing HOME, 1911, p. 712-13). Thus, produced in a foreign language exclusively for a large foreign public, such a volume would be expected to carry the Institute's best (and most accessible) language level.

## Institut „Oswaldo Cruz“.



Das Institut wurde 1901 speziell für die Herstellung eines Heilserums gegen Pest gegründet. Nach und nach entwickelte sich dasselbe immer mehr, so dass gegenwärtig alle die gewöhnlich gebrauchten Sera und Vakzinen daselbst hergestellt werden. Ausserdem befasst sich das Institut mit dem Studium der Infektionskrankheiten von Menschen und Tieren und gibt gleichzeitig Unterricht in Bakteriologie, Mikroskopie, Protozoologie und Parasitologie und ihrer praktischen Anwendung auf Hygiene und Tierheilkunde.

Im Institute hergestellt werden folgende

**Heilsera:**

Heilserum gegen Pest.	„ „ Diphtherie.
„ „ Tetanus.	„ „ Streptokokken.
„ „ Dysenterie.	„ „ Typhus abdom.
„ „ Paratyphus.	

und folgende

**Agglutinierende Sera:**

Typhus.	Dysenterien.
Paratyphus A.	Cholera.
„ B.	Streptococcus.
Colibacillus.	Bacillus enteritidis.
TUBERCULIN.	MALLEIN.

**Vakzinen:**

Vakzine gegen Pest.	Vakzine gegen Rauschbrand.
„ „ Milzbrand.	„ „ Hühnerspirillöse.

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**Figure 2.13:** Opening page of the undated German-language booklet *Institut “Oswaldo Cruz”*

Dr. Zilly observed that the German was “not elegant, but functional”, and that it was “not by a native”, immediately pointing out what he considered awkward wording on the first page (depicted in Figure [11] above, the sentence above the initial table ending in *Helisera*). He explained that this sentence (involving a direct/indirect object relation) could have been worded three possible ways and still remain within the confines of grammatical correctness, but that *Helisera* could never be the final word. It was inferred that this was done to conform to a Portuguese original written to lead smoothly into the table that followed. There was also apparently a small error with *Agglutinierende* on the same page, but he added that there are native

speakers who would commit the same error. He also pointed out that, despite such issues, the text generally read better than the type of contemporary German texts you might find at book fairs or related to tourism, etc.

### **Barth 1951**

Since Barth began producing Portuguese-only articles in *Memórias* just a year after having emigrated with his wife and children from Germany as refugees<sup>57</sup>, it was suspected that some outside source was involved in their production. Besides any help he may have gotten at the Institute, he had a brother, Hans Christian, who had previously immigrated to Rio and worked as a salesman for Bayer (BARTH; ALVAREZ, 2012, p.970). The Portuguese version of his first article in *Memórias*, “O órgão odorífero de um macho do gênero *Eripoyga*” (*Mem. Inst. Oswaldo Cruz* 49: 611-628), was examined by Dr. Lourenço-Hanes, whose immediate comment was that it was evidently a translation due to a number of problems:

- Awkward/non-native collocation: “De outro lado...” instead of “Por outro lado...” (BARTH, 1951, p.600); “...sendo ainda rolado mais pelo movimento enrolante...” (BARTH, 1951, p. 601); “músculos diagonais que abaixam na contração a dobra sôbre a fenda da abertura do sulco” (BARTH, 1951, p. 603), etc.
- Handling of passive voice; “Mesmo assim foi conseguida a classificação no gênero [...], o que devemos...” (BARTH, 1951, p: 599 )
- Confusing plural construction: “A glândula está situada num sulco no segundo, terceiro e quarto *segmentoabdominal*” (BARTH, 1951, p. 600 – emphasis added)
- Empoverished vocabulary: “a cutícula forma um aumento em forma de um saco” (BARTH, 1951, p. 603)
- Uncharacteristic lack of commas, leading to a confusing run-on sentence (BARTH, 1951, p. 601- first paragraph)
- Orthographic mistakes: e.g. “colaração” and “u’a” (which, as similar errors seen in the French corpus, may be attributable to the typesetters)

Her impression was that the article seems as if it were produced by someone who didn’t fully understand the content and that there was a

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<sup>57</sup> He embarked from Hamburg in December 1949 on a Brazilian warship (Barth & Alvarez 2012:970); Brazil, as well as South Africa and Australia, were seeking immigrants in this period (FIOCRUZ, 2015: <http://www.fiocruz.br/ioc/cgi/cgilua.exe/sys/start.htm?infoid=212&sid=77>).



“felt other”, i.e. it seems too faithful to something else rather than an original composition (indicating the expected: that the German version was the source text). This summary might imply several things: first, if this is Barth’s own Portuguese, acquired over the course of a year, then it is quite good, since the article, despite the above issues, is sufficiently readable; second, and more probable, that the translator was Barth’s brother, since he had already been in Brazil some time, working in sales, and was not a scientist; third, and worse for the journal, this article indicates that the level of editorial revision was low at this point, i.e. that language quality was left up to the individual scientists and the translation had to be arranged “catch as catch can” on an individual level<sup>58</sup>.

### 2.7.3 The English corpus

Although present in the journal from the beginning, English was not a significant presence until after the First World War, when it became leader, by a nose, among the small minority of foreign languages. However, as has been previously demonstrated, within a decade of the reopening of *Memórias* in 1980 and the new open policy, English had rivaled, surpassed and suppressed all other languages, including Portuguese, the native language of most every scientist working at the Institute. As policy, the language went from preference to institutionalization to an outsourced non-issue, as seen in the instructions to authors (Table [4]).

By the end of 2012, had been 4591 articles, or 71.6% of the journal’s total production had been in English. However, this is all the more dramatic when compared with the pre-1980 figures (i.e. 1909-1979), in which there were there were a mere 223 articles (13.9% of the total), of which 175 were translated. During the translation era (1909-1956) there were 186 English articles by 81 different authors, 40.8% of which were produced by six individuals: Adolpho Lutz, 20 articles (11.2%), Henrique Aragão, 12(6.7%), Magarinos Torres, 12, Wladimir Lobato Paraense, 10, Heraclides de Souza-Araujo, 10, and Eurico Villela, 9. Eleven other authors produced between 5-8 articles and 19 others produced 2-4.

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<sup>58</sup> A scenario reminiscent of that described by Piekkari et al. (2012) in a contemporary European service multinational, in which employees routinely resorted to kinship/friendship networks to handle translation tasks rather than go through corporate channels.

## Textual analysis

### *Neiva & Aragão 1909*

As mentioned above, Aragão was second only to Lutz in both foreign-language production (29) and in English (12) in *Memórias* during the translation era. Neiva's foreign language publications, however, were exclusively focused on German, with the exception of this one article, which is interesting since in 1927 he publicly advocated that the substitution of English for French in Brazil's schools and among its literati (SOUZA, 2009, p. 255).

Rather than go into a multiplicity of examples, a single complex sentence from the opening paragraph was selected to indicate the character of the English in this article:

Later, in 1904, Castellani, having observed another parasite of the same kind in the blood of the *Hemidactylus leschenaulti*, Gray, established for this and the one observed by Simond a new genus: *Haemocystidium* which he considers as only provisory, noticing at the same time the great resemblance between these forms and the haemoproteus of the birds" (NEIVA; ARAGÃO 1909, p. 44)

Here, a number of features present throughout the article are displayed: anastrophe (DO-IO: "for this...a new genus"), underpunctuation (no comma offsetting relative clause), spelling errors ("resemblance"— French influence?), superfluous definite articles and awkward diction ("noticing") and demonstrative pronoun use ("this and the one"). The same simplifying tendency observed by Dr. Zilly in Chagas 1909 was also present here, except in this case without retaining the elegance and erudition of the original:

Mais tarde, em 1904, Castellani viu outro parazita da mesma natureza, no sangue do *Hemidactylus leschenaulti*, Gray e aproveitou a ocasião para crear com este hematozoario e o descrito por Simond, novo genero, *Hemocystidium*, a que elle dá carater provizorio, ao mesmo tempo que assinalava a grande semelhança entre esses parasitas e os hemoproteos das aves." (NEIVA; ARAGÃO, 1909, p. 44)

Of course, the English translation is perfectly comprehensible, it just suffers from an accumulation of non-native, or awkward, expressions. The only main issue not explicitly present in this sentence is the pervasive misuse of prepositions. It would seem clear at this point that the language is of European influence and focus.

### ***Lutz 1918***

Although German was the most frequent overall foreign language among Lutz' works in *Memórias* (33 articles, compared to 19 in English and 2 in French – Table [4]), diachrony tells a different story (to be more completely discussed in Chapter three): German only predominated until the outbreak of the First World War, when it was the only foreign language (19 articles). From 1915-1943 he produced 19 articles in English and 14 in German in *Memórias*. Thus, since English grew in importance in Lutz' latter career (explored more fully in Part Three), it is important to examine it. Thus, several commented passages from Lutz' first solo English entry in *Memórias*, “On Brazilian fresh-water shells of the genus *Planorbis*” (*Mem. Inst. Oswaldo Cruz*; 10(1-Translations):45-61) follow below:

The gasteropods of fresh water are either operculate or not operculate. The first include the largest forms in the genus *Ampullaria*, characterised by four antennae and e respiratory syphon. Their shell is usually globose, as in the common snails. (p. 46)

The initial phrase of the first sentence displays what might be considered a generally characteristic lack of nominal grouping as well as superfluous definite article usage, which is also found in the final clause of the third sentence. The orthography follows UK conventions (“characterised” and, below, “colour”), and includes what might be now considered errors (“gasteropods” “syphon” and “litterature”, below), although a Google Scholar search quickly confirmed all of these in the writings of native English speakers from the same period. The lack of capitalization in the final passage below would be the only outright errors (as well as the typo above in the second sentence).

Nevertheless, such considerations should not be taken to mean that Lutz had a weak grasp of English or ineffectively expressed himself, an idea thoroughly confounded by the following examples:

Considering that the species are often widely spread and rather variable, we might expect a large synonymy. The difficulty in obtaining all the literature, as well as the insufficiency of descriptions, often made from empty shells, form other obstacles. (LUTZ, 1918, p. 46)

Some shells are almost hyaline of amber or honey colour, or rusty, or blackish. During life the colour of the animal shines through the transparent shell which, after death, shows a more variable colour, in consequence of decomposition (LUTZ, 1918, p. 47)

The drawings given are so accurate that they make the description almost unnecessary. I shall also mention other brasilian and south-american species, reproducing the descriptions and drawings I found in the litterature. (LUTZ, 1918, p. 48)

### ***Souza-Araujo 1929/1950***

*Leprosy: Survey Made in Fourty Countries (1924-1927)*, a 400-page English edition of an IOC book also released in Portuguese, details Heraclides de Souza-Araujo's global tour of medical and leprosy treatment facilities, including, besides a condensed travel narrative and a state of the art for each visited country, an open-ended postlude on his efforts to organize a *Soci  t   Internationale de Leprologie*, which will be examined in some detail in section 3.6.2 as an important source of information about international networking and language among public health/Tropical medicine centers. It was apparent that he had a sufficiently functional level of English before embarking in 1924, since his first stop (for over a year) was in North America to visit the US National Leprosarium and take courses at Johns Hopkins and Columbia University (SOUZA-ARAUJO, 1929, p.7).<sup>59</sup>

Collocation and orthographic problems are evident already in the title, which indicates that the manuscript was not professionally revised and possibly that no one with great proficiency was available at the IOC to help. As will be discussed later, it is curious that the volume was written in English and not French, since his plan was to found a society based in Paris. Without further comment, a brief example will demonstrate the level:

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<sup>59</sup> He went on to study at the London School of Dermatology in 1930-3, serve as vice president of the International Leprosy Association from 1932-56 and on the WHO expert panel on Leprosy (Peterson & Skinsens 1973:166), besides serving as editor of *Mem  rias* (see section 2.3.2).

Dear Dr. WADE: When in CULION I said you that it was time to found an International Association of Leprosy, you answered: "Who knows who are the leprologists? We must first of all find them..." Now I saw here in Roma that you are trying to find them. The method you adopted is agreeable and profitable because will give you other interesting *data*. Professor D'AMATO showed me your questionnaire, which answer I am enclosing herewith. (SOUZA-ARAÚJO; 1929, p. 369)

However, 21 years later, a fine example of a high level of acquired English in all its professional precision can be found in another of his articles ("Case of acute malignant leprosy, with infection of the consort within three months of matrimonial life: isolation from a cutaneous lesion of the same patient of an acid-alcohol fast bacillus (Chromogenic culture) pathogenic for rats, mice, *Macacus rhesus* and man". *Mem. Inst. Oswaldo Cruz*; 48:76-99, 1950). Title notwithstanding, the prose is deft, with all the economy characteristic of the medical case study genre, despite the length of the report (39 pages):

June 24.1949. Under the guidance of a nurse and following instructions from Doctor EDGARD TOSTES, head of the Medical Department of Panair of Brazil, Mr. J. L. Chaves N., radio operator of that company for 6 years and a former telegraph operator of the Department of Posts and Telegraph, came to our office at the Instituto Oswaldo Cruz, for medical advice and care. (SOUZA-ARAÚJO, 1950b, p.76)

Sodium hydrate, after 24 hours action, had introduced no changes in the morphological appearance or in the acid-alcohol fastness of the bacilli, a fact which has not as yet been reported in previous publications. (SOUZA ARAÚJO, 1950b, p. 78-79)

Similar to Lutz 1918 (although to a greater degree), a series of small errors indicates that this was not the (translation or revision) work of a native English speaker.<sup>60</sup> Although two patient charts in the

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<sup>60</sup> Error examples: (plural) "a 30 years old white man"; (orthography/typo) "a hearth ailment", "surprise to ear from this colleague"; (preposition) "On December 1948" (both SOUZA-ARAÚJO, 1950b, p.76) and "...whose fate greatly interested us not only on the humanitarian but also on the scientific point of view." (SOUZA-ARAÚJO, 1950b, p. 99); (phrasal verb)

Portuguese version are not reproduced in the English version, a series of color and black and white plates appear at end of the Portuguese version with legends in both Portuguese and English. Among these, photography and drawing credits are ascribed, but no translation credits are to be found anywhere. This, along with the small errors noted above, could be taken as fairly solid evidence of self-translation. Also of interest is that, first, a key quote by Dr. Marchoux, an international leprosy authority, is left in the original French in the Portuguese version (Souza Araujo 1950a:59), whereas it is translated in the English version (Souza Araujo 1950b:84). Second, the report contains the full professional correspondence associated with the case (experts from different laboratories were involved in the diagnosis and treatment), which is entirely translated, creating, if the above supposition is correct, a hybrid document both translated and self-translated.

### ***Mazza 1949***

This is the one Spanish article accompanied by a translation in *Memórias*, and important for other reasons as well: Salvador Mazza's (1886-1946) extensive work proving of the existence of Chagas disease in Argentina helped bring the disease back into the spotlight in Brazil (KROPF, 2009, p. 222), which through heated contestation in the National Academy of Medicine, and even the IOC, had been at least partially discredited (Coura Appendix B: question 38; COUTINHO; FREIRE; PINTO-DIAS, 1999; KROPF, 2009, p.12-20; KROPF; SÁ, 2009, p.26; KATZ, 2010). After obtaining his M.D. in Buenos Aires in 1910 and being employed by the *Instituto Nacional de Bacteriologia*, Mazza pursued further study in Paris, London, Algeria (with the *Institut Pasteur*) and Germany, where he met Chagas in 1918 (MARÍN, 2009).

This posthumous article ("La enfermedad de Chagas en la Republica Argentina"/"Chagas disease in the Argentine Republic" (*Memórias* 47(1/2): 273-88/289-302) is a summary, of sorts, of his work. The style was perfectly fluid, with no outright errors: just a single case of a gerund used in place of an infinitive and past tense used instead of present perfect (both MAZZA, 1949, p. 289), as well as two misspellings ("inefective" & "methil"), together giving the very slight impression that it was not written by a native. The only evidence of British spelling was "localised"; it was mentioned that a specifically-developed drug was in production in England, although the developer

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"For many years, we have been using to collect nasal mucus with a curette..." (SOUZA-ARAJO, 1950b, p. 77) etc.

was not.

### ***Paraense 1949/2004***

Wladimir Lobato Paraense (1914-2012), IOC staff beginning in 1939 and director from 1976-79, was internationally known for his studies in Malacology (mollusks), having taught courses in Mexico, Venezuela, Argentina and Cuba (PARAENSE, 2004; LOPES, 2012). Of his more than 200 scientific works (KATZ, 2012), he produced 10 foreign-language articles in *Memórias* before 1957, all in English. In a late interview, he lamented the lack of preparation among modern students, stating “They don’t know English, which is fundamental for [research] work” and was reported as being able to “read and write in French, Italian, Spanish and English” (ROSALEM, 2000, my translation).

This article, “*Verificação da existencia de uma fase negativa do sangue no preiodo prepatente da babesiose canina transmitida por carrapatos*”/“The verification of the existence of a negative phase in the prepatent period of canine baseasis transmitted by ticks.” *Mem. Inst. Oswaldo Cruz*; 47(3/4):367-73/375-80, one of four articles he published that year (all with English versions), follows the now-standard IMRaD format<sup>61</sup>. Here, again, the writing is perfectly readable, creative even,<sup>62</sup> except for small non-native traces<sup>63</sup>. However, at the other end of his career, some 55 years later, in a brief historical article (“A fragment of Malaria history” *Mem. Inst. Oswaldo Cruz*; 99(4):439-442, 2004), the English has become, as in Dr. Zilly’s earlier comments, ‘perfect’; it could have been written by a professor from New York (i.e. no UK orthography was observed). Whether this was fully his own work could not be determined, but it demonstrates, nonetheless, that the focus and attention to detail in the journal with respect to English had at last arrived at the high standards previously seen in German and French.

### ***The current state of English in Memórias***

The achievement of such standards was undoubtedly nurtured by the changing editorial policy, which as seen in Table [3], began

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<sup>61</sup> Introduction, Methods, Results and Discussion

<sup>62</sup> “In this order of ideas, it should be remembered that...” (PARAENSE 1949, p. 380)

<sup>63</sup> i.e. superfluous definite article use, under/overpunctuation, demonstrative pronoun issues, and ‘semi-false cognates’ based on Portuguese usage: “In order to avoid the dogs eating the ticks fixed on them, the two animals infested with ticks were kept muzzled during the whole period of infestation.” (PARAENSE 1949, p. 377)

emphasizing not just English, but revision by a native speaking scientist in the instructions to authors beginning in 1980. Although English was not explicitly mandated as the only language of expression until 2012, the new policy of total translation/revision outsourcing<sup>64</sup> appeared soon after in 2013 (see Coura, Appendix B: questions 32-34), in keeping with what by this point had become undeniable reality, i.e. that (in Halliday's words<sup>65</sup>) the language of science has become scientific English. The rationale for such a policy is perhaps best described by Meneghini & Packer, cofounders of SciELO:

During the past three decades, editors have become increasingly tough and demand better English in scientific manuscripts...Reviewers might also be more inclined to reject a paper because of poor English. Furthermore, the requirement for clear and understandable English increases with the prestige and/or impact factor of the journal, thus creating a language barrier that many scientists find difficult to overcome (MENEZHINI; PACKER, 2007, p.114).

The effects of this service on the language quality in *Memórias* have, been, of course, enormous and are a distinctive among other top Brazilian scientific journals. In a previous study (HANES, 2014), the error rate in *Memórias* was found to be virtually nil, i.e. 2.41 errors per 1000 words, compared to over 100 in two other of the five top-ranked SciELO journals. However, this level has not been completely extended to the *Memórias* website - as one example, the very sentence describing the outsourcing policy<sup>66</sup>:

Papers submitted to *Memórias* will undergo *the* Premium Editing of English language review *made* by American Journal Experts, further suggestions will enhance nonnative English writing style. (MEMÓRIAS DO INSTITUTO OSWALDO CRUZ, 2015, emphasis added)

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<sup>64</sup>Outsourcing to American Journal Experts, an academic editing and translating firm based in Durham, NC, USA that employs only "subject-expert editors" with advanced degrees. [https://www.aje.com/pt?utm\\_source=RockettDisplay&utm\\_medium=banner](https://www.aje.com/pt?utm_source=RockettDisplay&utm_medium=banner) Accessed 23.09.2015.

<sup>65</sup> HALLIDAY, M. A. K/ WEBSTER, J. 2004.

<sup>66</sup> <http://memorias.ioc.fiocruz.br/editorial--policy> Accessed 23.09.2015



## 2.7.4 The Spanish corpus

A total of 31 Spanish articles appeared in *Memórias*, published in the following years: 1929, 1949, 1955, 1956 (1 each), 1958 (2) and the remainder between 1982-89, with the final two years the strongest (6 and 8 articles, respectively). These were unanimously of foreign origin, principally Latin American. A single article, Mazza 1949 (as seen in 2.7.3), was translated, although 18 of the 27 produced in the 1980s had an English abstract. Though 11.9% of all contributing authors between 1980 and 1995 were from (non-Brazilian) Latin American Institutions, just 27 of the 1961 published articles were in Spanish (1.3%).

## 2.8 SUMMARY OF THE RESULTS

These results have shown that distinct periods were discernible in the history of *Memórias* regarding foreign language. The journal's approach varied considerably, gradually shrinking from a "golden age" (or more coherently, from a historical standpoint... a *belle époque*) of translation at the beginning to a Portuguese-only stance in the latter half of the 20<sup>th</sup> century, punctuated by nearly complete Portuguese monolingualism during the World Wars, which that may have shifted the balance away from German, French (and possibly Europe) toward English (and the New World). After a McCarthyist purge during the *Regime Militar* and re-emerging from a period of what Coura describes as institutional neglect (Appendix B: questions 2-4), *Memórias* was reinitiated with a new open authorship policy which either led to or was driven by a sweeping move toward English as the only language of expression, sidelining small French and Spanish resurgences and, coincidentally or not, eclipsing the local Portuguese (in defiance of the then-new Brazilian Constitution<sup>67</sup>) roughly when the journal first went online.

When translation was practiced, a handful of authors (with polyglot Adolpho Lutz standing out) were responsible for a portion upwards of 50% of the production in each language. Linguistic analysis

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<sup>67</sup> Brazilian constitution of 1988, Art. 13: "The Portuguese language is the official idiom of the Federal Republic of Brazil" (my translation). This is also the reverse of the original bylaws delineating the creation of *Memórias*, which mandated that the articles appear in Portuguese and also in translation as seen fit. Thus, the irony of a highly multilingual institutional journal published by a handful of scientists developing into a massive international journal publishing monolingually, and a foreign language at that.

of this production, particularly among the top producers, revealed variability in the quality: from native, to near native, to novice. This quality generally seemed to decrease over time in French and German and to increase in English, which may also have something to do with the languages' relative diachronic frequency, an idea that would fit in well with the journal's recent English outsourcing policy.

There was also a fairly distinct profile in each foreign language regarding content, with zoological subjects more prevalent in German and French articles and Pathology more frequent in English, although substantial follow-up on this point goes beyond the design of this study.

The few pre-1980 outside contributions seemed mostly like invited VIPs or were confirmatory of IOC lines of research. And although a handful these were from Hispanophone countries, the language had a negligible impact in the journal, despite the fact that Brazil is literally surrounded by Spanish speakers. Whether this actually indicates that there was little or no interchange between regional scientific institutions is another question that is at least initially addressed by Mazza's 1949 article (2.7.3).

Though these statements would seem fairly solid, their contextualization within the Tropical Medicine milieu, both in Brazil and abroad, as well as their interpretation will be the subject of the next chapter.

### 3 MEMÓRIAS AMONG OTHER JOURNALS

In Chapter Two, data about *Memorias*' language of publication were presented both on a macro-level, including editorial periods and paratext as well as on a micro-level, including the contributions of individual authors over time and an analysis of the characteristics of the foreign language published under their names. Such data demonstrate that policy and interests changed and when they did so, but they do not explain why things occurred as they did.

However, any attempt at explanation must be prefaced by an examination of a more immediate question, i.e. the larger patterns of behavior exhibited by *Memorias*' cohort of national and international journals. It must be determined to what extent the trajectory of *Memórias* language policy was unique, and what elements it shared with, as well as any influence it might have exerted over other journals in its milieu.

Given the previously-demonstrated phases of *Memórias*, in which translation ended and foreign language declined greatly while the published parameters for contribution remained basically constant, it follows that the existence of any administrative language directives remain hidden. However, determining the degree of organicity in the journal's language practice, i.e. as an outgrowth of institutional culture rather than obedience to imposed protocols, would carry considerable explanatory power regarding the observed changes over time demonstrated in the previous chapter. In order to get at an understanding of such institutional culture, a number of sources parallel to the *Memórias* article corpus must be examined, such as staff publications beyond the journal, an indication of what they read and who they corresponded with, who was mentioned when the institutional story was told and retold, what comments staff members made about the subject in interviews and documentation of the general mechanics of international scientific interchange. Although a forming complete and detailed cultural panorama will not be possible, a number of snapshots have been derived from the following material, which should suffice to characterize international interaction and its influence on language practice:

- a) (3.1) The booklet *Institut „Oswaldo Cruz“* provides a concise record of all publications by IOC authors and the Institute's journal collection at the time of the Dresden Hygiene Exposition of 1911, and thus the initial conditions when the multilingual journal

- policy was established;
- b) (3.2) Collections of the complete works of five important IOC figures, Oswaldo Cruz, Gaspar Vianna, Carlos Chagas, Adolpho Lutz and Lauro Travassos, which span almost the entire history of the journal until its re-inauguration in 1980, are analyzed regarding publication language and location;
  - c) (3.3) the catalog of Adolpho Lutz' correspondence, which has been made partially available online by the Casa de Oswaldo Cruz, is sorted by the nationality and specialty of correspondents;
  - d) (3.4) The largest obituary/retrospective editorials in *Memórias* from the journal's beginning until 1956 (the end of its translation era) are micro-analyzed in order to map the networks of people and places they cite, demonstrating the changing strength and breadth of their composition over time.

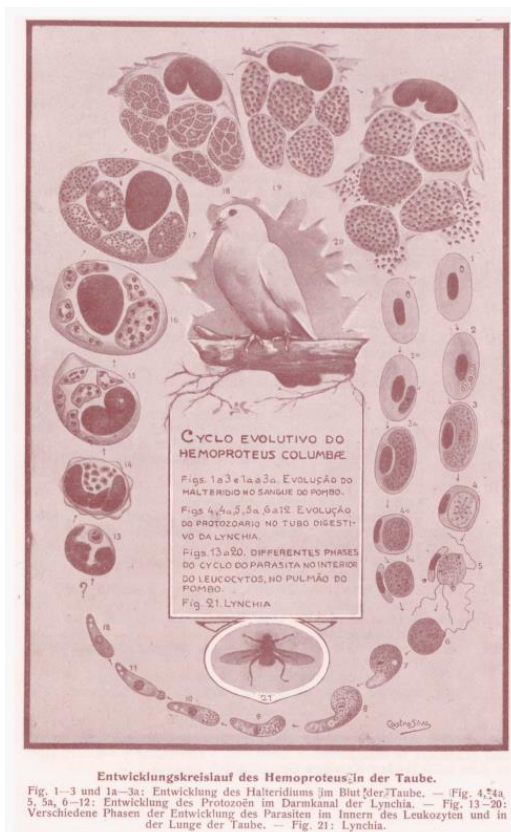
A second movement in this chapter will return to the initially posed questions about *Memórias*' language practice compared to that of other journals. This comparison will be carried out on a national level (3.5) by analyzing the language practice of a cohort of nine important Brazilian scientific, biomedical and/or public health journals. On the international level (3.6), language practice in the *Bulletin of the World Health Organization* and the *Annales de l'Institut Pasteur* will be examined, followed by a review of the Tropical Medicine Institute of Antwerp's periodical catalog, which will highlight the frequency level of multilingualism in Tropical Medicine-related journals internationally during the establishment and consolidation of *Memórias*.

The catalog will be further used for discussion of the changing nomenclature of the discipline, which serves as a point of entry into its political and economic motivations that, in turn, go far in explaining the observed international language practice. This discussion will be continued in two case studies of extra-institutional publications by Oswaldo Cruz and Heraclides de Souza-Araujo, which demonstrate how questions of power and empire have shaped the field of Tropical Medicine and the language used to conduct it.

### 3.1 CONSUMPTION: EARLY IOC JOURNAL SUBSCRIPTIONS

As briefly mentioned in 2.7.2, a small, undated carefully illustrated German-language booklet called *Institut "Oswaldo Cruz"*

was obtained for analysis<sup>68</sup> (see Figure [1] below). This booklet, due both to the endpoint of the IOC publications it lists and to external card catalog data<sup>69</sup>, seems to have been produced expressly for the Fifth International Exposition of Hygiene and Demography, which was held in Dresden in 1911.



**Figure 3.1:** *Institut „Oswaldo Cruz“*: illustration (p. 44) of the exquisite detail and care in presenting the Institute’s work<sup>70</sup>

<sup>68</sup> From an Austrian bookshop in 2014; the volume was unknown to librarians in the rare books collection at Fiocruz, so this may be the first modern analysis of its content.

<sup>69</sup> [http://www.worldcat.org/title/institut-oswaldo-cruz-manguinhos-rio-de-janeiro-brazil-internationale-hygiene-ausstellung-dresden-1911/oclc/612057431&referer=brief\\_results](http://www.worldcat.org/title/institut-oswaldo-cruz-manguinhos-rio-de-janeiro-brazil-internationale-hygiene-ausstellung-dresden-1911/oclc/612057431&referer=brief_results)

<sup>70</sup> Note the untranslated figure caption, which further indicates, along with the commentary by Dr. Zilly in 2.7.2, that this booklet was prepared in Portuguese and translated into German.

Thus, the comprehensive booklet has historical importance, since it played some role in the Institute's second international grand prize, this time for its display on American trypanosomiasis, or Chagas disease (UNESCO, 2007, p.10). The outcome of the Dresden propaganda effort was significant:

In 1911, at the Brazilian pavilion of the International Exposition of Hygiene and Demography, staged in Dresden, Germany, Chagas disease was the scope of intense public interest. In 1912, the Brazilian researcher was awarded the Schaudinn Prize for protozoology by the Institute of Maritime and Tropical Diseases in Hamburg. In 1913, he was nominated for the Nobel Prize for Medicine. (KROPF; SÁ, 2009, p.16)

*Institut „Oswaldo Cruz“* is also important because it highlights the interconnection of two essential parameters of the Institute's intellectual economy, production and consumption, in the final two sections of the booklet (pp. 40-48 and 49-62, respectively). Beginning with the 1909 and 1910 volumes of *Memórias*, the first section lists the literature produced by the IOC<sup>71</sup>, while the second is a catalog of its journal collection.<sup>72</sup> Although this list of 634 titles may or may not indicate currently maintained subscriptions to them all, it has nevertheless been documented that the IOC library's holdings underwent a “rapid and violent hypertrophy...in the most varied idioms and subjects” with Cruz' establishment as head of National Department of Public Health in March 1903 (ARAGÃO, 1950, p.15-16, my translation; Rodrigues and Marinho 2009, p. 528, (citing BUSTAMANTE 1958). And this appetite for scientific literature was nothing new; as early as 1900, Cruz was described as “always carrying a voluminous black leather briefcase full of papers and scientific journals under his arm”, in pursuit of “the grandiose project he brought with him from Europe, to found, one day, in Brazil, a great school of experimental Biology and Medicine” (ARAGÃO, 1950, p. 5; 3, respectively, my translation).

From this it seems that clear that, in the outlook of Oswaldo Cruz,

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<sup>71</sup> Entries list title, author, journal name and year, without further information or commentary. journal titles remain untranslated in their original language, while complete bilingual titles are given in separate sections (Portuguese first) in the *Memórias* section.

<sup>72</sup> Sammlung von Zeitschriften der Bibliothek des Institutes

scientific practice was thoroughly intertwined with broad multilingual reading. As will also be discussed in Chapter 4, multilingual skills were actively cultivated as part of the institute's educational structure and organizational culture. Historical context provided in Aragão 1950 indicates that the list of journals in *Institut „Oswaldo Cruz“* was less for ostentation than to demonstrate the curriculum of a central educational component at the Institute, the *Mesa de Quarta-feira*, which was the kernel of what had recently become the Institute's main training/graduate program, called the *Curso de Aplicação* considered to be the first official postgraduate course in Brazil (COURA, 2000, p.9)<sup>73</sup>:

The front part [of the library was] was utilized as a reading room and for weekly meetings in which abstracts from the most interesting articles of recently-arrived journals were discussed. Oswaldo Cruz had the task of marking the most important articles in each journal and designating who was to read each one in order to give a presentation about it in the coming session. He took this opportunity to conform the subjects to the tendencies and predilections that he observed in his disciples. The journals were placed within easy reach of the interested parties in shelves divided into pigeonholes. (ARAGÃO, 1950, p. 16, my translation)<sup>74</sup>

Examination of the journal list, presuming the primary language from the title (and location, where given),<sup>75</sup> indicates that at least seven languages of publication were involved (Figure [1], below).

Considering the language of publication in the first two volumes

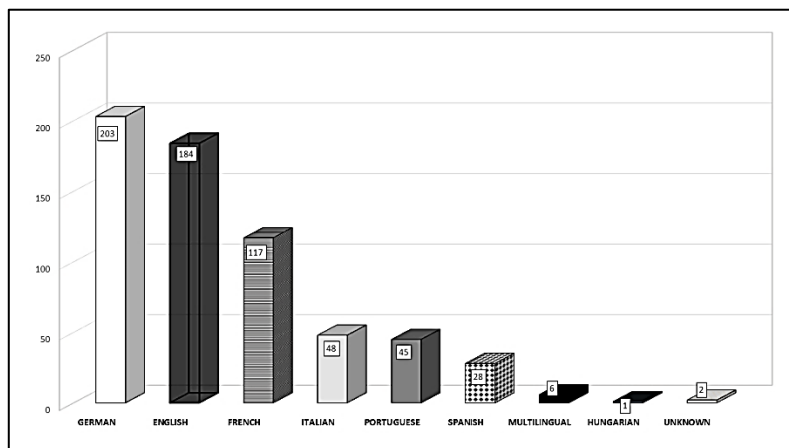
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<sup>73</sup> See Appendix B, Questions 12-15: “O curso de aplicação foi criado em 1907, mas começou a funcionar regularmente em 1909”. See also Aragão (1950, p.21-22).

<sup>74</sup> a parte da frente [da Biblioteca era] utilizada como sala de leitura e de reuniões semanais dos pesquisadores, afim de se analisar e discutirem-se os resumos dos artigos mais interessantes publicados nas revistas recém-chegadas. Tinha OSWALDO CRUZ o trabalho de marcar, em cada revista, as publicações mais importantes assinalando o nome daquele que as deveria ler para resumí-las na sessão a realizar-se, semanalmente. E, neste mister ia também orientando o assunto conforme as tendências e predileções que observava em seus discípulos. As revistas ficavam colocadas ao alcance dos interessados, em prateleiras divididas em escaninhos.

<sup>75</sup> Internet searches at worldcat.org and archive.org confirmed the language/s of ambiguous or Latin titles. The vague, untraceable titles *Ion* or *Janus* were counted as unknown. Much browsing at the Institute of Tropical Medicine Antwerp's extensive bound journal collection indicated that, with few exceptions, the Tropical Medicine journals of this period were indeed monolingual, in either the national or colonial tongue. This point will be taken up in greater detail later in this chapter.

of *Memórias*, it is predictable that the leading language would be German at this point. However, it is interesting to see that German publications eclipse those in English by less than 10%, whereas German journals approach twice the number of those in French, which would seem counterintuitive considering Cruz' connections with the Institut Pasteur and other Paris-based institutes and journals (see 3.2.1 below). It is also telling that Italian, Portuguese and Spanish journals combined are approximately equivalent to the number of French journals, which could warrant four general language categories: German, English, French, and everything else. This fits snugly with the languages of publication of *Memórias* through the end of the Translation Era.<sup>76</sup>



**Figure 3.2:** *Institut „Oswaldo Cruz“* (p. 49-62): language breakdown of the Instituto Oswaldo Cruz' scientific journal collection

Whether or not these numbers are representative of the then-current selection of journals on the market or simply reflect Cruz' scientific taste, although fascinating and pertinent to the English as a lingua franca question, is beyond the scope of this study and cannot be answered here.<sup>77</sup>

Among the Portuguese and Spanish articles, however, it would seem necessary to distinguish between European and New World journals. The Portuguese totals were: Brazil 36 (78.2%) vs. Portugal 10

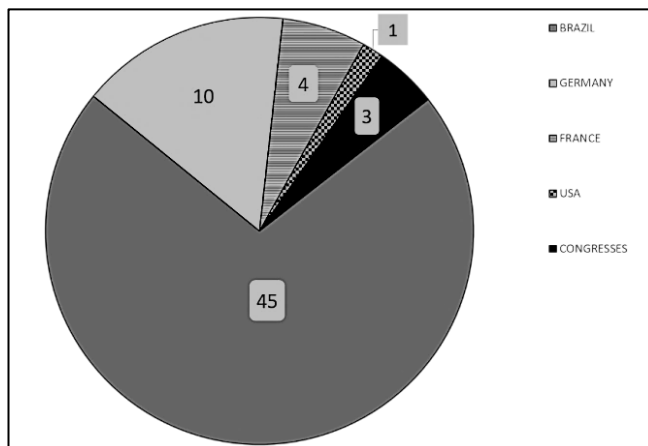
<sup>76</sup> The sole exception is an article in Spanish in 1929.

<sup>77</sup> A first step, however, toward such an answer would be to compare this data with the journal collections at other libraries, such as the catalog of the Institute of Tropical Medicine-Antwerp, etc.



(27.8%)<sup>78</sup>; the Spanish totals were: Latin America 17 (60.7%) vs. Spain 11 (39.3%). Brazilian journals occupied three quarters of the Portuguese-language collection, demonstrating a naturally domestic focus, while Latin American journals were less prominent than their Iberian counterparts, which could mean either, as mentioned above, these numbers simply reflected the available market, or that Spanish journals were acquired with the same approach as those in other colonial languages: gravitating more towards the seat of empire. Although the latter idea might be better supported by drawing the same distinction between English (UK vs. US) and French (France vs. European francophone vs. French empire) journals, as demonstrated below, the fact that IOC authors did not publish a single article in Portugal, Spain or a Latin American neighbor would seem to further reinforce the supposition that the Institute believed real impact for their discoveries could only come through German, English or French channels, an idea which is corroborated by the publication languages of *Memórias* (see also Appendix B: questions 44-46), not to mention the consumption data shown above.

### 3.2 PRODUCTION: EARLY EXTRA-INSTITUTIONAL PUBLICATION



**Figure 3.3:** *Instituío „Oswaldo Cruz“* (p. 45-48): distribution of publications by Instituto Oswaldo Cruz scientists between 1903 and 1911

<sup>78</sup> The Arquivos de Instituto Bacteriológico Camara Pestana, Lisbon, were counted in the multilingual category in Figure [1] above, since they published articles in Portuguese, French and English. but were counted here, nonetheless, for their origin; thus the numeric discrepancy.

The other side of this literary economy leads to the next section featured in *Institut „Oswaldo Cruz“*: publication. Following a list of the contents of *Memórias* in 1909 and 1910 (INSTITUT, p.40-44), a record of external publications by IOC researchers (INSTITUT, 45-48) is presented. However, for 17 of the 32 listed authors there is only a thesis, indicating they were recent IOC graduates (i.e. their listing may have been to showcase the depth of the IOC *Curso de Aplicação*). Only the other 15 (most of whom are listed on page 4 as ‘personnel’) had actually published articles in other journals; of these, only six had published internationally. Thus, by 1911, there was still a heavy trend toward publishing nationally. Figure [1], below, shows that 71% of all non-*MIOC* articles were published in Brazil. Of the 63 total publications, 36 (57.1%) appeared in a single Brazilian journal called *Brasil-Médico* (on whose board Oswaldo Cruz served)<sup>79</sup>. In fact, according to one study, 84% of all production by IOC staff between 1900 and 1917 was published in either *Brasil-Médico* (44%:145 articles) *MIOC*(40%: 132 articles) – the very distant third place was shared *Revista Médica de São Paulo* and *Centralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene*(3.3%: 11 articles) (WELTMAN, 2002, p.172).

Thus, although consumption (i.e. journal subscriptions) was overwhelmingly foreign, production was mostly national at this point, which could be understood in light of the developmental phase of the Institute, i.e. its more urgent need to establish credibility and consolidate a position within Brazilian medical and government circles. However, Aragão relates that by 1907 the Institute’s “future paths had been definitively assured, becoming more and more concrete[...]through innumerable original investigations and practical achievements.” (1950, p. 23 my translation<sup>80</sup>) Regarding the “practical achievements”, he means a list of invitations by various state governments and large infrastructure companies to repeat the famous sanitation campaigns led by Oswaldo Cruz in Santos and Rio de Janeiro or to open local affiliate institutes (ARAGÃO, 1950, p.23). Nevertheless, Aragão goes on to state that, despite the fact that Institute’s fame as a state-of-the-art Experimental Medicine and Hygiene organization already “had spread throughout the world”, it was the International Hygiene Exposition at Berlin that same year that turned the corner for the Institute:

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<sup>79</sup> This journal is further discussed in 3.3.1.

<sup>80</sup>...rumos futuros estavam já definitivamente assegurados, firmando-se cada vez mais, desde então, através de suas inúmeras investigações originais e realizações práticas.

With the brilliant victory achieved at this international congress, in the midst of countries of established civilization and culture, the elevated standards of Brazilian researchers, and above all those of the Master, in the field of Experimental Medicine became patently evident.

Beginning in 1907 Oswaldo began sending researchers from the Institute to Europe and the United States to visit similar institutions for further specialization in subjects of their particular scientific interest[...] (ARAGÃO, 1950,p.24-25)<sup>81</sup>

Aragão then lists the first wave of staff to travel abroad in 1907-08: one to the US, one to France, three to Germany and one to both France and Germany— basically a three-to-one ratio in favor of Germany. And these same general proportions are reflected in the choice of international destination for publishing displayed in Figure [1], although with an even more exaggerated gap between Germany and the US. This was doubtlessly fueled by the network of contacts acquired through inter-institutional exchange, both in sending and receiving personnel.<sup>82</sup>

However, relations with Germany, which seemed a passive audience for confirming Brazil's scientific prestige before the First World War, reversed after the Treaty of Versailles. What had heretofore appeared a goodwill relationship of mutual interchange, became, apparently catalyzed by American, French and British maneuvering to cripple German science through the International Research Council and the Entente Boycott (1919-26), an active policy of *Machtersatz* (power replacement) in which a confederation of the Hamburg School, the Foreign Office and Pharmaceutical Industry giants such as Bayer and Merck actively sought to form 'soft colonies' in Latin America to replace losses in Africa from the war. The journals *Revista*

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<sup>81</sup> Com esta brilhante vitória lograda no seio de um congresso internacional integrado por países de velha civilização e cultura, patenteava-se ao mundo o elevado padrão dos pesquisadores brasileiros e acima de tudo do Mestre, no domínio da Medicina Experimental. A partir de 1907 começou OSWALDO a enviar os pesquisadores do Instituto à Europa e aos Estados Unidos para visitarem as instituições congêneres e se aperfeiçoarem em suas especializações nos assuntos do particular interesse científico de cada um....

<sup>82</sup> By the time of the Dresden Exhibition in 1911, the following German-based personnel had worked at the IOC: Gustav Giemsa of Hamburg (July to December 1908), Stanislas von Prowazek of Hamburg (July 1908 to February 1909) and Max Hartmann of Berlin (May to November 1909). (WELTMAN, 2002, p.163)

*Médica de Hamburgo*, *Revista Médica Germano-Ibero-Americana*, *Revista Terapêutica* and *O Farmacêutico Brasileiro* are artifacts of this policy, also formed, presumably, to repel similar American influence advanced through the Pan-American Sanitary Bureau,<sup>83</sup> the Rockefeller Foundation and, perhaps, that of the Pasteur Institutes in São Paulo and Rio de Janeiro. (see SÁ, 2009; SÁ; SILVA, 2010; SILVA, 2013; WULF, 2013; ROLIM; SÁ, 2013; TEXEIRA, 1995)

Nonetheless, despite the eventual effects or counter-effects that the Entente Boycott or German scientific-industrial colonization may have had on IOC-German relations later in the interwar period, and thus on language in *Memórias* and IOC publication abroad, what is clear is that Cruz' success in Berlin had very serious consequences at home. (ARAGÃO, 1950, p. 26-27)

After the resounding success of Berlin, in 1907, which brilliantly consecrated his work and covered him with laurels, Oswaldo, returning to Rio, was received with extraordinary manifestations of appreciation by the Government and the people. ( ARAGÃO, 1950, p. 26<sup>84</sup>)

Aragão's presentiment after Berlin was that: "In spite of everything, we had the sensation that, sooner or later, our tomorrow so far uncertain, would become stable..." (ARAGÃO, 1950, p. 26, my translation<sup>85</sup>). And he was right, for by December 1907, the Instituto Soroterápico Federal was officially recognized by congressional law, having its name changed to the Instituto de Medicina Experimental de Manguinhos, which lasted only until the following March when its internal bylaws were finalized and it was again renamed the Instituto Oswaldo Cruz and, very importantly, was established as an independent entity from the Department of Public Health, answering directly to the Ministry of Justice and Internal Affairs. ( ARAGÃO, 1950, p. 26-27)

Such a weighty Brazilian outcome for the Institute's foreign exploits should also figure in an interpretation of their publication habits, i.e. that the foreign, although prestigious, was immensely

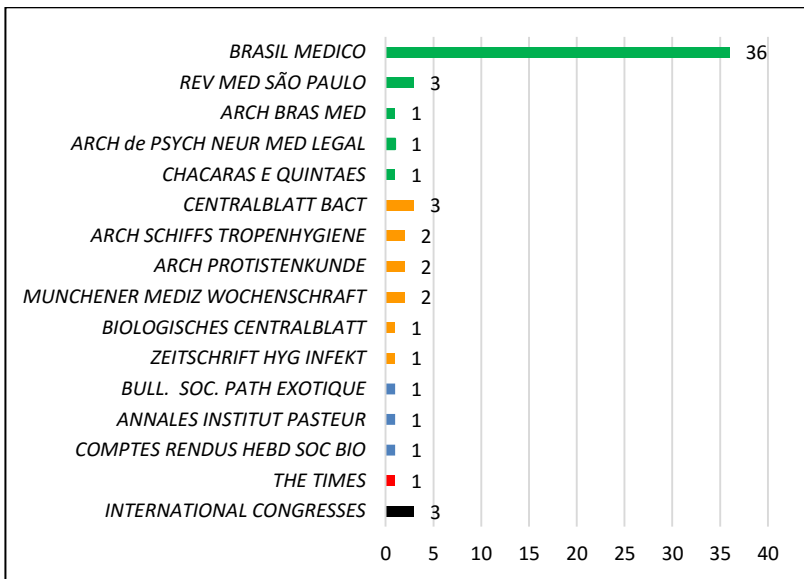
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<sup>83</sup> Founded in 1902, later becoming the Pan-American Health Organization.

<sup>84</sup> Após o retumbante sucesso de Berlim, em 1907, que consagrou brilhantemente seu trabalho e cobriu-o de louros, OSWALDO, voltando ao Rio, foi recebido com extraordinárias manifestações de apreço por parte do Governo e do povo.

<sup>85</sup> Apesar de tudo, tivemos a sensação de que, com a vitória alcançada em Berlim, mais dia menos dia, o nosso amanhã tão incerto até então, tornar-se-ia estável...

outweighed by, and ultimately fed, domestic considerations, which is not at all unlike the general paradigm of colonialism. On the other hand, if a single journal, *Brasil-Medico*, is factored out, and perhaps there is good reason it should be considered separately from all other journals (see 3.3.1), the field is then completely levelled, with no single journal garnering more than three publications. In fact, by this measure the German articles outweigh the Brazilians ones by almost two to one and there are three foreign publications for each domestic one (see Figure 3.4 below).



**Figure 3.4:** *Institut., Oswaldo Cruz*“ (p. 45-48): number of articles per journal authored by Instituto Oswaldo Cruz scientists between 1903 and 1911

*Legend: Brazilian journals are green, German are orange, French are blue, English are red.*

### 3.3 PRODUCTION ON AN INDIVIDUAL LEVEL

Since the institutional publication trends seen above could either be corroborated or confounded by activity on an individual level, it is important to trace the careers of a sample of IOC scientists. Historians have produced complete collected volumes, often called *Opera Omnia*, of several early key IOC figures: those that could be obtained included

the works of Oswaldo Cruz (1872-1917), Gaspar Vianna (1885-1914), Carlos Chagas (1879- 1934), Adolpho Lutz (1855-1940) and Lauro Travassos (1890-1970), which provide a continuous thread of data on individual production from the beginning of the Institute to within a few years of the re-inauguration and policy shift in 1980.

### 3.3.1 Oswaldo Cruz

The collected works of Cruz (BUSTAMANTE, 1972) contain 34 publications<sup>86</sup> produced between 1891-1915, all monolingual, of which eight were in foreign languages (six in French and one each in German and English). The first was an 1893 twelve-page booklet in French printed in Rio de Janeiro, whereas the next six were produced between 1897 and 1899, while Cruz was in Paris studying principally at the Institut Pasteur (see Table 3.1 below). The final foreign-language work, in English, was a brief chapter in a section of 21 “special contributors” to a large 1910 textbook on *The Prevention of Malaria* by Sir Ronald Ross of the Liverpool School of Tropical Medicine.<sup>87</sup> Cruz never published in *Memórias*;

Unlike what happens nowadays in these trivial “institutional” journals, Oswaldo Cruz never took advantage of the pages of the periodical that he founded and directed to promote himself, not even signing articles as a “collaborator”. Once again we refer to the deposition of Ezequiel Dias: “[...] this extraordinary man, as soon as he had raised up the first class of disciples to a sufficient level in laboratory matters, set about to found a magnificent journal; but since this day never again did an original work signed in his name come to light”. (LEMONS, 1993, p. 163; quoting CHAGAS, 1922, p.19, my translation<sup>88</sup>)

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<sup>86</sup> ...plus two foreign publications translated into Portuguese and reprinted in Brazil.

<sup>87</sup> Further discussed in Chapter Four.

<sup>88</sup> Ao contrário do que acontece hoje em dia com revistas “institucionais” de caráter pouco sério, Oswaldo Cruz jamais se valeu das páginas do periódico que fundou e dirigiu para se autopromover, nem mesmo assinando artigos na categoria de “colaborador”. Ouçamos de novo o depoimento de Ezequiel Dias: “[...] esse homem extraordinário, assim que conseguiu a primeira turma de discípulos suficientemente versados em assuntos de laboratório, tratou de fundar uma revista magnífica; mas desde esse dia nunca mais veio à luz um trabalho original firmado por seu nome”.

however, he was a frequent contributor to *Brasil-Medico* (of which he also sat on the editorial board), with 16 articles, almost half his output. After returning from Paris, with the exception of the above-mentioned English chapter, his own publications focused exclusively homeward.

**Table 3.1:** *Oswaldo Cruz*’ production while in Paris 1897-99

YEAR	TITLE	LANG.	JOURNAL
1897	Delitti negli animali.	FR	<i>Archivio di Psichiatria, Scienze Penali ed Antropol Criminale</i> (Lembrose) (Torino) 18(2/3):301
1898	Ein einfacher Waschapparat für mikroskopische Zwecke.	GR	<i>Zeits. Wiss. Mikrosk. Technik</i> 15:29-30
1898	Étude toxicologic de la ricini.	FR	<i>Ann. Hyg. Publ. Med. Leg.</i> 2:344-59
1898	Études sur la recherche de l’empoisonnement par le gaz d’éclairage.	FR	<i>Ann. Hyg. Publ. Med. Leg.</i> 1:385-94
1898	La recherche du sperme par la réaction de Florence.	FR	<i>Ann. Hyg. Publ. Med. Leg.</i> 1:158-64  <i>Brasil-Medico</i> (translation by Dr. Carlos Seidl) 12(13):110-12
1898	Uma visita à seção de preparo dos soros do Instituto Pasteur de Paris.	FR	<i>Brasil-Medico</i> 12(30):265-67; 12(31):274-76; 12(32):281-84
1899	Les altérations histologiques dans l’empoisonnement pa la ricine.	FR	<i>Arch. Med. Exp.</i> 11(3):238-252

Of note in this list is, first, that the two-paragraph 1897 article in the Torino-based *Archivio di Psichiatria* was penned in French (signed from Rio de Janeiro, December 1896). From this it would be reasonable to assume that Cruz was conversant in French before leaving for Paris, a trend during this epoch that Jose Coura also corroborated: “Almost every Brazilian intellectual spoke French” (Appendix B:

questions 15-16, my translation<sup>89</sup>). Was this Italian journal international or multilingual? Not particularly. The contents of the hefty Volume XIII (1897) were checked, and of 216 texts, including articles, news and reviews, only five were in French (and one other mostly in French), with no other languages represented except in book titles. One of four *direttori*, two of eight *redattori* and twelve of the 100 *collaboratori* were non-Italian.<sup>90</sup> However, this does show that even in a heavily national journal from an imperial power, French was accepted, if only superficially, as a valid currency. Second, Cruz made a point of publishing in a German journal, whether by translator or otherwise could not be determined; however this piece, like his 1893 booklet in French, dealt with a new apparatus he had developed for laboratory procedures, i.e. with the objective of publicizing new developments for the general (universal) improvement of scientific technique. Finally, it is also of note that while in Paris, Cruz made sure to report back home with a three-part series in *Brasil-Medico* (the Rio de Janeiro medical news outlet on whose board he participated) about the technological advances he was witnessing at the Institute Pasteur – tellingly, the serum production facilities. Thus, it is clear in hindsight that, even while creating a foothold abroad, his motives were national in nature.

### 3.3.2 Gaspar Vianna

In his short career (1908-1914), Gaspar Vianna produced 23 works (collected in Falcão 1962), four of which were bilingual Portuguese/German articles appearing in *Memórias* between 1911-14. The other 19 works were published in Portuguese only, nine of which appeared in *Brasil-Medico* and the rest, apart from three monographs, in five other Brazilian journals. Despite the fact that he published nothing abroad, upon his sudden, accidental death by septic infection from an autopsy accident in 1914, he was honored with obituary pieces in both *Dermatologische Wochenschrift* and *Muenchener Medizinische Wochenschrift*, the latter by Hermann Dürck, professor at the University of Munich, who had worked at the IOC in 1912 (WELTMANN, 2002, p.163). This fact testifies to both the strength of then-current scientific ties between Brazil and Germany and the importance of his discoveries, not to mention the potent effect of translation on the circulation of knowledge within the field of Tropical Medicine, especially in the case

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<sup>89</sup> O francês quase todo brasileiro intelectual falava.

<sup>90</sup> <https://archive.org/stream/archivodiopsich00unkngoog#page/n6/mode/2up>



of *Memórias*. However, it does not appear that such circulation reached the general populace in Britain, at least, since despite “discovering the specific action of antimony against leishmaniosis, [thus becoming] one of the greatest benefactors of mankind”, Vianna was not named in a British public survey about this very question, although (European) foreigners such as Pasteur, Curie and Roentgen were among the top figures listed (CLARK 1938, in FALCÃO 1972, p. 38-39)<sup>91</sup>.

### 3.3.3 Carlos Chagas

According to the 1959 IOC bio-bibliography of Chagas<sup>92</sup>, of his 60 journal articles, 39 were published in Brazil (*Brasil-Medico*, 17; *Memórias*, 10). The most frequent foreign journals were *Bulletin de la Société de Pathologie Exotique* and *Comptes Rendus de la Société de Biologie*, in which he published three articles each. Among his *Memórias* articles, five were in German and two were in English; however, his German articles (all bilingual) were produced in the period in which von Prowazek and company were also publishing in *Memórias* (1909-1911). The two English (also bilingual) articles were produced after the war (1922). Also of interest is that his only two *Memórias* articles published during the war (1916) were in Portuguese only. Table 3.2 follows below with complete language and translation data. The publications were divided into two periods at 1916 for comparison with changes observed in Lutz’ oeuvre as well as in *Memórias*.

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<sup>91</sup> Continuing this quote: “It must also be noted that, 5 years after Gaspar Vianna’s discovery, 2 English physicians – McDonagh and Christopherson – verified that antimony preparations are also active against one of the most dreadful maladies infesting Egypt, that is, the schistosomosis, or bilharziosis. For this reason, in the British colonies of Africa and Asia antimony preparations are the most consumed of all remedies. As a matter of fact, antimony is the medicine having the greatest consumption, second only to arsenic all over the world.”

<sup>92</sup> Carlos Chagas (1879-1934), Bio-bibliografia. Rio de Janeiro: Instituto Oswaldo Cruz, 1959. A list of Chagas’ publications by journal is also provided in Lemos 1993:162, who reports that he also published works, some of scientific worth, in daily newspapers.

**Table 3.2:** Scientific production of Carlos Chagas by period according to language

Language	1903-1915(13y)		1916-1935(20y)		Total
	Originals	Translations	Originals	Translations	
Portuguese	30	0	20	0	50
German	5	6	5	0	16
French	3	0	8	0	11
English	0	1	3	3	7
Spanish	0	0	1	2	3
Total	38	7	37	5	

There were more total foreign language than Portuguese works after 1916, compared to a two-to-one Portuguese/foreign ratio in the early period. There were no French translations and all French works were published abroad; the first and last French works were 1909 and 1929, respectively. Similarly, the first and last German works were published in 1908 and 1929, respectively. All 10 original German works were published abroad and all six German translations were published in Brazil; There were more English translations than original works, indicating that they were not tailor-made for a specific context like the French works were; i.e. he had apparently little connection with specific English-language journals. The first English work appeared in 1913 and the last 1922, beginning later and ceasing earlier than FR or GR. One English translation was published abroad (New Orleans), as was one original article (Chicago); the other two apparently original works, although missing reference data, appear to have been the type of booklets produced at the IOC, perhaps for distribution on trips such as that of Figure [1] below. Spanish began in 1916 with two translations published in Argentina (one by Salvador Mazza, who would go on to rehabilitate Chagas' controversial image in Argentina by confirming the existence of Chagas' disease there) and ended with an original article published in the *Revista Espanola de Medicina y Cirugia* (Barcelona). Finally, it is of note that the new world, represented by English and Spanish, basically does not exist in his oeuvre before the First World War. So before this event, science meant Europe, and Europe meant France and Germany, which meant, in large part, the Pasteur and Hamburg institutes, respectively.

When asked about Chagas' German publications, Dr. Coura replied that:

Regarding Chagas' German publications, he couldn't write in German, but his son, Evandro, knew German well, wrote it well. He was educated in Germany [...] Chagas spoke French; I don't know if he wrote it too, but he must have been able to. Evandro spoke French, English, German— he was a polyglot. But then, with the passing of time, it became a question of convenience... you can still find here today [at the IOC] many people who speak French and English. But very few who speak German. (Appendix B: question 19, my translation<sup>93</sup>)

This response provides some valuable information: principally, that Chagas felt it immensely important to ensure his children were raised, not just to be scientists, but multilingual scientists. Carlos Chagas Jr. reports that his father brought over a nanny from Germany, who spoke no Portuguese, to make the language part of daily family life; the result was that Carlos Jr. spoke German before he could speak Portuguese (FUNDAÇÃO GETULIO VARGAS, 1977, p.7, see 3.4.2). The following figure, reproduced in Chagas Jr.'s *Meu Pai* (CHAGAS FILHO, 1993, p. 253), further confirms this idea: it shows the entire Chagas family (center) returning from a trip to the United States in the 1920s, surrounded by other fellow-travelers from the Institute, including Lutz (to Chagas' right), Bento Oswaldo Cruz (back row, third from right) and what appears to be Souza-Araujo (on Chagas' left).

On this same page, Chagas, Jr. recounts his father's international travel in later life, indicating that his main destination was Europe, principally in function of his work with the Hygiene Committee of the League of Nations. His work there was "marked by many proposals, which were always received with interest and unanimously accepted" (CHAGAS, 1993, p. 253, my translation<sup>94</sup>)

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<sup>93</sup> No caso de o Chagas ter publicado em alemão, ele não escrevia em alemão, mas o filho dele, o Evandro, conhecia bem o alemão, escrevia bem. Ele foi educado na Alemanha. Então essa é uma suspeita minha, porque eu não conheci o Chagas. Mas suspeito que ele tenha escrito em português e o Evandro tenha passado para o alemão. O Chagas falava francês, não sei se escrevia, mas devia escrever. O Evandro falava francês, inglês, alemão, era poliglota. Mas aí, com o passar do tempo, por questão de facilidade... você encontra ainda hoje muita gente aqui que fala francês e inglês. Alemão são pouquíssimos.

<sup>94</sup> assinalada por muitas intervenções, sempre recebidas com interesse e aceitas por unanimidade.



**Figure 3.5:** The Chagas family (center) disembarking at Rio de Janeiro from a trip to the USA in the 1920s (Reproduced from Chagas Jr. 1993:253)

It would be difficult to imagine such strenuous committee work carried out through interpreters, and it certainly was not done with Portuguese as a *lingua franca*<sup>95</sup>, which brings the case back to proficiency in French (documented above), English, of which some level is implicit in this figure, or German, which he was getting at home and, probably, with Hartmann, Giemsa and Prowazek at the IOC from 1908-1912. Chagas Jr. also relates that his father took advantage of his trips to Geneva to participate in conferences in Paris, Madrid, Seville, Carlsbad, Rome and Lisbon.

Therefore, in such a prolonged bustle of high-level international activity, the pressing need for mastery of more than just Portuguese must have been all too evident to the director of the IOC, who secured such an education for his sons, despite the fact that foreign language in *Memórias* was in rapid decline by the end of his tenure.

With regard to this decline, another interesting feature of Dr. Coura's reply (i.e. Appendix B: question 19) was the role of accommodation over time regarding multilingualism, i.e. in saying "But

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<sup>95</sup> Which Dr. Coura also describes as "uma lingua pouco falada no exterior" ("a language spoken little abroad" Appendix B: question 7)

then, with the passing of time, it became a question of convenience...”, he seems to insinuate that the level of effort required to maintain skills in multiple languages in succeeding generations of researchers simply could not be sustained. Motivation towards multiple centers seems to have been lost somewhere along the way, a phenomenon that he calls “desligamento político” – the opposite of which must have, earlier, contributed to the elimination of German during the First World War and its weak, short-lived recovery afterwards. (Appendix B: questions 23-24 and 19, respectively)<sup>96</sup>

### 3.3.4 Adolpho Lutz

As mentioned previously in sections 2.7.2 and 2.7.3, Lutz was a prolific contributor to *Memórias* from its beginnings, and this contribution was German-focused until the First World War. However, after 1916, when his German publications abruptly ceased until the end of the war, his production followed a permanent trend toward English and French. A complete view of his opus was obtained from information provided in the *Memórias* bio-bibliography of Lutz (1956, p. 447-487) and Benchimol and Sá's (2004) *Adolpho Lutz – Obra Completa*. Although from a career standpoint, the date he began working at the Institute (1908), might have seemed a better dividing point, due to the sharp linguistic changes during the First World War, the cutoff date was set at 1916. The production in these two stages of his 62-year career is outlined below in Table [1], while complete data is available in Appendix D. For a visual impression of these data as percentages, they have also been arranged in pie charts (Figure 3.3, below).

Several interesting features stand out in this data. Beginning with the least frequent language, Italian (one translation each in 1903 and 1907), which although having ceased before the war did not resurface afterwards. The distancing from Italian journals might also be compared with the fact that Lutz published nothing in Switzerland after 1883, shortly after his return from Europe to Brazil. Thus, after the Italian translations and a paper published in Paris from a Brazilian conference

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<sup>96</sup> Another example of what might be a more generalized phenomenon can be found among US presidents: Until Chester A. Arthur (1881-85), i.e. of the first 21 presidents, only eight did not achieve “fluency” in at least one other language, with 11 fluent in Latin and another eight in Greek. The final president to be considered fluent in a foreign language was Franklin D. Roosevelt (1933-45), who spoke German and French, as did his distant cousin Theodore Roosevelt (1901-1909), with whom Oswaldo Cruz had business on more than one occasion. [https://en.wikipedia.org/wiki/List\\_of\\_multilingual\\_presidents\\_of\\_the\\_United\\_States](https://en.wikipedia.org/wiki/List_of_multilingual_presidents_of_the_United_States)

in 1907, there would seem to have been a shelving of all but German outlets in Europe before the war.

**Table 3.3:** Adolpho Lutz' production by language in the former and latter stages of his career

LANGUAGE	PERIOD				Total
	1879-1915(37y)		1916-1940(25y)		
	Originals	Trans.	Originals	Trans.	
Portuguese	59	2	59		118[+2tr]
German	49	21	6	12	55[+33tr]
English	4		6	20	10 [+20tr]
French	1		15	2	16 [+2tr]
Italian		2			[2tr]
Spanish			2		2
Total	113 <sup>97</sup>	25	88	34	201 [+59tr]

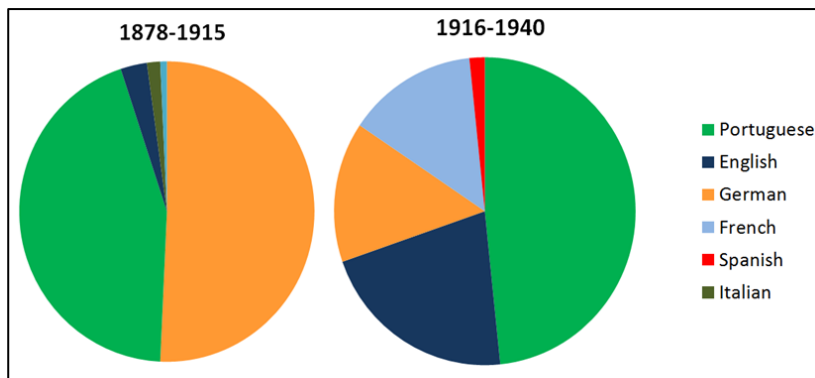
Unmarked numbers represent original articles;[tr] represents translated versions of articles published in other languages; y = years.<sup>98</sup>

After the war, however, Spanish in the form of three Latin-American publications, replaced Italian: a 1921 paper given at dermatology conference in Montevideo, which was written (and presumably given) in Portuguese, a 1922 article on leprosy published in Argentina and reprinted in Venezuela and a 1928 133-page monograph on Venezuelan zoology and parasitology printed in Rio de Janeiro and reissued by the Universidad Central de Venezuela. Whether or not he wrote the monograph in Spanish or had it translated or revised could not be determined, although there is circumstantial evidence that he had attained a level of proficiency in Spanish, since, as will be discussed below in 3.3, his collected correspondence includes 169 letters in Spanish, not to mention another 30 in Italian. These languages remained, nonetheless, in the background, as was previously seen in the

<sup>97</sup> This number could be as high as 144, depending on the criteria used to distinguish a separate article: a 22-part series in *Brasil-Medico* in 1887-88 was counted as one since there was a single title (following Anon. 1956); a six-part series in German in 1888 was counted separately because each piece had its own title; a 1904 Portuguese article presented in two sections under one title within the same issue was counted as one; a 12-part 1905 Portuguese series in different issues, again with a single title, was counted as one (following Anon. 1956). Abstracts of an article were frequently published in several different journals in different countries, but these were not considered.

<sup>98</sup> If an original bilingual article was published in Brazil, Portuguese was counted as the source language. The many reprints with no new translation (i.e. in another Brazilian journal) were not considered.

Institute journal collection in *Institut „Oswaldo Cruz“* (3.1). Also of interest is one of his final articles, from 1939, published in Osaka in English.



**Figure 3.6:** Adolpho Lutz'early and late career production according to language

The most dramatic sociolinguistic shift in his career, however, was the movement away from German and towards French and English after the war. These latter two languages, especially French, were limited –almost nonexistent – before the war. Here it must be pointed out that although the original publications in French (the most of any language after Portuguese) were centered in Paris, English was synonymous with neither Britain nor the US, since there was only one publication in each. The vast majority of English existed as translations, with 15 of 29 published in *Memórias*. Therefore, as seen above in the case of the 1939 Japanese article (written while the Second World War was underway), English may have already been aggregating broader purpose as a lingua franca of science, at least as a contender among the “big three” colonial languages.

Despite the gravitation toward Paris and nationless English, German did not disappear altogether. There were only two stretches where he published nothing in German for three consecutive years (1916-19 & 1925-27), although there had been a six-year period with no German before the war (1895-1900). German, however, like English, appeared much more as translation, i.e. the publications were ‘copied’ reports of Brazilian activity rather than what could be seen as directly

addressed calls for response and collaboration, as in the case of the original articles published in Parisian journals.

And on a final note, Lutz' 1881 thesis, published in German in Bern as well as in Portuguese in Rio de Janeiro, was, after all, on the medicinal properties of a South American plant (Benchimol & Sá 2004:12-13). Thus Lutz can be seen reflecting a similar national purpose and scope as that of Oswaldo Cruz, although his parentage, education in Europe and facility with languages put him in a significantly better position to expand the sphere of his network to an international level, as well as to maintain and direct it where he wished. As an individual author, he also reflected a general trend away from German and toward English; however, his great influence at the Institute may also to some degree have been driving this trend. It is at this interface between individual actors and corporate action that the borderlines of community are most clearly seen, although distinguishing which is driving which is more difficult to grasp.

### 3.3.5 Lauro Travassos

**Table 3.4:** Lauro Travassos' production according to language in former and latter stages of his career

LANGUAGE	PERIOD				Total
	1913-1933		1934-1971		
	Originals	Trans.	Originals	Trans.	
Portuguese	168		236		404
French	33	5	2		40
German		8	0		8
English		1	0		1
Italian	1		0		1
Total	202	14	238		454

*[tr]* = quantity of this total that were translated versions, i.e. not original articles.

Based on the bibliographical compilation by Dias et al. (1990) and the *Memórias* corpus, an impressive total of 420 articles in 45 journals (9 foreign) and 19 monographs were published by Travassos between 1913 and 1971— a 59 year career almost completely spanning both *Memórias'* translation era and its English-only period. As previously discussed in section 2.7.1, Travassos' regular contribution to French (or any foreign) journals ended after 1933. Thus that year was



used as a cutoff point to form two periods of 21 and 38 years, respectively, within his career. The essentials of his linguistic production are presented in Table 3.4 below; full data is available in Appendix E.

These data show an even more dramatic shift than those in the career of Adolpho Lutz, away not only from German, but all foreign language – as if a switch were suddenly shut off in 1934. Of course, without further biographical research, any explanatory attempts would be pure speculation. However, international political events such as the First or Second World War can easily be ruled out. National political events, such as the rise of the ultra-national Vargas dictatorship in 1930, however, may have had some chilling effect on foreign interchange. Dr. Coura reports, however, that Vargas was no frequent visitor to the Institute and that there was no censorship in *Memórias* during this period (see Appendix B: questions 19-24).

Nevertheless, translations dropped to under 40% of total annual production beginning in 1930, which coincides with the beginning of the Vargas dictatorship (1930-1945). They then fell to less than 5% in three of the following years and to 0% in six more by the time the regime ended in 1945. It is thus important to point out the domestic dimension to the journal's linguistic isolation. Censorship in Vargas' *Estado Novo* was serious; a number of authors were imprisoned and the children's books of Monteiro Lobato, an ardent supporter of the Institute, were arbitrarily burned (HALLEWELL, 2005, p.457).

Thus it is reasonable to assume that reluctance to introduce foreign material or the production of material for foreign consumption might have become high. However, the Institute prospered, relatively speaking, under this regime due to the Second World War due to the high demand for commodities such as plasma and the development of antibiotics (ARAÚJO-JORGE; SANTOS-BARBOSA; LOURENÇO-DE-OLIVEIRA, 2012, p. 36). Nevertheless, closer alignment with the government also steered the Institute back toward industrialized production and away from research in areas such as Medical Entomology and Zoology (ARAÚJO-JORGE; SANTOS-BARBOSA; LOURENÇO-DE-OLIVEIRA, 2012, p. 36). Amid the drop in translation under Vargas, the relative presence of English grew; the number of monolingual English articles was four times that of German and more than eight times that of French. Nevertheless, these figures pale in comparison to those of Portuguese and fall far below the level of foreign language published until 1930.

Moreover, Travassos' 1934 "switch-off" does coincide with a telling date for the Institute – i.e. the death of Carlos Chagas, who had

run into a very serious conflict with the Vargas regime, to the effect that he was obliged to step down from his position as head of the National Department of Public Health and was almost replaced by an outsider as Director of the Instituto Oswaldo Cruz, as narrated by Aragão (1953, p. 2; 9). Thus, Travassos' radical shift may have been due to much more than a simple loss of translators, for example, especially considering that Adolpho Lutz was still at the Institute until his death in 1940. The fact that foreign language was also drastically curtailed in *Memórias*, leading to a virtual Portuguese-only period, demonstrates that to a greater or lesser degree, the same wave that swept over Travassos swept over the Institute's policy and culture at large.

Although it may be an exaggeration to use Travassos' production as a general metaphor for IOC production, he nevertheless personifies in the strongest possible terms, the break with foreign language and translation generally seen in *Memórias* during this period. He "came back to earth", as it were, in the mid-thirties, dispensing with the overtures he had previously made to Europe.

### 3.3.6 Summary of individual author production and further notes

Following these five career trajectories beyond the scope of the *Memórias* language data provides further contextual windows into the Institute's culture over time. It is apparent that they confirm rather than confound the language trends, both for foreign language in general and the individual foreign languages seen in the journal. Although not included in this analysis, it should also be reiterated that a single individual, Rudolf Barth, authored 15 of the 23 German translations from 1930 to 1956 (i.e. until the end of the translation era) and 15 of the 18 monolingual German articles from 1930 to 1971, i.e. until the end of German in the journal. Thus, just two men, Lutz and Barth, produced 46.4% of all German articles to appear in *Memórias* (2.7.2), demonstrating pointedly that foreign language, especially in this case, was less generally systematized within Institute culture than embodied by a few individuals: when these loci disappeared, to a greater or lesser extent, so did a language, at least until the language policy was officially recast after 1980.

On a further note, Wladimir Lobato Paraense was another Institute figure who, over his long career, published prolifically outside *Memórias*: in fact, he published nothing in it at all from 1957-79 until his death in 2012 at age 97 (UNICAMP, 2012); his vast oeuvre, unexamined here, could also provide interesting data and controvert to some degree

the findings regarding these general trends.

Finally, since the post-1980 changes have been mentioned, perhaps this is a good place to point out what may be an association between the Institute's overall physical/ organizational conditions and its language policy/culture. Decadence, neglect, underpayment and disorganization are some of the adjectives Dr. Coura used to describe the fragility of what had become of the Institute when he arrived in 1979. Due to the richness of detail in the narrative and critical nature of this specific moment in the life of the Institute, the full dialog from the interview (Appendix B: questions 8 and 2-4) will be translated and reproduced below:

8) WFH: When you became editor-in-chief, publication of the journal had stopped for three years. Could you tell me what happened?

COURA: It was like this: it was in a state of decadence, very poor quality. I remember that when I arrived the president had been arguing with the vice president because he wanted to just print the journal willy-nilly, without any editing whatsoever. I arrived in '79 and had a pile of journals to distribute, but when I looked at them, I said to throw them all out, it was all wrong. At that point there had already been two years of interruption. So I created a 'scientific council' and one of the members said "Don't even think about trying to catch up on the issues in arrears. If the last volume was 78, start now with 79. Forget the backlog." And that's what I did. So we started again with four issues per year, then moved up to six, and now the goal is to make the journal monthly, since there is so much work being submitted.

2) WFH: When I arrived [at the sprawling Fiocruz campus today]I couldn't get over the fact that all this was about to be closed. I remember your article saying that when you arrived here in 1970 that Fiocruz "was a fiction" and that the Institute was in a pathetic condition.

COURA: That's true,because it had a golden age that went through the '30s until the beginning of the '40s. Then politics began to penetrate, leading to a state of great decadence.

3) WFH: Because of Vargas?

COURA: During the military government, a long period of dictatorship in Brazil from '64 to '85.

But this dictatorship did some good things. One of them was to create the Oswaldo Cruz Foundation [Fiocruz]. It created the foundation, joining a series of institutions in what appeared would be a catastrophe, but it worked out. And later, in a more 'open' phase of the military government, as they called it, I was invited to suggest new organizational ideas, because it was disorganized. So I asked them to let me bring on an economist and a personnel expert, and we worked out a plan and came and presented it to the president of Fiocruz. I said: "You've got two options: one, improve the salaries here for this plan to work or, two, close the place and sell the land." Because I was nuts. (chuckling) Researcher earned 100 dollars a month; they would come here, eat lunch free and then go to another lab to make money. So they invited me to be president of Fiocruz, but I said "No, I don't have any administrative experience"; so they put an economist in charge. He greatly improved the salaries, but the scientific context didn't progress because he had no experience. In '79 I was invited to be Vice-President of Research, and the president was another businessman. But it was good because he gave me total liberty regarding research. They nominated a new Minister of Health and he asked me: "Professor, what can we do to make Manguinhos like it used to be?" I said "It's very easy, Minister." I was 40 years old then, and thought things were easy. "Let's get 10 good heads, give them contracts, and reopen the postgraduate course."

4) WFH: Had the course been closed for long?

COURA: The courses were closed, I think, in '69 because the director here, Rocha Lagoa, said there were still many communists. (chuckling) So the Minister said: "Go get your good heads and I'll hire them." And I found 17 people, some who were retiring, and I reopened the postgraduate courses.

From this it is evident that *Memórias* was in disarray because the entire Institute was on the brink of collapse, primarily due to underfunding. It only stands to reason that international networking or

export-centered thinking, under such restrictive conditions, had atrophied. A cannibalistic McCarthyesque period had ensued under Rocha Lagoa's tenure as director, further isolating the Institute from the rest of the scientific world and forcing a number of its brightest minds into retirement or exile. Although Dr. Coura indicated no direct censorship of foreign language, after two Spanish articles (associated with the Universidad de Barcelona) and one French article in 1959, nothing more was published in either language, except for a single French article, until the regime was loosening in the 1980s (English and German seemed relatively unaffected). Moreover, comparing the thirteen years between the start of the dictatorship and the interruption of *Memórias* (1964-76) with the thirteen years previous to that (1951-63), there was a 25% drop in the number of articles published (250 vs. 330, or 25.3 vs. 19.2 per year, respectively). Not to put too fine a point on it, it appears that when the Institute prospered, as when its directors were also head of the National Department of Health, its network flourished and thus did its multilingualism, and the opposite also seems to have been demonstrated: international conflict, dictatorship and the economic crises that follow such violence all seem to have played a conclusive role in isolating the Institute's activity and sphere of influence.

### 3.4 CORRESPONDENCE



**Figure 3.7:** Obverse of a 1905 postcard from Swiss entomologist Auguste-Henri Forel to Adolpho Lutz, whose message is in German

Article publication patterns, however, still do not reveal the underlying personal ties that form private webs of contacts, since the submission of works might often be based on the journal's reputation alone. Thus the real bedrock of interpersonal connections can be considered correspondence. And it is also unavoidable that this would be the most difficult type of evidence thus far to track. That being the case, one Institute figure will have to suffice in providing a glimpse into these most personal matters, since only a single collection could be located.

Fortunately, that figure was among the most cosmopolitan to have worked at the Institute; the voluminous correspondence of Adolpho Lutz is also a testament to the type of scientific networking possible in the scientific world from the belle époque through 1940, i.e. the breadth and depth of contacts available to a prominent polyglot scientist who had studied and published extensively in Europe. The language skills implicit in his scientific production are spelled out in his correspondence, collected by the Casa de Oswaldo Cruz. So far, the compilers have discovered six different languages, including approximately 1000 letters each in German, English and Portuguese. They have begun to publish a digital library of Lutz' correspondence:

We present, for the time being, a small fraction of the collection with which we are working: approximately 3551 letters, of which 1159 are in German (32.67%); 1049 in Portuguese (29.55%); 969 in English (27.29%); 175 in French (4.93%); 169 in Spanish (4.75%) and 30 in Italian (0.84%). This is a provisory estimate as we continue to acquire new materials.<sup>99</sup> (BIBLIOTECA VIRTUAL EM SAÚDE, 2015, my translation)

For a scientist of this level, Pasteur's adage "*La science n'a pas de patrie*" would certainly seem like a natural conclusion. A survey of the "small fraction" of correspondents (i.e. 52) described on the *Biblioteca Virtual* site revealed specialists of 28 distinct disciplines

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<sup>99</sup> Original text at <http://www.bvsalutz.coc.fiocruz.br/html/pt/static/correspondencia.php> (Last accessed 12 May 2016): Disponibilizamos, por ora, pequena fração do acervo com que estamos trabalhando: cerca de 3.551 cartas, sendo 1.159 em alemão (32,67%); 1.049 em português (29,55%); 969 em inglês (27,29%); 175 em francês (4,93%); 169 em espanhol (4,75%) e 30 em italiano (0,84%). Esta é uma estimativa provisória uma vez que continuamos a captar novos materiais.

(from Anthropology to Zoology) from a total of 11 countries (23 Germans, 11 Italians, and 18 from nine other countries including Japan, Czechoslovakia & Puerto Rico), including also a 20-year correspondence with a Hansens sufferer from the remote Brazilian state of Maranhão, whom he was accompanying medically in attempt to keep the disease in a controlled state.

It is curious, from the numbers cited above, that French, German, English and Portuguese letters did not correspond to the proportions seen in Lutz' publications. One example would be that the numbers of his French and Spanish letters are almost equal (both under 5%), which is certainly not what would be expected since in the latter half of his career, as seen in section 3.2.4, original articles in French were only surpassed by those in Portuguese. On the other hand, German, Portuguese and English approximate 30% each, equating the strengths of these networks, although his Portuguese production was 25% greater than that in German, and his overall English production was only 34% of that in German.

To better demonstrate the impressive nature of this network, Table 3.5 follows, providing a compilation of the correspondents listed in the digital library by nationality and specialty. What was not derived from these data, however, are diachronic trends, i.e. when he corresponded with whom, which could add a much more conclusive edge to this facet of Institute culture, e.g. demonstrating whether communication with Hamburg was cut or curtailed in wartime and how long communication with Italy continued after his final Italian publication in 1907, etc. Moreover, combining this data with that of other IOC scientists would provide an even stronger basis for such generalizations.

**Table 3.5:**(below) Adolpho Lutz' correspondents according to nationality and specialty in the *Biblioteca Virtual em Saúde* collection

continued...

CORRESPONDENT	NATIONALITY	SPECIALTY
1. Abraham Buschke	DE	Dermatology
2. Albrecht Hase	DE	Parasitology
3. Alfonso Splendore	IT	Bacteriology
4. Antônio Bersele	IT	Entomology
5. Antônio Carini	IT	Bacteriology
<b>6. Arthur Looss</b>	<b>DE</b>	<b>Helminthology</b>

continuation...

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7. Arturo Palombi	IT	Zoology
8. August Knoblauch	DE	Neurology
9. Auguste Forel	CH	Entom./Psych.
10. Azevedo Sodré	BR	Medicine
<b>11. Battista Grassi</b>	<b>IT</b>	<b>Malariaology</b>
12. Camillo Bozzolo	IT	Menengitis
13. Charles Stiles	US	Zoology
14. Edoardo Perroncito	IT	Vermicide
15. Ernest E. Austen	UK	Entomology
16. Ernst Bresslau	DE	Zoology
17. <i>F. Caldas/N. Oliveira</i>	<i>BR</i>	<i>Hansen Patient</i>
18. Filippo Silvestri	IT	Entomology
19. Francesco Monticelli	IT	Zoology
20. Francisco Fajardo	BR	Microbiology
21. Frederick Knab	DE/US	Entomology
22. Friederich Fülleborn	DE	Helminthology
23. Gustav Brandes	DE	Zoology
24. Gutierrez Igaravidez	PR	Trop Med
25. Hans Ziemann	DE	Trop Pathology
26. Henri Leloir	FR	Tuber./Leprosy
27. Isaac G. Martinez	PR	Oncol./Radiology
28. Jorge C. Bleyer	DE/BR	Trop Med/Anthrop.
29. José Arechavaleta	ES/UR	Botany/Entom.
30. Joseph Bancroft	UK/AU	Public Health
31. Joseph F. Zikán	CZ/BR	Entomology
32. Karl Bruch	DE/AR	Entomology
33. Karl Fiebrig	DE/AR	Entomology
34. Karl Kraepelin	DE	Science Ed
35. Kurt Wolffhügel	DE/UR/CL	Veterinary
36. Leo Zehntner	CH/BR	Agronomy/Politics
37. Lothar Szidat	DE/AR	Parasitology
38. Lucien Cuénot	FR	Biology
39. Ludwig Pfeiffer	DE	Pub. Health Health/Parasit.
40. Mário Bezzi	IT	Dipterology
41. Martin Ficker	DE	Bacteriology
42. Mikinosuke Myiajima	JP	Bacteriology
43. Oscar Uhlworm	DE	Sci. Bibliography
44. Oswaldo Cruz	BR	Founder IOC
45. Paul Gerson Unna	DE	Dermatology
46. Rudolph Fischer	DE/BR	Sci. Illustrator

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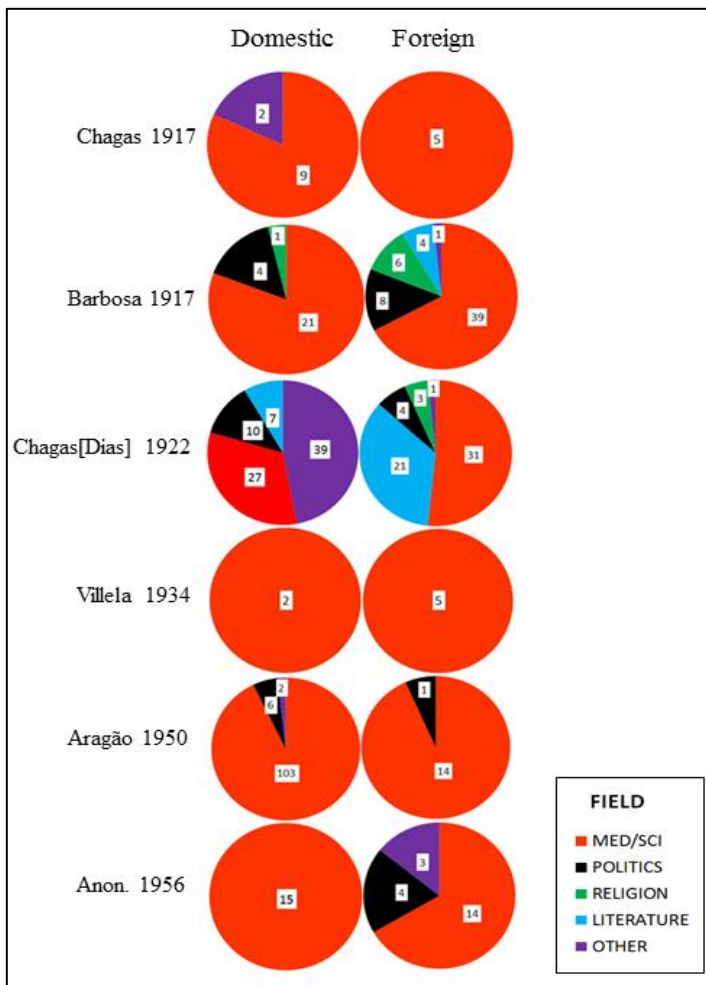
		conclusion...
47. Rudolf Leuckart	DE	Zoology
48. Robert Newstead	UK	Entomology
49. Umberto Pierantoni	IT	Zoology
50. Wilhelm Hoffmann	DE/CU	Pathology
51. Wilhelm Schwacke	DE/BR	Botany
52. William Dunbar	US/DE	Epidemiology

*Legend: bold font = Nobel Prize nominee. Country abbreviations according to Internet domain*

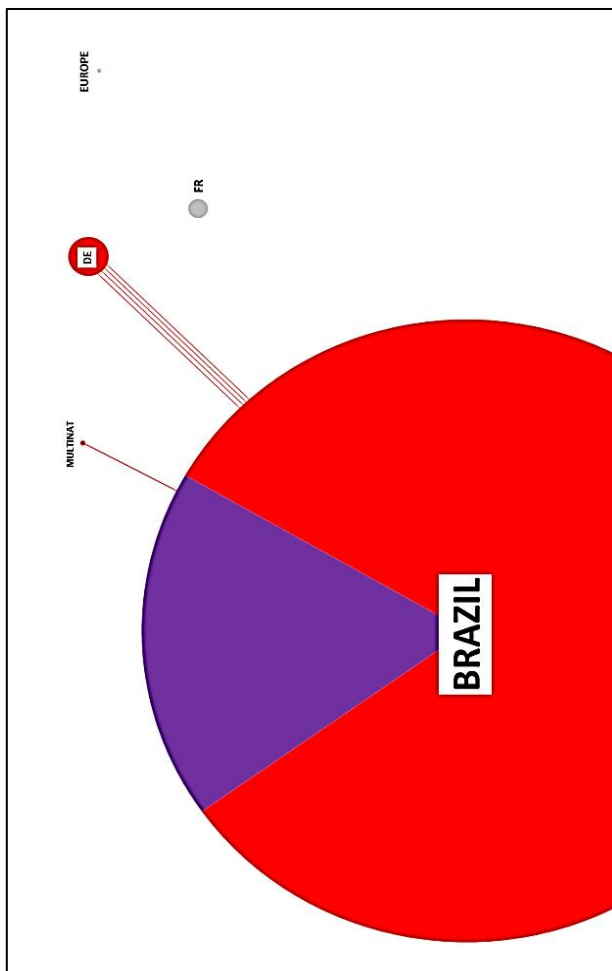
### 3.5 TELLING THE STORY: INTERNATIONAL NETWORKS REVEALED IN MEMÓRIAS EDITORIALS

Beginning with the untimely death of Gaspar Vianna in 1914, *Memórias* began the practice of publishing obituaries of fallen comrades, some of which were of considerable length for their genre and could include complete lists of bibliographic production. To these, a second category was added: lengthier retrospective biographies produced on special occasions or anniversaries. Both types were replete with references to other people, places, institutions and literature (both scientific and artistic), each presenting a portrait of the subject's world and contextualization for his life's work. Five of the largest such texts published between 1914 and 1956 (cutoff set at a minimum of 10 pages) were selected for micro-analysis of such references (including adjectival forms) to draw out an ordered picture of the networks constructed in the text, such that shifts in their dimensions and points of contact might appear over time. To these five editorials, about Oswaldo Cruz (CHAGAS, 1917; CHAGAS [Dias], 1922; ARAGÃO, 1950), Carlos Chagas (VILLELA, 1934), and Adolpho Lutz (ANONYMOUS, 1956), was added, as a type of control, Barbosa 1917: the 72-page text of a eulogy for Cruz given by the Brazilian statesman at the *Teatro Municipal* of Rio de Janeiro in May 1917.

For each text, every person, place, institution and literary referent was organized according to country of origin, while individuals were further organized into broad professional fields. The referents for each country were then graphed as spheres, proportional in size to their total number (as a percentage of the references to Brazil) and arrayed on the page in rough geographical relation to that of Brazil. After the style of a heat map, countries in which specific people are referenced were then connected to Brazil by one line for each individual, which varies according to the number of times he or she is mentioned. Individuals who had emigrated (e.g. Albert Einstein) or international organizations were considered as 'multinational'. The six heat maps are prefaced by a single figure comparing, text-by-text, the unique foreign and domestic individuals by field.

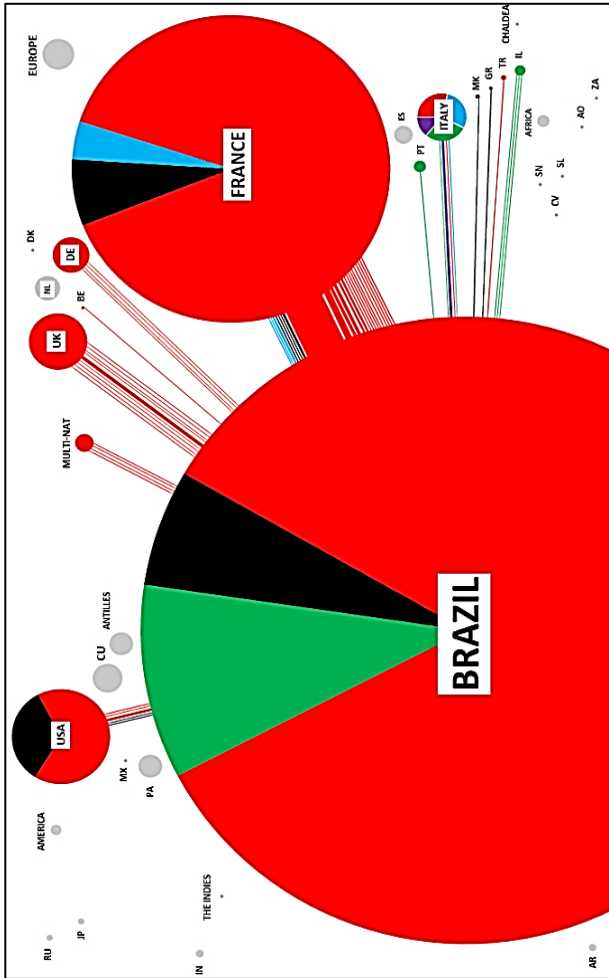


**Figure 3.8:** Unique individuals referred to in major editorials in *Memórias do Instituto Oswaldo Cruz* 1917-1956 and Barbosa 1917 according to field



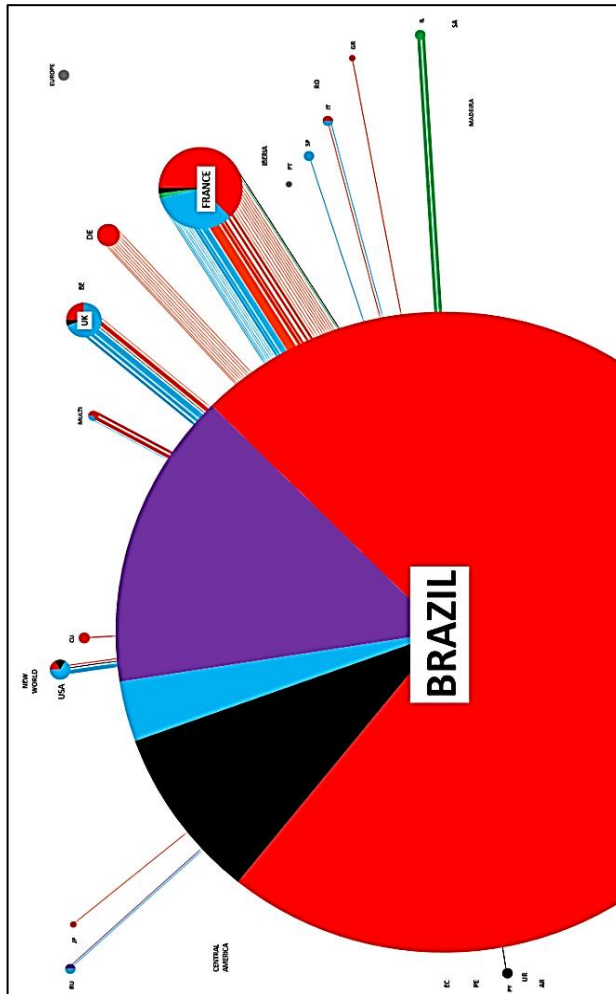
**Figure 3.9:** Global network of individuals, places, institutions and literature referenced in Chagas 1917 (9 pages of text)<sup>100</sup>

<sup>100</sup> Legend: Sphere size is relative to the number of references to individuals, places, institutions and literature. Colored spheres indicate at least one individual referenced; the pie charts represent the percentage of individual references by profession (red = medicine or science; black = politics; blue = literature; green = religion; purple = other). Each line represents a referenced foreign individual; line thickness is relative to the total references and colored according to professional field (as above). Country abbreviations are according to Internet domain (see Appendix J for list). The full data, in Excel files too large for print, are available upon request.



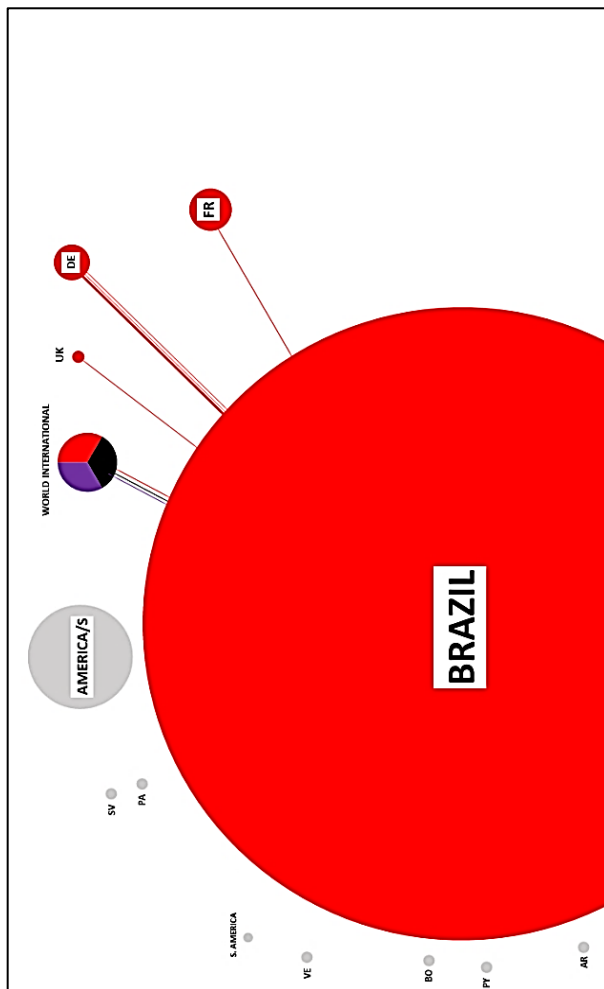
**Figure 3.10:** Global network of individuals, places, institutions and literature referenced in Barbosa 1917 (72 pages of text)<sup>101</sup>

<sup>101</sup>Legend: Sphere size is relative to the number of references to individuals, places, institutions and literature. Colored spheres indicate at least one individual referenced; the pie charts represent the percentage of individual references by profession (red = medicine or science; black = politics; blue = literature; green = religion; purple = other). Each line represents a referenced foreign individual; line thickness is relative to the total references and colored according to professional field (as above). Country abbreviations are according to Internet domain (see Appendix J for list). The full data, in Excel files too large for print, are available upon request.



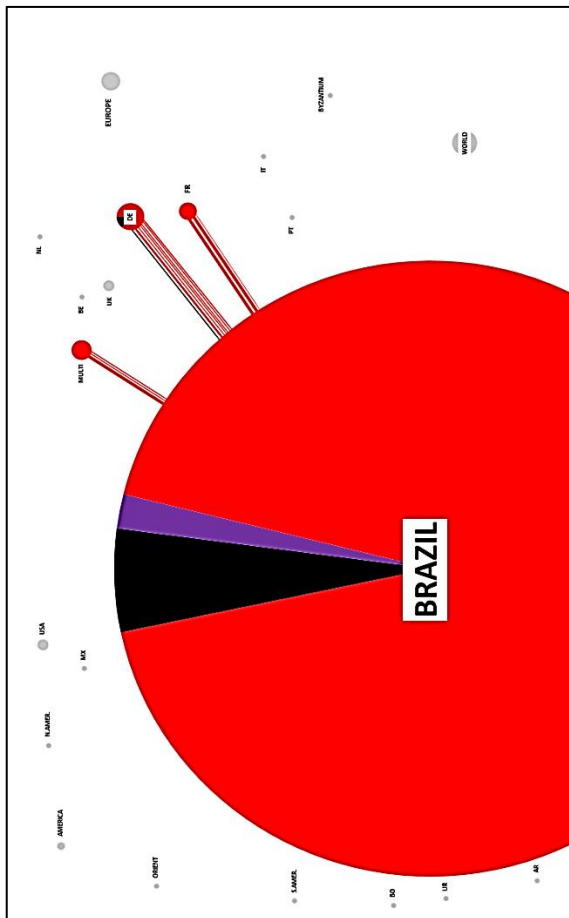
**Figure 3.11:** Global network of individuals, places, institutions and literature referenced in Chagas 1922 (52 pages of text)<sup>102</sup>.

<sup>102</sup> Legend: Sphere size is relative to the number of references to individuals, places, institutions and literature. Colored spheres indicate at least one individual referenced; the pie charts represent the percentage of individual references by profession (red = medicine or science; black = politics; blue = literature; green = religion; purple = other). Each line represents a referenced foreign individual; line thickness is relative to the total references and colored according to professional field (as above). Country abbreviations are according to Internet domain (see Appendix J for list). The full data, in Excel files too large for print, are available upon request.



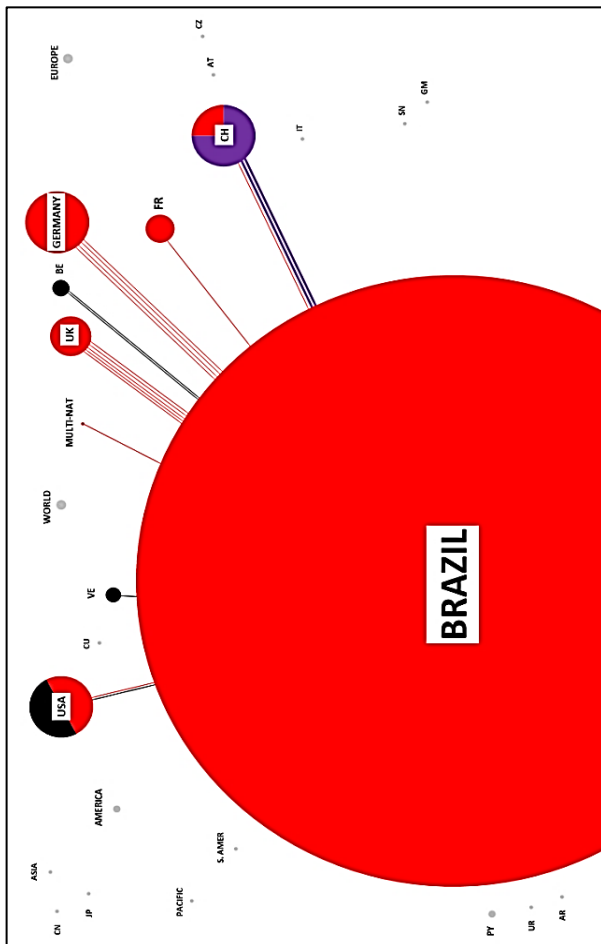
**Figure 3.12:** Global network of individuals, places, institutions and literature referenced in Vilella 1934 (15 pages of text)<sup>103</sup>

<sup>103</sup> Legend: Sphere size is relative to the number of references to individuals, places, institutions and literature. Colored spheres indicate at least one individual referenced; the pie charts represent the percentage of individual references by profession (red = medicine or science; black = politics; blue = literature; green = religion; purple = other). Each line represents a referenced foreign individual; line thickness is relative to the total references and colored according to professional field (as above). Country abbreviations are according to Internet domain (see Appendix J for list). The full data, in Excel files too large for print, are available upon request.



**Figure 3.13:** Global network of individuals, places, institutions and literature referenced in Aragão 1950(50 pages of text)<sup>104</sup>

<sup>104</sup> Legend: Sphere size is relative to the number of references to individuals, places, institutions and literature. Colored spheres indicate at least one individual referenced; the pie charts represent the percentage of individual references by profession (red = medicine or science; black = politics; blue = literature; green = religion; purple = other). Each line represents a referenced foreign individual; line thickness is relative to the total references and colored according to professional field (as above). Country abbreviations are according to Internet domain (see Appendix J for list). The full data, in Excel files too large for print, are available upon request.



**Figure 3.14** Global network of individuals, places, institutions and literature referenced in Anonymous 1956(12 pages of text considered)<sup>105</sup>

<sup>105</sup> Legend: Sphere size is relative to the number of references to individuals, places, institutions and literature. Colored spheres indicate at least one individual referenced; the pie charts represent the percentage of individual references by profession (red = medicine or science; black = politics; blue = literature; green = religion; purple = other). Each line represents a referenced foreign individual; line thickness is relative to the total references and colored according to professional field (as above). Country abbreviations are according to Internet domain (see Appendix J for list). The full data, in Excel files too large for print, are available upon request.



### 3.5.1 Observations

#### Unique individuals

Although comparing these texts is difficult due to the variance in size and theme, there were unifying factors. Since all were institutional canon, i.e. written in the name of the institution by close colleagues of key figures in its history and published in the institutional journal, except for Barbosa (which was received with admiration and gratitude by its staff<sup>106</sup>, and could thus merit parallel canonical status), the unifying factor of ‘institutional autobiography’ was considered to outweigh any apples-to-oranges aspects, at least to carry out a rough comparison.

With respect to the first graphic (Figure 3.8 above), in which a comparison is drawn between the unique foreign and domestic individuals by professional field, a number of observations should be made:

- The foreigners, as might be expected, were for the most part scientists, except in Barbosa 1917 and Chagas 1922. Barbosa sought to elaborate the cultural lineage and significance of Cruz’ public life and work, whereas Ezequiel Dias, the true author of the latter text<sup>107</sup>, who wrote it as a sort of companion piece to Barbosa’s<sup>99</sup>, dealt with the character and private life of his mentor, citing among a series of anecdotes a pantheon of figures from William James to Balzac to Da Vinci to Euclides da Cunha. The reason for the overwhelming number of (particularly national) scientific figures cited in Aragão 1950 is that its focus was on the historical mechanisms of the foundation of the IOC, which, however, was so intertwined with the life of Cruz that the text was included without reservation as a biography in this corpus. Many of non-scientist foreigners cited in

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<sup>106</sup> Dias’ opening sentence in Chagas 1922: Depois que Ruy Barbosa pronunciou aquelle celebre discurso a vida publica do fundador da medicina experimental no Brasil, seria um crime de lesa-magestade retomar alguem o mesmo assumpto, si não estivesse ainda por escrever a biographia completa de OSWALDO CRUZ. (CHAGAS, 1922, p. 5)

<sup>107</sup> Chagas 1922b, i.e. Dias’ obituary, categorically attributes the biography of Cruz to Dias: “nos dias derradeiros de sua vida, quando no fundo de um leito, esgotada a capacidade physica e bem se apercebendo do fim que vinha perto, voltou para OSWALDO CRUZ seu pensamento e traçou-lhe o perfil megestoso, em paginas inconfundiveis de amor e gratidão.”

Anonymous 1956 are references to Adolpho Lutz' ancestors in Switzerland.

- No religious figure is cited before Barbosa 1917 or after Chagas 1922, who both make extensive use of religious metaphor in their descriptions of the life of Oswaldo Cruz.

- Villela cites no non-scientists, which may have been affected by the fact that approximately half of its content is an extended quote of Chagas' 1909 article announcing the discovery of American Trypanosomiasis.

## Network Heat Maps

In Chagas 1917 there is little input from the outside world: the words 'France' and 'Europe' appear once each and the only foreigners to be mentioned are the Germans who did research stays at the IOC: von Prowazek, Hartmann, Giemsa and Hermann Dürck, besides the mention of Schaudinn, who is unanimously associated in these essays with the prestigious prize that bears his name, won by Chagas in 1911. The truncated nature of the described network, although in step with the 1914 obituary of Vianna, might also have been influenced by the profound grief that Chagas expressed on behalf of the entire staff, resulting in an almost exclusive focus on the person of their "querido mestre" (CHAGAS 1917, p. i).

Ruy Barbosa's more calculated evaluation of Cruz' career, however, sought to contextualize the scientific lineage of experimental medicine and characterize it as an opportunity for Brazil to better itself, shaking off the deeply-rooted morass of passive accommodation that he saw in the national character (e.g. BARBOSA, 1917 p.62; 68-9). Although Dias actually cites more foreigners (60 vs. 58 in Barbosa), Barbosa's network is more international according to total references than any of those depicted in *Memórias*: Brazil was referred to 209 times, France, 88, the US, 29, the UK, 17 and Germany and Italy, 10 each, i.e. the references were more than 50% foreign. As previously indicated, the weighty

influence of France and the US was due to description of the scientific lineage of Topical Medicine (e.g. the US sanitation campaign in Cuba), with Louis Pasteur being cited 36 times, compared to 58 references to Oswaldo Cruz (together these two accounted for 35.6% of all citations of individuals).

However, in Chagas 1922, references to France are greatly reduced in comparison to Barbosa and are more diversified by field, i.e. French scientists are replaced in large part by French literary figures, which is also true for the UK and US. Germany, nevertheless, is all scientists. Brazil features the largest population of nonscientists, mainly due to the family members and common people involved in the anecdotes. The main focus is on Cruz himself though: there are 238 references to him, with a further 42 to his father Bento Oswaldo. Other standouts include Chagas (21), President Rodrigues Alves (15) and Eça de Queiroz (7) among the 143 unique individuals named in the essay.

In Villela's 1934 obituary of Chagas, references to France fall below those of Germany, both of which are few (4 and 1, respectively). The only countries connected to Brazil by an individual are France, Germany (including Schaudinn twice), and the UK (Ross), although the League of Nations is mentioned on three occasions. Many of the numerous references to America were due to discussion of *American Trypanosomiasis*.

In Aragão 1950, as mentioned previously, there are many individual Brazilians referenced, e.g. Cruz 185 times, Barão Pedro Affonso 19 and Chagas 15, while the sum total of references to foreigners was 27. The total references per country were Brazil 744, Germany 30, France 23 and 'the world' (or a similar term) 14.

The anonymous 1956 retrospective on Lutz (who had died in 1940 and was eulogized in a 9-page editorial by Arthur Neiva in 1941) was written on the 100<sup>th</sup> anniversary of his birth amidst numerous national commemorations (ANONYMOUS, 1956, p. 447), so a more detailed account might have been expected. However, this was the only

editorial to have been translated, at least partially: the 12 page biography was supplemented by a six-page English “summary”, followed by a 20-page detailed record of Lutz’ publications. The 21 foreign individuals included 5 family members; of the 73 total Brazilian individual references (15 unique), 53 were to Lutz. The most prominent, by total references, of the 17 foreign countries were Switzerland (18), Germany (18), the US (17) and the UK (10).

Although no direct curve can be drawn, a weakening of ties with Europe and European culture (both scientific and otherwise) is especially evident between Barbosa (1917), Chagas (1922) and Villela (1934), Aragão (1950), which also corresponds to the general movement away from translation and foreign language in *Memórias* over the same period toward the ‘Portuguese-only’ period that dominated from 1956 until the re-inauguration of the journal in 1980. This movement is also noticeable in the general narrowing of the themes of the editorials: Barbosa wishes to explain Cruz as the vanguard of a dawning world movement and Chagas 1922 produces a hagiographic apologia of Cruz’ character as a consummate man of his (international) times, while literally the half of Villela, about the life of a man who became more internationally entangled than Cruz, is a reprint of a scientific article. Aragão limits himself to the development of the Institution itself: the ‘world’ depicted in Barbosa and Chagas 1922 is a population of specific figures and literature, while in Aragão a generalized ‘world’ (appearing as *o mundo*, *estrangeiros*, *no estrangeiro*, and the *mundo científico*) vies with Germany the second most-cited place (each totaling approximately half of the mentions of the city of Rio de Janeiro). The only foreigners mentioned more than once are Carré, von Prowazek, and Roux (3 times each), of which the former two had worked at the IOC and the latter had mentored Cruz at the Institut Pasteur in Paris. Moreover, the anonymous homage to Lutz simply retraces the broad strokes of his international journey with little extraneous interpretation or comparison (cf. the limited repertoire of countries referenced vs. Lutz’ vast correspondence, for example). Literally the largest part of this last editorial is a detailed bibliographic catalog, i.e. an inherited body of work.

The details of this trend can also be followed in the trajectories of unique individuals from specific countries:

Every editorial referenced individual Germans and, except for a single reference to the Empress of Germany in Aragão 1950, all were scientists. Thus the bonds formed between institutes, particularly Hamburg, and the successes in Berlin and Chagas' Schaudinn Prize remained a permanent fixture of the Institute's story, but the relationship seemed to be retold rather than expanded.

A total of 16 unique Britons were cited in four of the six editorials; only in Chagas 1922 were any outside of medical science mentioned. The only individuals from this list that had personal contact with the IOC were Amy Fowler, Lutz' wife, Ronald Ross and perhaps Patrick Manson; thus no ongoing interaction or relationship with UK scientists or institutions was acknowledged.

A total of eight individuals from the US are referenced in three editorials<sup>108</sup>, with the main point of reference being the Cuba/Panama sanitation campaigns and two individual scientists in personal association with IOC research.

French individuals are referenced in every editorial except Chagas 1917, but their numbers drop dramatically after Chagas 1922 (i.e. 52 unique individuals in Barbosa 1917 and Chagas 1922 vs. 5 in the latter three editorials)<sup>109</sup>. The only individuals mentioned who had had personal contact with the IOC after 1922 are in Aragão 1950, from Cruz' time in Paris. Thus what was once a flourishing, complex flux of culture and science (more unilateral than bidirectional) seemed to dry up in the late 1920s.

Excluding Dom Pedro I & II, the only Portuguese individual identified in these editorials is Saint Anthony (Barbosa 1917).

Italian individuals are referenced only in Barbosa 1917 and Chagas 1922 and were a heterogeneous group according to profession and historical

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<sup>108</sup> Barbosa 1917 (three doctors involved in the Cuba campaign, Leonard Wood the US governor of Cuba and Theodore Roosevelt), Chagas 1922 (William James and a scientist in residence at the IOC, as well as the Rockefeller Foundation and Kodak) and Anonymous 1956 (a botanist colleague of Lutz and Benjamin Franklin)

<sup>109</sup> Barbosa 1917 (23 unique individuals), Chagas 1922 (29), Villela 1934 (1), Aragão 1950 (3), Anonymous 1956 (1)

period, of which only one had any contact with the IOC110.

Although several Latin American/Caribbean countries are mentioned in every editorial except Chagas 1917, only two individuals, both political figures, are cited. No working relationship with any of these countries was described, except Lutz' work in Venezuela in Anonymous 1956.

### 3.6 MEMÓRIAS: NATIONAL MILIEU

Stepping back now from these networks, the publications of individual authors, and to an extent from *Memórias* itself, the breadth of the national context of scientific literature will now be examined for evidence of how the journal's language policy has aligned with its national cohort. As mentioned previously, *Memórias* was by no stretch of the imagination the first medical journal in Brazil. There were a number of medical journals of varying scopes and durations produced in Brazil in the nineteenth century, such as the *Gazeta Medica do Rio* and the *Gazeta Médica de Bahia* (beginning in 1852 and 1866, respectively), although the IOC was repeatedly claimed to be the beginnings of *experimental* medicine (e.g. BARBOSA, 1917, p.7; 9; 11; 19; 20) and *Memórias* was the first journal to exclusively dedicate itself to publishing the results of medical experimentation.

Due to inherent difficulties in formulating a complete list of the (bio)medical/Tropical Medicine journals produced in Brazil since the nineteenth century, the 2014 journal holdings catalog of the Institute of Tropical Medicine Antwerp<sup>111</sup> will be used for an approximation of those journals successful enough to have penetrated abroad. This catalog includes a total of 42 Brazilian titles, all of which began publication between 1909 and 1972, i.e. their Brazilian collection began with *Memórias*. Three of these journals (3.4.1-3.4.3) will be described below, although, for a more informed historical comparison, a systematic listing of the most relevant items in this collection (along with supplementary material found using online library search engines) by country and date of origin has been provided in Appendix E. In 3.4.4, however, the

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<sup>110</sup> e.g. Barbosa 1917 cites Columbus, St. Jerome, poet/novelist Alessandro Manzoni, and hygienist Giuseppe Sanarelli, while Chagas 1922 cites da Vinci and scientist Castellani, who was described as an acquaintance and supporter of Chagas' trypanosomiasis theory.

<sup>111</sup> Available at: <http://lib.itg.be/catalog.pdf>. No such downloadable catalog has been produced by the London School of Hygiene and Tropical Medicine, and the Bernhard Nocht Institute for Tropical Medicine (Hamburg) did not respond to a request.

language data from spectrum of important national biomedical/Tropical Medicine journals since 1967 will be provided in a diachronic chart similar to Appendix A (of the *Memórias* data), except controlling for a single factor, the rise of English as the lingua franca of Brazilian science.

### 3.6.1 *Brazil-Medico* (1887-1971)<sup>112)</sup>

The first of these journals is perhaps the most important in either the national or international milieu, since the Institute maintained a longstanding, basically symbiotic exchange of visibility for credibility with it. Founded by Dr. Azevedo Sodré, professor of internal pathology of the Faculdade de Medicina de Rio de Janeiro, who served both as a congressman and as mayor of the Federal District (i.e. the city of Rio de Janeiro), “probably as an individual initiative and with his own resources” (LEMONS, 1993, p.162, my translation<sup>113)</sup>, it was the most auspicious and successful Brazilian journal to publish the results of scientific research until *Memórias* was founded. The journal, closely associated with the *Sociedade de Medicina e Cirurgia do Rio de Janeiro* (MENDES; NÓBREGA, 2008, p. 210),

was born big. Since it first appeared, it enjoyed an abundance of articles, collaborators and advertisers [...] beginning in 1900, it assumed the identity of a journal dedicated to the area of public hygiene and tropical medicine, the sphere of activity of IOC scientists. (SCHWARCZ, 1993, p. 20; 22, my translation<sup>114)</sup>)

The fact that its focus turned toward Tropical Medicine is probably no accident, given that Oswaldo Cruz had served on the editorial board since January 1898, while still in Paris (as Gonçalves

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<sup>112</sup> Despite reports that the journal continued beyond this point in a quarterly format, no issue after 1971 could be found in any online library catalog, including those of Fiocruz, the Wellcome Library (London), Institut Pasteur (Paris), Académie Médecine (Paris) and Harvard (USA) and no web presence for the journal could be found.

<sup>113</sup> Na área médica, destacava-se a revista *Brasil-Médico* (1887-1971), fundada por Antônio Augusto de Azevedo Sodré (1864-1929), provavelmente como iniciativa individual e com recursos próprios.

<sup>114</sup> já surgiu grande. Desde seu aparecimento, contou sempre com muitos artigos, colaboradores e elevado número de anúncios.[...] a partir de 1900, a revista assume a identidade de periódico voltado para a área de higiene pública e medicina tropical, campo de atuação dos cientistas do IOC.

Cruz of the *Policlinica do Rio de Janeiro*) before the beginning of the *Instituto Soroterápico Federal*, and later as a *colaborador effective* (i.e. on the executive editorial council) from 1900 until at least 1905.

The first two papers produced by the Instituto Soroterápico Federal, both by Oswaldo Cruz in 1901, were published in *Brasil-Medico* (COURA, 2000, p. 9). Moreover, as mentioned in section 3.2.1, the 1898 three-part report Cruz published from Paris regarding the structure and conditions of the serum production facilities of the Institute Pasteur also appeared in this journal. It is important to point out that such a report from the ‘epicenter’ of European medicine in the most visible medical journal in the capital was important to Cruz for establishing identity and credibility as an expert in immunology within the Brazilian medical community, which could only have facilitated his quick appointment to oversee the Santos plague crisis upon his return. And this relationship only grew in importance for both parties during Cruz’ tenure; as shown above in Figure 3.4 (section 3.1), IOC scientists had published 36 articles in this journal by 1911, twelve times more than the next most frequent one. Moreover, beginning on January 1<sup>st</sup> 1912 (Anno XXIV, no. 1), a column entitled “Trabalhos do Instituto Oswaldo Cruz”, headlined second only to the editorial in *Brasil-Medico*. This ran at least through January 4<sup>th</sup> 1919.

The possible reason for this supremacy [of *Brasil-Medico* over other journals to the IOC] might have resided in the fact that this was a weekly periodical, which allowed whoever published in it the guaranteed priority of his discoveries, since they did not delay in reaching the public domain. Moreover, the journal was the principal medical periodical in the city. (WELTMAN, 2002, p.171, my translation<sup>115</sup>)

So why was a separate journal such as *Memórias* deemed necessary if the Institute could publish directly in the weekly, widely read *Brasil-Medico*, which was published in the same city? In the first place, as mentioned above, although the IOC used *Brasil-Medico* as a rolling platform for breaking news (i.e. “press releases”), *Memórias* was

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<sup>115</sup> A possível razão dessa supremacia estaria no fato de ser este um periódico semanal, o que proporcionava a quem ali publicava a garantia de prioridade de suas descobertas, uma vez que estas não tardariam a chegar ao domínio público. Além disso, a revista era o principal periódico médico da cidade.



envisioned differently. In fact, it seems apparent that its purpose at the outset was to class itself among the best international journals rather than compete on a national scale, influenced, undoubtedly, by the experience of the Berlin conference in 1907 as well as the Institute's ever-expanding journal collection, which was carefully examined in the *Mesa de Quarta-Feira* program by the entire group – especially by Oswaldo Cruz. Moreover, *Memórias*, as an institutional journal was published irregularly, only when new findings had accumulated to a certain point (it averaged just 2.1 issues per year between 1909-1917). Thus, without the pressure inherent in a weekly or monthly journal, its editor was free to pursue the type of elegant production values (described in COURA, 1987), including fabulous color illustrations and a systematic translation policy, which directly targeted foreign (i.e. *European*) readers through the broadest scientific *linguae francae* (similar values can also be seen reflected in the marvelous architecture of the Institute's *Palácio Mourisco*: see Appendix B: question 54).



Figure 3.15: *Brazil-Medico*: title headings from December 1905 and April 1914

Legend. Oswaldo Cruz named “*Collaborador Effectivo*” (red arrow); Paris contact address for French advertisers (in French)(orange arrow); “*Works by the Instituto Oswaldo Cruz*” section headlining the journal (blue and green arrows).

The fact that the arrangement was for discoveries to be previewed in the weekly journal *Brasil-Medico* and then followed up with complete details in the flagship *Memórias* demonstrates that the driving organizational norm was the advancement of scientific knowledge

through the quick dissemination of discoveries<sup>116</sup>, a policy, ironically, not at all unlike the “(Epub) ahead of print” phenomenon now in development by important digital journals, as well as the trend toward monthly publication in journals such as the *Bulletin of the World Health Organization* and even *Memórias* itself (WHO, 2016 and Appendix B: question 8, respectively). But such a norm was hardly invented by the Institute, special relationship with a second journal notwithstanding, since a very similar goal of disseminating the latest discoveries as fast as possible had already been clearly demonstrated in the first issue of the *Philosophical Transactions of the Royal Society* in 1665, as mentioned in (Chapter 1). And, certainly, such weekly exposure was also of much avail during Cruz’ turbulentsanitation campaign as Director of Public Health, especially since most of the press was against him at that point. (e.g. ARAGÃO, 1950, p. 20)

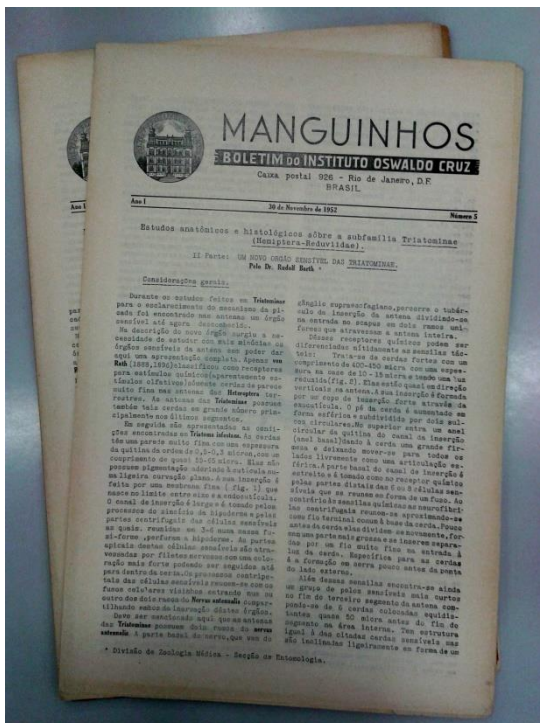
However, it is evident that this relationship was not altogether satisfactory for the Institute, since attempts were made to circumvent reliance on this external publication (see Figure 3.17 below):

[In 1928] a supplement to *Memórias* was created for more rapid propagation of the research. This supplement did not last long, since it ceased being published in 1930, returning to a system of publishing short notes in national and international scientific journals. (ARAGÃO, 1953, p. 7, my translation<sup>117</sup>)

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<sup>116</sup> Of course the economic and social dimensions of the speedy public release of discoveries cannot be ignored in science and technology, which also includes Tropical Medicine, e.g. the dispute between Battista Grassi and Ronald Ross over the 1902 Nobel Prize for discovering that the mosquito was the vector for malaria. See also Appendix B: question 37-38 & 44-45.

<sup>117</sup> foi criado um suplemento das “memórias” destinado à divulgação mais rápida dos trabalhos. Não logrou longa duração este suplemento pois em 1930 deixou de ser editado voltando-se ao sistema de entregarem-se as pequenas notas a revistas científicas nacionais e estrangeiras.



**Figure 3.16:** *Boletim de Manguinhos*, 1(5) 1952): one of the Instituto Oswaldo Cruz’ brief institutional attempts at more immediate diffusion of research

Although any number of factors could have been involved in this decision, one possible reason could have been that *Brasil-Medicow* was perceived as inadequate for the profile that the IOC was trying to project due to the crassness of its heavy advertising, a sample of which follows in Figure 3.18, whose absence in *Memórias* is highly conspicuous in comparison. This image shows representative “snake oil” type remedies, such as medicinal wine for fever or post-partum complications and medicinal cigarettes for asthma and bronchitis. Both the asthma cigarette and the laxative below it are purported to be from Parisian companies, which suggests that the journal had sufficient renown to attract foreign advertisers and/or that the agent announced above in Figure 3.15 had a certain effectiveness in generating pharmaceutical commerce between the two cities or that perceived

French superiority was slyly leveraged by local businesses.<sup>118</sup>

**VINHO AROUD**  
 MEDICAMENTO-ALIMENTO, e mais poderoso REGENERADOR prescripto pelos MEDICOS.  
 DUAS FORMULAS.

**VINHO AROUD - CARNE-QUINA**  
 Nos casos de: Doenças do Estomago e dos Intestinos, Convalasçães, Consequencias de Febre, Sarampo, Influenza, etc.  
 Adultos: Um copo deo para Madeira 1/2 hora antes da comida.  
 Crianças: Um copinho deo para licor.

**VINHO AROUD - Carne-Quina-Terro**  
 Nos casos de: Chisura, Anemia profunda, Menstruações dolorosas, Febre das Colômbias, Malaria, etc.  
 Adultos: Um copo deo para Madeira no meio da comida.  
 Crianças: Um copinho deo para licor.

**REMEDIO de ABYSSINIA EXIBARD em PO e CIGARROS**  
 ALLIVIA E CURA  
 CATARRHO, BRONCHITES  
 OPRESSÃO  
**ASTHMA**  
 e todas afeções Espasmodicas das Vias Respiratorias.  
 25 Anos de bom exito. Medalhas Ouro e Prata.  
 J. FARRÉ & C<sup>ia</sup>, Pharmaceuticos, 102, Rue Richelieu, PARIS.

**Leptandrine Royer**  
 Verdadeiro Especifico contra a  
**Prisão de Ventre habitual**

Na dose de um ou dous « cachets » no momento do jantar consegue-se, ao despertar, no dia seguinte, uma evacuação facil, **sem Colicas**.  
 No fim de alguns dias o intestino funciona naturalmente e á mesma hora.  
 (Sempre effizaz, apesar de um uso continuo).

Pharmacia A. DUPUY, 225, rue Saint-Martin — PARIS  
 E EM TODAS BOAS PHARMACIAS

**Figure 3.17:** Example of advertisements featured in *Brasil-Medico* (volume XIX(2): 8 January, 1905)

Thus, although it might be said that *Brasil-Medico*, after a fashion, gave birth to *Memórias*, this does not mean they were of the same type or class. Nevertheless, it is evident that the *Brasil-Medico* and

<sup>118</sup> Although ridiculous by today's standards, these images are shown in order to indicate the type of noise inherent in more popular, semi-academic medical/scientific literature. Such mischief could be found just as well in US journals, such as the R.J. Reynolds 1940s campaign: "More Doctors Smoke Camels than any other Cigarette", etc.: [http://tobacco.stanford.edu/tobacco\\_main/images.php?token2=fm\\_st001.php&token1=fm\\_img0002.php&theme\\_file=fm\\_mt001.php&theme\\_name=Doctors%20Smoking&subtheme\\_name=More%20Doctors%20Smoke%20Camels](http://tobacco.stanford.edu/tobacco_main/images.php?token2=fm_st001.php&token1=fm_img0002.php&theme_file=fm_mt001.php&theme_name=Doctors%20Smoking&subtheme_name=More%20Doctors%20Smoke%20Camels)

the IOC fueled one another, at least for the IOC's first two decades.

Given the voluminous nature of this weekly journal, many of whose articles do not exceed a few paragraphs, no systematic analysis of its foreign language was conducted, although the occasional French or Spanish article can be spotted among the hundreds of listings in the annual indexes. No German or English articles were observed, however. It should also be pointed out that all of the IOC articles published in *Brasil-Medico* until 1911, according to *Institut „Oswaldo Cruz“*, were in Portuguese only, indicating a more domestic target audience.

### 3.6.2 *Anais da Academia Brasileira de Ciências*

What would become the Academia Brasileira de Ciências was founded in 1916 in Rio de Janeiro and began publishing a journal a year later called *Revista da Sociedade Brasileira de Ciências*. This went through two more name changes and a three year hiatus (1923-25) before beginning regular, and since uninterrupted, publication as the *Anais* (i.e. *Annals*) *da Academia Brasileira de Ciências* in 1929. However, despite financial problems and irregular periodicity, the journal succeeded in publishing an original paper by Einstein 1926<sup>119</sup>, which was translated into Portuguese (ANAIIS DA ACADEMIA BRASILEIRA DE CIÊNCIAS, 2015a).

Despite the fact that the earliest explicit language policy found in its paratext (1956) states that any “printable” language would be published, this journal began as a Portuguese-only project. The first foreign language to appear, and heavily at that, was French (in 1934, see Table [3] below), which reflects (or is reflected by) the Academy's Corresponding Members, listed in September 1933 5(3): of the 18 listed, 11 are from Paris (including Mme. Curie and the Institut Pasteur's Emile Marchoux), 3 from Germany (including Einstein and Bernhard Nocht), one each from Argentina, Chile and Czechoslovakia (whose institution is given in French) and one, with no institution or address given, from England. That the journal would later become as, if not more, multilingual than *Memórias* might be related to its close ties with the IOC. And ‘close’ here means *quite* close: to begin with, in the

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<sup>119</sup>Bemerkungen zu der gegenwärtigen Lage der Theorie des Lichtes (Observações sobre a situação atual da Teoria da Luz) *Revista da Academia Brasileira de Ciências* 1(1): 1-3, 1926. He had discoursed on this material, in French, in his visit to the Academy in May 1925 (TOLMASQUIM; MOREIRA, 1996).

above-mentioned issue, among 29 listed members in the Biology Section, eight are immediately recognizable as current or former IOC personnel. However the influence of the IOC is most apparent when considering the Editors-in-chief of the *Anais*: for half a century (1929-83), two figures from the IOC, Arthur Moses and Herman Lent, were permanent fixtures: Moses served as editor from 1933-67 and Lent from 1968-73 and again from 1975-83 Lent (ANAIS DA ACADEMIA BRASILEIRA DE CIÊNCIAS, 2015b). Thus in 50 of the journal's first 55 years, an IOC member or former member was editor.

Moses, 10-time president of the Academy and credited with a fundamental role in its consolidation,<sup>120</sup> besides serving as editor-in-chief of the *Anais* from 1933 until his death in 1967, also served in an editorial capacity an earlier iteration of the journal in 1920-21 (ACADEMIA BRASILEIRA DE CIÊNCIAS, 2016). Moses began his career at the IOC and was an early heavy contributor of German articles to *Memórias*, publishing eight between 1909 and 1916, with none in any other foreign language. He was awarded the Kümel Prize from the University of Hamburg in 1927 as well as an award from the German Red Cross in 1932 (TEIVE; ALMEIDA; WERNECK, 2006). Thus it is curious, with such a background, that he published nothing in German in the *Anais* and that no German at all appeared in the journal until 1956. However, as in *Memórias*, the 1950s spate of German articles in the *Anais* was almost singlehandedly due to Rudolf Barth, who wrote or co-wrote 23 Of the 29 German articles that appeared in this period (79.3%). This indicates either that the Academy's Germanophone network was relatively weaker than Francophone or Anglophone ones or that German had been deliberately suppressed. Full language data for the *Anais* from 1929-66, the length of Moses' tenure, has been provided in Table 3.6 below.

Lent, however, who never left the IOC, besides serving as editor of the *Anais* for 15 years, also served as editor of the *Revista de Biologia da Academia Brasileira de Ciências* from its beginning in 1941 until 1981 (COURA, 2001, p. 1031). The *Revista de Biologia*, although not analyzed in this study, is described in WorldCat as publishing, like the *Anais*, "Articles in Portuguese, Spanish, English, French, German or

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<sup>120</sup> "A partir de 1929, Artur Moses - participante da direção da Academia em doze diferentes gestões, tendo sido eleito presidente em dez delas - passou a ter um desempenho fundamental na consolidação da Academia." (ACADEMIA BRASILEIRA DE CIÊNCIAS, 2016)

Italian.” (WORLDCAT, 2016<sup>121</sup>)

Although the appearance of the different languages seems random at first, certain patterns can be distinguished. Apart from what has already been mentioned about German:

- there is a rise and fall in French between 1934-41, followed by a consistent (if low) presence beginning at the end of the 1940s and continuing into the late 1960s;
- Spanish was published with some frequency in the early 1940s;
- Italian, though low, did not disappear until late in the Second World War although it did not appear again after 1949;
- English is a consistent presence beginning in the late 1930s, vying with Portuguese in the late 1940s and early 1950s, and beginning to overtake it in the late 1950s and early 1960s.
- All foreign languages except English and French were disappearing by or before the mid-1960s

**Table 3.6:** *Anais da Academia Brasileira de Ciências*: percentage of each published language from 1929(vol.1)-1966(vol.38)<sup>122</sup>.

continued...

YEAR	LANGUAGE					
	PT	EN	FR	GR	SP	IT
1929	94.5	0	5.5	0	0	0
1930	100	0	0	0	0	0
1931	100	0	0	0	0	0
1932	100	0	0	0	0	0
1933	100	0	0	0	0	0
1934	72.9	0	27.1	0	0	0
1935-37	no data					
1938	52.6	11.1	14.8	0	3.7	0
1939	62	13.7	24.1	0	0	0
1940	56.8	13.6	13.6	0	6.8	9
1941	74.1	12.9	3.2	0	3.2	6.4
1942	81.5	7.8	0	0	2.6	7.8
1943	89.7	3.4	0	0	6.9	0

<sup>121</sup>[http://www.worldcat.org/title/revista-brasileira-de-biologia/oclc/1645004&referer=brief\\_results](http://www.worldcat.org/title/revista-brasileira-de-biologia/oclc/1645004&referer=brief_results) . Last accessed on 17 May 2016.

<sup>122</sup> Data derived from each complete annual index (normally four issues published per year), except where marked (\*), which was from a single issue. Red cells mark years in which English outnumbered Portuguese.



conclusion...						
1944-45			no data			
1946*	100	0	0	0	0	0
1947-48			no data			
1949	46.6	40	7.5	0	0	3.3
1950	63.6	29.5	6.8	0	0	0
1951*	41.6	50	8.3	0	0	0
1952-55			no data			
1956	50	35.4	4.8	9.6	0	0
1957	49	39.2	3.9	7.8	0	0
1958	43.6	45.4	5.4	5.4	0	0
1959	47.5	44.2	.6	6.5	0	0
1960	40.4	46.8	2.1	10.6	0	0
1961			no data			
1962	43.8	40.3	7	8.7	0	0
1963	48.5	40	8.5	2.8	0	0
1964	38.2	51.4	10.2	0	0	0
1965	37.8	50	12.1	0	0	0
1966	47.4	42.3	10.2	0	0	0

Connecting these dots reveals that the war did have a chilling effect on foreign language in the journal: Portuguese rose from 56.8% in 1940 to 100% by 1946.<sup>123</sup> Nevertheless, foreign language rebounded soon after, with Portuguese reaching 50% or more only twice after 1949.

In this time period it is also clear that, unlike *Memórias*, in which the translation era was fading and a Portuguese-only period was beginning, Portuguese in the *Anais* was well on its way to becoming a minority language. That dissimilar linguistic cultures seemed to be at work here is further evidenced by the fact that English outstripped Portuguese in *Memórias* for the first time only in 1982, compared to 1951 in the *Anais*. Nevertheless, since English did take the lead in *Memórias*, it never again relinquished it.

One factor for the relatively early advance of English in the *Anais* could be subject matter. Although *Memórias* deals with a very broad spectrum of areas within biomedicine, the *Anais* truly runs the gamut of the sciences (from geology to psychiatry to mathematics). Although a diachronic analysis of subject matter by language was not conducted, it is clear that the linguistic concentrations are not evenly distributed, i.e. there is indication that certain subjects were more

<sup>123</sup> These data are, unfortunately, incomplete since 1944-45 (Volumes 16-17) and 1947-48 (Volumes 19-20) were missing from the collection available for access, and no online sources could be found.

English-friendly than others. For example, in the 1956 (vol. 28) index, the “Ciências Físicas” section lists 19 original articles, 13 of which are in English and another five are in Portuguese; however, in the “Ciências Biológicas” section of the same volume, the 26 articles include five in English, five in German and one in French, with the remaining 15 in Portuguese.

***Carlos Chagas, Jr.***

Another key figure in the life of the Academy with unavoidable links to the IOC was Carlos Chagas, Jr. (1910-2000), who served as the Academy’s president from 1965-67 during the transition to the *Regime Militar* (Academia Brasileira de Ciências 2016), as well as its vice president from 1952-54 (Almeida 2003). Although he was more closely associated with the Federal University of Rio de Janeiro and the Institute of Biophysics he created there (as well as with his foundational role in the Brazilian Research Council – CNPq), it is important to point out that

he never distanced himself from the IOC, where he had begun his scientific career, being a member of its Technical-Scientific Council, president of the Council of the Casa de Oswaldo Cruz and of Fiocruz’ Centro de Estudos. (ACADEMIA BRASILEIRA DE LETRAS, 2016, my translation<sup>124</sup>)

In fact he came to occupy an almost singular position as ambassador of science, serving as a mediator between the Academia Brasileira de Ciências, the Academia Brasileira de Letras, the IOC, the Brazilian government<sup>125</sup>, the UN/UNESCO and even the Papacy.<sup>126</sup> (ACADEMIA BRASILEIRA DE LETRAS, 2016; ALMEIDA, 2003, p.80-81) Moreover, he maintained very close ties with the Institut Pasteur (LIMA; MARCHAND, 2005, p. 52). Described in the *Transactions of the American Philosophical Society* as “a citizen of the

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<sup>124</sup> Nunca se afastou do Instituto Manguinhos, onde iniciou sua carreira científica, sendo membro do seu Conselho Técnico-Científico, presidente do Conselho da Casa de Oswaldo Cruz e do Centro de Estudos da Fundação Oswaldo Cruz.

<sup>125</sup> He was credited with reversing the fortunes of the organization by negotiating an undesignated grant of one million dollars from the federal government to be released over a period of time to the Academy (Academia Brasileira de Ciências 2016)

<sup>126</sup> As president of the Pontifical Academy of Sciences from 1973-1990, he spearheaded a movement for a judicial review of the trial of Galileo, securing his acquittal. (ACADEMIA BRASILEIRA DE LETRAS, 2016; ALMEIDA, 2003, p.81)

world” (ALMEIDA, 2003, p. 81), he was truly heir to his father’s international –and multilingual – outlook. Thus, at the very least, he should be seen as an important influence on language trends in Brazilian science.

Although much more detail could be provided on this point, a few notes from a 176-page interview given in 1976-77 to the Fundação Getúlio Vargas should be sufficient to connect certain discursive threads from the beginnings of the Institute through the 1980s. In the first of these quotes, he describes the need for foreign language training in science education and in his own upbringing:

C.CHAGAS: I think that our basic preparedness for science was much less than that of students today, but, in compensation, we had general knowledge and probably a much better language base. Four years of Latin and four years of Portuguese as well as French and, in my case, German and English, which was a special case. *This language background certainly created a possibility, a great potential for culture*, because it allowed us to utilize foreign books with greater facility.

S.S.: How did you learn German?

C.CHAGAS: I learned German because my father, who was greatly influenced by the German school of medicine, had great difficulties in mastering the language, and for this reason, as soon as he could, he took on a German governess. I remember quite well that I learned to speak German before I learned to speak Portuguese. I remember also that it seemed an extravagance for my father to pay, at that time, 100,000 reis a month to a governess, besides paying for her voyage from Frankfurt to Rio. This lady stayed with us for nine years and all of us, including my father, learned German. In my case, I learned German before Portuguese because, when she arrived, I had not yet begun to speak. (Fundação Getúlio Vargas 1977:7, my translation: emphasis added<sup>127</sup>)

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<sup>127</sup> Penso que a nossa preparação básica para a ciência era muito menor do que a dos estudantes de hoje, mas, em compensação, tínhamos interesses gerais e provavelmente uma base de

He foreshadows the importance of indexing and the almost total lack thereof among Latin American science journals, leading to the “*antipatriótico*”, self-destructive brain drain cycle that Coura railed against in his first Editorial in Memórias. (COURA, 1980, p.1)

M.C.M.: What are the chances that this journal [i.e. *Anais*] will obtain a place in the international field?

C.CHAGAS: If a good editorial board is put together, including other Latin-American scientists who are professionally recognized, chances are it will immediately be listed. Because it's important that we get listed in prominent journals.

M.C.M.: Does Argentina have any listed journals?

C.CHAGAS: Yes, in the field of biological sciences, a journal called the *Revista Latino-americana de Ciências Fisiológicas*, which is not bad; it's listed and accepted.

M.C.M.: And what about other Latin-American countries? Peru?

C.CHAGAS: Practically none. *We all send [our work] to international journals.* (FUNDAÇÃO GETÚLIO VARGAS, 1977, p. 78, my translation: emphasis added<sup>128</sup>)

línguas muito melhor. Quatro anos de latim e quatro anos de Português, além do Francês e, no meu caso, Alemão e Inglês, o que era um caso especial. Esse conhecimento de línguas marcava certamente uma possibilidade, um potencial de cultura muito grande, porque nos permitia utilizar livros estrangeiros com a maior facilidade.

S.S.: Como o senhor aprendeu o alemão?

C. CHAGAS: Eu aprendi o alemão porque meu pai, que sofreu uma grande influência da escola médica alemã, teve grandes dificuldades em dominar a língua, e por isso, logo que pôde, tomou uma governanta alemã. Eu me lembro muito bem que aprendi a falar alemão antes de falar português. Lembro também que parecia uma extravagância que meu pai pagasse, naquela ocasião, 100 mil réis mensais a uma governanta, além de ter pago a passagem dela de Frankfurt para o Rio. Essa senhora ficou conosco nove anos e todos nós, inclusive meu pai, aprendemos alemão. No meu caso, aprendi alemão antes do português porque, quando ela chegou, eu ainda não tinha começado a falar.

<sup>128</sup> M.C.M.: Qual seria a chance de essa revista conseguir um lugar no campo internacional?

From this it is evident that *Anais* was not indexed or considered among higher international circles at that point, which leads to a discussion of his plans to subdivide the journal in a similar fashion to what had recently been done with *Annales de l'Institut Pasteur* (see 3.5.1). Upon being asked to elaborate on this plan, he made the following explosive comment about the would-be journal's language:

M.C.M.: You said in two journals?

C.CHAGAS: The other would be in the field of physics, i.e. the exact sciences; one in the field of natural sciences and the other in the field of the exact sciences. [...]

M.C.M.: In what language would the journal be published?

C.CHAGAS: English.

M.C.M.: Really?

C.CHAGAS: English. Or French. Or German.

M.C.M.: Never in Portuguese?

C.CHAGAS: *Portuguese is useless.* Maybe it could have Portuguese abstracts.

M.C.M.: It couldn't be bilingual?

C.CHAGAS: Bilingual gets expensive and is no longer used. Oswaldo Cruz began the *Memórias* of the Institute publishing in bilingual. That is, a half-column in Portuguese and a half-column in German. (FUNDAÇÃO GETÚLIO VARGAS 1977,<sup>129</sup>p. 79-80, my translation: emphasis added<sup>129</sup>)

C. CHAGAS: Se ela colocasse um bom corpo editorial, incluindo outros cientistas latinoamericanos reconhecidamente profissionais, teria chance de ser imediatamente listada. Porque o importante é a gente ser listado nas revistas de referência.

M.C.M.: A Argentina tem revistas listadas?

C. CHAGAS: A Argentina tem, no campo das ciências biológicas, uma revista que se chama Revista Latino-americana de Ciências Fisiológicas, que não é má, e que é listada e é aceita.

M.C.M.: E outros países latino-americanos? O Peru?

C. CHAGAS: Praticamente nenhum. Nós todos mandamos para as revistas internacionais.

<sup>129</sup> M.C.M.: O Sr. falou em duas revistas?

C. CHAGAS: A outra seria no campo da física, enfim, das ciências exatas; uma no campo das ciências naturais e outra no campo das ciências exatas. [...]

M.C.M.: Em que língua sairia a revista?

C. CHAGAS: Inglesa.

M.C.M.: Sim?

Thus he more than shares Coura's view of the marginal position of Portuguese in international science (Appendix B: question 7). And it cannot be overemphasized that he had also, by this point, already been 'immortalized' as a member of the Academia Brasileira de Letras, i.e. among the great propagators and defenders of the Portuguese language. In this response he makes it clear that a bilingual translated format is impractical from an economic point of view for modern journals. He goes on to explain that things have gotten to the point (bearing in mind that this is 1977) where (inbound) translation is counterproductive, prejudicial to the education system:

For a long time now I have held the position, which could be seen as a little elitist, that translation should be avoided as much as possible. Really, our biggest problem is that, no matter how many books we publish or translations we make, for someone to be a scientist in Brazil, he has to at least read English well. Therefore, Brazilian texts must not [be allowed to] impair the learning process. Nowadays, however, with the number of students and the unpreparedness in foreign language with which they arrive from high school, the only way that I see is to adopt a foreign language at the undergraduate, or at least the Master's, level. For how could anyone expect to follow any type of science these days without at least understanding English? Books are necessary for foundational knowledge, but afterwards you have to read journals, you have to read even monographs, which come out in droves every year. One of the advantages that I had when growing up was the fact that I learned the three languages I know [i.e. German, French and English], besides Portuguese, very early. Such that I could read in German, French and English at quite a young age. (FUNDAÇÃO GETÚLIO VARGAS, 1977, p. 80-81, my translation<sup>130</sup>)

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C. CHAGAS: Inglesa. Ou francesa. Ou alemã.

M.C.M.: Nunca em português?

C. CHAGAS: Português é inútil. Poderia ter um resumo em português.

M.C.M.: Não poderia ser bilíngüe?

C. CHAGAS: Bilíngüe se torna muito caro e não se usa mais. Oswaldo Cruz iniciou as memórias do Instituto publicando em bilíngüe. Aliás era meia coluna em português e meia em alemão.

<sup>130</sup> Durante muito tempo podia se tornar a posição pouco elitista que tomei de que se devia evitar o mais possível as traduções. Realmente o maior problema nosso é que, por mais que publicemos

In this final passage, Chagas, Jr. reveals an outcome of his scientific networking that could only come to pass through his multilingual training: his appointment as general secretary of the 1963 Conference on the Application of Science and Technology to Underdeveloped Countries (Almeida 2003:80). He relates here a bit of his frenetic experience as organizer of this high-level international event, demonstrating his less-than-bedazzled reaction to the “post” colonial cultures behind the *linguae francae*:

Truth is, they [i.e. U-Thant, 3rd Secretary-General of the United Nations] wanted me to be a sort of travelling salesman for the conference, making trips around the world to talk to all the heads of state that would be at the conference [...So I] went to Geneva on the 12<sup>th</sup> of March and found everything more or less set up. I spent a month breaking down this thing that had been made ‘Anglo-Saxonically’. There were only Brits there, only Americans. I was obliged to go Moscow and all the great capitals. I went twice to Washington, twice to New York, once to Moscow, three times to Paris, once to London, but, during this period, which lasted from March 62 to March 63, I came nine times to Brazil, once even to spend four, five days [...] But for you to have an idea of the work involved in this Conference, I’ll tell you the following: I read more or less 5,000 abstracts of a page and a half, whose principal defects had been pointed out by my secretaries, which didn’t stop me from reading them, because I didn’t have any confidence in those people. Later I was able to put together a little group made up of an Algerian, an Egyptian, an Italian, a Brit, and an Argentinian [...] But the political problem was the following:

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livros, passemos traduções, a pessoa, para ser cientista no Brasil precisa pelo menos saber ler bem em inglês. Então seria necessário que os textos brasileiros não prejudicassem esse aprendizado. Hoje, entretanto, com o número de alunos e com o despreparo em línguas com que chegam do curso secundário, o único jeito que vejo é a adoção de uma língua estrangeira no curso superior ou pelo menos no curso de mestrado. Pois, como é quer acompanhar qualquer tipo de ciência, hoje, sem o conhecimento pelo menos da língua inglesa? Os livros são necessários para formar um embasamento, vamos dizer, mas depois tem que ler as revistas, tem que ler mesmo as monografias que saem aos borbotões todos os anos. Uma das vantagens que tive em minha formação foi o fato de que eu aprendi as três línguas que sei, além do português, muito cedo. De modo que pude logo ler em alemão, francês e inglês.

the conference was, evidently, a type of giant market in which countries wanted not only to sell their machinery, but also to exert influence. So they demanded that the number of lines given to one country be equal to that of the others. France, for example, protested because in a certain sector, it had three of four lines less than the United States. The United States protested against Russia and vice-versa. (FUNDAÇÃO GETÚLIO VARGAS, 1977, p. 95-96, my translation<sup>131</sup>)

A number of things are evident from the preceding quote:

- International cooperation appears to require a lingua franca or *linguae francae* (MONTGOMERY, 2013, p.175), which is to say that multilingualism is imperative for effective international activity.
- Having met this initial requirement, Chagas was able to get things done *only* by using a small tight-knit mixed group mostly from the global south who, apparently, knew how to cooperate<sup>132</sup> – i.e. “Anglo-Saxonically” doesn’t work on the world stage for cooperative efforts. He insinuates that the main reason for this is the same tired colonial infighting that had precipitated the last war (and the one before that), whose armistice had been signed a mere 18 years earlier. Coura would later agree, saying of what has developed from this same framework: “globalization will not make us equals, on the contrary...” (COURA, 2000, p. 16)
- “Organizations” and “communities of practice” are not in full

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<sup>131</sup> Na verdade eles queriam que eu fosse uma espécie de caixeiro-viajante da conferência, que fizesse a volta ao mundo para conversar com todos os governantes sobre o que seria a conferência [...] Aí vim ao Rio e fui para Genebra onde cheguei no dia 12 de março mais ou menos e encontrei tudo montado. Passei um mês desmontando uma coisa que estava feita anglo-saxonicamente. Só tinha inglês, só tinha americano. Fui obrigado a ir a Moscou e a todas as grandes capitais. Fui duas vezes a Washington, fui duas vezes a Nova York, uma a Moscou, três a Paris, uma a Londres, mas, durante esse período, que durou de março de 62 a março de 63, vim nove vezes ao Brasil, uma vez inclusive para passar quatro, cinco dias. [...] Mas para você ter a idéia do trabalho que foi a Conferência, conto o seguinte: li mais ou menos 5 mil resumos de uma página e meia, evidentemente apontados os principais defeitos pelos meus secretários, o que não me impedia de ler, porque eu não tinha confiança nos mesmos. Foi mais tarde que eu consegui fazer um pequeno grupo, constituído por um algeriano, um egípcio, uma italiana, um inglês e um argentino. [...] Mas o problema da política era o seguinte: a conferência era, evidentemente, uma espécie de grande feira em que os países queriam vender não só maquinárias como também exercer influências. Então exigiam que o número de linhas dadas a um país fosse igual ao outro. A França, por exemplo, protestou porque num determinado setor ela tinha três ou quatro linhas a menos que os Estados Unidos. Os Estados Unidos protestaram contra a Rússia e vice-versa.

<sup>132</sup> The effectiveness of this same tactic, used intra-nationally by Oswaldo Cruz in his recruitment efforts and general avoidance of academia, will be discussed in Chapter 4.



alignment since an immense burden of work and responsibility can be thrown upon the backs of a few people or a sole individual; thus, as has been shown in the history of the IOC, although “science” may “belong to humanity”, it is the efforts of a few individuals, generally of cross-cultural bent, that effect its distribution.

To close this section, a few of Chagas Jr.’s keyphrases will be examined, since they are relevant to the language trajectories of both *Memórias* and the *Anais*.

“Four years of Latin and four years of Portuguese as well as French” (FUNDAÇÃO GETÚLIO VARGAS, 1977, p. 7)

In this response, Chagas Jr. points out three important changes that had occurred in the national curriculum during his lifetime, which were the abandonment of: classical languages<sup>133</sup>, the compulsory teaching of *two* foreign languages (although private tutoring in more was of further advantage) and, apparently, a more intensive study of Portuguese. Although he admitted that current students were better prepared to learn the techniques of science (it might be assumed that math and science had gained greater recognition at the expense of language training), they were left generally handicapped to progress in these fields, since they could not go beyond basic Portuguese textbooks or keep abreast of current developments, i.e. they were cut off from the living system, the active scientific community. This idea is the foundation for the following statement:

“This language background certainly created a possibility, a great potential for culture” (FUNDAÇÃO GETÚLIO VARGAS, 1977, p. 7)

Although this statement has broader implications, its basis is that science is cultural in nature; it is a culture of interaction and is thus predicated on communication. The corollary is that monolingualism isolates, reducing interaction and impoverishing the culture.

*“for someone to be a scientist in Brazil, he has to at least read English well. Therefore, Brazilian texts must not [be allowed to] impair the learning process”* (Fundação Getúlio Vargas 1977, p.80)

Here, he makes it clear that a sea change had occurred in the general scientific community regarding lingua franca. Of the colonial (and ergo, scientifically important) languages, French and German have been reduced categorically to a second tier. Although they are not excluded, as seen in his other comments, neither they essential: they have become supplementary.

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<sup>133</sup> As already pointed out in a footnote in section 3.2.3, death of, first, semi-obligatory classical language training and, second, foreign language skills in general during this period was not isolated to Brazil.

The way he frames this statement may also be important, since he says “...to be a scientist *in Brazil*”, thus leaving the door open, possibly, for different requirements for Francophone or Germanophone students, although this doesn’t really appear to be the case. Moreover, minimum *functionality* (i.e. consumption) includes read-only skills; actual *participation*, however (i.e. contribution, output), would involve writing, whereas full *collaboration* would involve communication, whether in correspondence or orally at congresses or committees.

**“Portuguese is useless.” (FUNDAÇÃO GETÚLIO VARGAS 1977, p. 80)**

The corollary here is that, since English is equated with science, being the portal to the scientific world, classroom time or journal space devoted to Portuguese is time or space denied to English. Thus Portuguese textbooks, articles etc. should be suppressed insofar as possible, since they choke acquisition of English. And Chagas, Jr. was hardly alone in this idea: without going into details, the English-only (or mostly English) graduate or undergraduate classroom has become policy in a number of countries throughout the globe since this point. If the attitude that he expresses here had currency within the Academy, then it is clear why there were never translated (i.e. bilingual) articles in the *Anais*. And it may be that, inasmuch as such currency spilled over or trickled back to the IOC, the decline and end of the translation era in *Memórias* would also have been a certain outcome.

**“Bilingual gets expensive and is no longer used.” (FUNDAÇÃO GETÚLIO VARGAS 1977, p. 80)**

However, another consideration in the death of translated articles in *Memórias* is the economic dimension of this practice. If translation was conceived of as added value, rather than essential to the journal, then when times got tough – as they did in the Depression era – a drop in translation would be expected. And this indeed is what was observed; however, it dropped and never returned. Perhaps the most reasonable explanation for this is a combination of the above factors, i.e. a gradual loss of foreign language writing proficiency among IOC personnel, combined with the costliness of translation (in both time and money) and a reduction in institutional income, since the great epidemics had been conquered and the national emergency had passed. And all this, to a greater or lesser extent, was exacerbated by the European conflagrations, which resulted in setbacks to French and German scientific capacity.

**“Because it’s important that we get listed in prominent journals.” (FUNDAÇÃO GETÚLIO VARGAS, 1977, p. 78)**

Finally, Chagas Jr. indicates, although still somewhat embryonic at that point, a process whereby the above-mentioned perceived linguistic hierarchy was being crystallized into a mathematical system of ranking. He clearly foresaw the burden that such a system would impose on journals and was preparing for the scramble necessary to get within respectable reach of the top. As will also be shown in the following section, the survival of these journals depended on it. Failure to thrive within this system leads a hemorrhaging of research which Chagas Jr. admitted to being a part of:

*“We all send [our work] to international journals.”* (FUNDAÇÃO GETÚLIO VARGAS, 1977, p.78)

### **3.6.3 *Memórias do Instituto Butantan 1918-1993/2006***

*Memórias do Instituto Butantan* began shortly after *Memórias do Instituto Oswaldo Cruz*, and in some respects could be considered a sister journal, especially since the Instituto Butantan was also born out of the Bubonic plague crisis in Santos, São Paulo in 1899. Adolpho Lutz, then director of the Instituto Bacteriológico sent his assistant Vital Brazil to investigate, whose positive results were confirmed by those of Oswaldo Cruz. It was determined that a serum fabrication unit must be quickly established, since the world’s only exporter of plague serum was the Institut Pasteur in Paris, which could not meet world demand (TEIXEIRA, 2016). Vital Brazil was named director of this facility, which grew to become a major research and production facility for antivenoms, producing “the first demonstration of the specificity of anti-venomous serum and later, the first production of polyvalent serum for therapeutic use.” (HAWGOOD, 1992, p.573).

At first, the Institute’s research was published in the *Revista Médica de São Paulo*, in a relationship similar to that of *Memórias do Instituto Oswaldo Cruz* and *Brasil-Médico*. (OLIVEIRA, 1981, p. 11) However, concomitant with the launch of *Memórias do Instituto Butantan* in 1918, a number of organizational problems arose, principally due to sharp conflicts between the IOC’s Arthur Neiva, who served as Director of São Paulo’s Serviço Sanitário from 1917-20 and Vital Brazil, who ended up “retiring” in 1919, and opening a new center in Rio de Janeiro, taking much of the staff with him (BENCHIMOL; TEIXEIRA, 1993, p.161-64). This upheaval, as well as persistent shortfalls in resources, led to inconsistent periodicity (e.g. volume 1 was

published in 1918 and volume 2 only in 1925; six other times before 1966 at least two years were joined in a single volume); the periodical would ultimately come to an untimely end, first as a journal of original articles in 1993 and then as a biennial report in 2006.

The language trajectory was quite different from that of *Memórias do Instituto Oswaldo Cruz*. Except for volume 2, featuring bilingual French and Portuguese paratext (there appears to have been a French colleague, Jehan Albert Vellard, as unofficial co-editor), articles were always in Portuguese with almost ubiquitous English abstracts for at least its first 14 years (see Table 3.7 below). In volume 12 (1938-9) there was a short-lived multilingual bloom, where all four foreign languages appeared, totaling 40.5% of the articles. A few bilingual articles were published in the mid-1950s, when English also began to consistently appear, averaging 21% of the total articles from 1950-65 (compared to 3.8% for French, 1.4% for German and 0% for Spanish). A sudden isolated spike<sup>134</sup> in English appears in 1966, the cutoff year for this table, which was the only time any language surpassed Portuguese.

**Table 3.7:** *Memórias do Instituto Butantan*: diachronic percentage of each published language 1918(vol.1)-1966 (vol.33)<sup>135</sup>

continued...						
LANGUAGE						
YEAR	VOL	PT	EN	FR	GR	SP
1918-19	1	100	0	0	0	0
1925	2	80	0	20	0	0
1926	3	100	0	0	0	0
1929	4	100	0	0	0	0
1930	5	100	0	0	0	0
1931	6	100	0	0	0	0
1932	7	100	0	0	0	0
1933-7	8-11	no data				
1938-9	12	59.5	9.5	16.7	2.4	11.9
1939	13	80	13.3	0	0	6.7
1940	14	100	0	0	0	0
1941	15	100	0	0	0	0

<sup>134</sup> As can be seen in Table [1] below, the journal was not published in 1967-68, which may indicate that 1966 was an attempt by an editor to reformulate the journal, with upheaval ensuing. Another possible factor in this anomaly could have been some impact, such as budget cuts, from the 1965 military coup.

<sup>135</sup> Data derived from the table of contents of each issue, except where marked (\*), 1964 = issue 1 of 2; 1966 = Supplement issues 1-3. Red cells mark years in which English outnumbered Portuguese. Totals >100 (#) indicate presence of bilingual articles.

					conclusion...	
1942	16	95.8	0	4.2	0	0
1943	17	100	0	0	0	0
1944-5	18	100	0	0	0	0
1946	19	91	9	0	0	0
1947	20	100	0	0	0	0
1948	21	100	0	0	0	0
1949	22	100	0	0	0	0
1950-1	23	85.7	14.3	0	0	0
1952	24	65.4	30.8	0	3.8	0
1953	25	71.4	28.6	0	0	0
1954	26	100	5.5 <sup>#</sup>	0	0	0
1955-6	27	100	22.2 <sup>#</sup>	0	0	0
1957-8	28	54.2	16.7	25	4.1	0
1959	29	66.7	26.6	0	6.7	0
1960-2	30	75	12.5	12.5	0	0
1964*	31	73.7	26.3	0	0	0
1965	32	72.7	27.3	0	0	0
1966*	33	8.5	72	7.6	1.7	10.2

Although five different languages make an appearance in this journal, there was comparatively little foreign language activity in this half-century, aside from the upswing in English in the 1950s: French passed 10% only four scattered years and Spanish only one year. Thus, except for brief identity crises, such as volumes 2 and 12, as well as the three years in which English spiked (1966, 1987 and 1993: see Table [1] in section 3.4.4 below), it would appear that the journal was never actually intended for an international audience. And this brings the discussion back to Carlos Chagas Jr.'s point (3.4.2) about indexing and the dynamics of international scientific literature. The outcome of this story is expounded with clinical lucidity in the farewell editorial in volume 56 (1994-95), which is reproduced in full below:

It is very difficult, if not impossible, to achieve and maintain an outstanding level in the quality of institutional journals. An attempt was made in early 1994 to once more change the scope and policy of the "Memórias do Instituto Butantan". Articles were to be published only in English and were to be approved by an international Editorial Board of 56 referees (30 from Brazil, 26 from other countries). After just over a year, the number of contributions was low and the quality was not as expected.

Since 1918 when volume 1 of the “Memórias do Instituto Butantan” was published as proposed by Vital Brazil, Director of the Institute, discontinuity has been repeatedly noticed and the journal’s quality has varied regularly in spite of, or because of, editorial changes.

Regular publication is one main requirement for proper indexing and without it, a journal will never attract papers of high quality.

Today, there are a great number of well-respected journals where papers produced by members of this Institute can be and, in fact, are being published.

On the other hand, a traditional journal such as the “Memórias do Instituto Butantan” should not be discontinued. Therefore, by an agreement between the Board of Directors of the Institute and the Editors of the journal, “Memórias do Instituto Butantan” will be maintained as an official record of the Institute’s activities within its three technical areas: scientific development, technological development and production, and cultural development. In this way our institutional memory will be preserved in a country where tradition is often much disregarded. Eva Maria A. Kelen, Editor-in-Chief (MEMÓRIAS DO INSTITUTO BUTANTAN, 1995, p.5)

Without going into much commentary, it is very significant that the editors felt compelled, by this point, to publish in English for the journal to have any relevance and, lacking in quality English submissions, preferred to shut it down rather than to continue in Portuguese. What was supposed to be an institutional journal hemorrhaged its best research to the point that it could not recover. In comparison, *Memórias do Instituto Oswaldo Cruz* was reinvented in 1980 as an open journal, first preferentially and then normatively in English, which was by 2013 being outsourced to a US firm for revision/copyediting services, the result of which was, in great contrast, the highest impact factor of any journal in Latin America (MEMÓRIAS DO INSTITUTO OSWALDO CRUZ, 2013).

### **3.6.4 Contemporary Brazilian milieu of scientific journals**

Thus it would seem pertinent to focus on this lingua franca-internationalization movement that was sweeping with such effect over

the landscape of Brazilian scientific literature. Given that a number of important extant Brazilian Tropical Medicine-related journals began publishing around 1967, rather than describe each one individually, this year was selected as a starting point for a diachronic (46-year) group comparison of the presence of English (Table [1], below).

Along with a continuation of the three previously-examined journals, *Memórias do Instituto Oswaldo Cruz* (MIOC), *Anais da academia Brasileira de Ciências* (AABC) and *Memórias do Instituto Butantan* (MIB), data were included from the following journals: the *Revista do Instituto de Medicina Tropical de São Paulo* (RIMTSP), which was founded in 1959; the *Revista da Sociedade Brasileira de Medicina Tropical* (RSBMT) (Uberaba) and the *Revista de Saúde Pública* (São Paulo), which were created in 1967; the *Revista Brasileira de Pesquisas Médicas e Biológicas* (Ribeirão Preto), which started in 1968 and would later become the *Brazilian Journal of Medical and Biological Research*, as well as the *Revista de Patologia Tropical* (RPT) (Goiânia), which came out in 1972. Finally, *Cadernos de Saúde Pública* (CSP) (Rio de Janeiro), although having begun only in 1985, was included since it, like MIOC, is published by the Oswaldo Cruz Foundation, and it seemed worth investigating whether it had followed a similar language policy. Although these journals are all important, this comparison should not be understood as including the full range of Tropical Medicine, much less biomedical literature, in latter-20th-century Brazil.

**Table 3.8:** Comparison of the percentage of English in prominent Brazilian scientific and medical journals from 1967-2012<sup>136</sup>

continued...

YEA	JOURNAL								
	MIO	AAB	MI	RIMTSP	RSBMT	RS	BJMB	RP	CSP
R	C	C	B	*	*	P	R	T	*
1967	0	70.8		25	0	4.5			
1968	0	47.5		30	0	0	72.7		

<sup>136</sup> Legend: MIOC = *Memórias do Instituto Oswaldo Cruz* (1909-); AABC = *Anais da Academia Brasileira de Ciências* (1917-); RIAL = *Revista do Instituto Adolfo Lutz* (1941-); RIMTSP = *Revista do Instituto de Medicina Tropical de São Paulo* (1959-); RSBMT = *Revista da Sociedade Brasileira de Medicina Tropical* (1967-); RSP = *Revista de Saúde Pública* (1967-); BJMBR = *Brazilian Journal of Medical and Biological Research* (1967-); RPT = *Revista de Patologia Tropical* (1972-), CSP = *Fiocruz' Cadernos de Saúde Pública* (1985-). Black cells indicate no publication that year; grey cells indicate data not obtained; red cells indicate English <85%. For an explanation of MIB after 1994, see section 3.4.3 above, (\*) = Based on incomplete information for that year: MIB 1971= 8 of 11 published articles consulted; MIB 1975= 13 of 21 articles; RIMSTP, RSBMT and CSP based on 1<sup>st</sup> issue of each volume; BJMBR 1974 = 2 of 6 issues; BJMBR 1975 1 of 6 issues; RPT: after 2007 all titles appeared in Portuguese only regardless of actual language of publication, thus only the original articles in these years were confirmed.

continuation...

1969	0	60	36	54.5	0	0	48		
1970	16.6	72.2		27.2	0	0	40.8		
1971	13.7	33.3	12.5*	45.4	16.6	0	57.1		
1972	8.3	42.8		30	12.5	11.4	43.9	2.3	
1973	16.1	52.1	9.5	30	0	0	50	7.9	
1974	6.4	61.9		50	0	0	37.5*	2.2	
1975	0	70	0*	33.3	28.5	0	45*	7.1	
1976	3.7	68.4	0	10	0	0	47.5	0	
1977		57.1		36.3	0	3.7	39.2	0	
1978			19.2		0	0	42.3	6.3	
1979		65		22.2		0	35.9	8.3	
1980	31.2	50		12.5	5.2	1.8	60	0	
1981	34.8	67.7	14.2	28.5	7.1	0	100	0	
1982	37.2	62	31.8	44.4	0	0	100	0	
1983	50.9	50	4.1	40	28.5	0	100	10	
1984	56.5	75		0	41.6	0	100	0	
1985	37.1	57.1		11.1	25	4.3	100	0	0
1986	61.2	52.9		9.0	28.5	5.2	100	0	0
1987	84.6	63.6	66.6	72.7	16.6	13.6	100	0	0
1988	78.2	61.5	0	50	20	10.8	100		0
1989	55.8	76.9	0	100	42.8	4.4	100	5.5	0
1990	98.9	53.8	25	50	8.3	12.9	100	8.3	0
1991	99.4	71.4	33.3	60	28.5	8.5	100	0	0
1992	93.8	37.5	25	58.3	26.6	10.6	100	6.2	0
1993	99	36.3	60	37.5	23.0	16.67	100	0	0
1994	98.5	25		50	33.3	1.5	100	0	5.8
1995	100			100	40	19.2	100	0	0
1996	100	87.5	100	100	100	12.7	100	0	14.2
1997	99.3	81.8		100	26.3	10.9	100	5.8	8
1998	99.3	100	100	100	11.1	14	100	10	0
1999	100	100		100	36.8	7.2	100	5.2	4.7
2000	100	100	100	100	16.6	13	100	0	13.3
2001	100	100		100	12.5	16.7	100	4.3	4.1



	conclusion...								
2002	100	100	100	100	35.7	11	100	11.1	12.1
2003	100	100		100	31.5	<b>31.9</b>	100	15.3	5.2
2004	100	100	100	100	40.9	66.7	100	11.1	9.8
2005	100	100		100	22.7	67.1	100	5.5	14.6
2006	100	100	100	100	23.8	62.1	100	3.3	3.4
2007	100	100		100	26.0	71.1	100	19.3	14.2
2008	100	100		100	36.8	78.1	100	17.3*	8.6
2009	100	100		100	15.7	96.3	100	0*	20
2010	100	100		100	30.7	99.3	100	12.5*	21.7
2011	100	100		100	35.4	99.3	100	18.2*	27.2
2012	100	100		100	100	88.3	100	25.7*	50

The inclusion criteria for this compilation were every original article from every issue between 1967-2012, except where a printed copy or online data was not available, for MIOC, AABC, MIB and BJMBR. For CSP, RIMTSP and RSBMT, however, only the original articles from the first issue of each year were examined. RSP and RPT were to follow the latter data-collection pattern, but since the results varied too greatly from year to year, every piece credited with (an) individual author(s), whether original article, review, research note etc. was verified to provide a more accurate idea.

A few points should be made about these data:

- As seen already in Chapter 2, *MIOC* became virtually all English (98.9%) in 1990 (under editor Eloi Garcia<sup>137</sup>), a 43% increase over the previous year; it became fully English only beginning in 1999 (under editor Hooman Momen<sup>138</sup>);
- *AABC* became English-only beginning in 1998, following a dip after 1991 and a leap in 1996 (or possibly in 1995);
- *MIB* became English-only only after it had been transformed into a biennial institutional report following the 1993 volume, staying that way until the end of its run in 2006;

<sup>137</sup> Tenure 1989-93. MEMÓRIAS (2015) <http://memorias.ioc.fiocruz.br/memorias-board> Accessed 28.07.2015.

Lemos (1993:164) Describes how Garcia's preference was for English articles with the presentation of Portuguese articles permitted only at the editor's discretion. He then contrasts Garcia's policy with the original 1907 decree to form Memórias, which stipulated that although articles were to be translated into various languages, there must always be a Portuguese original. Of course this bylaw had already been systematically violated since 1956.

<sup>138</sup> Lemos 1993:164

- *RIMTSP* took a sudden leap to English only in 1995, up 50% over the previous year;
- *RSBMT* became English only in 2012 (and has remained as such through 2016, as confirmed by the first issues of each year), although the trajectory is a bit misleading, since the English average for 2011, considering all content in every issue, was 68.1% (vs. 35.4% in the table); complete analysis of this year indicates a smooth curve toward English-only by issue 6;
- *RSP* has been virtually English only since 2009, which was precipitated by sharp rise after launching a supplemental electronic English version on its website and on its SciELO page in 2003<sup>139</sup>; the reduced total in 2011 was due to a single Portuguese-only special issue;
- Although *RPT* generally hovered at 15% or more English since 2007, it was the least impacted journal in the entire group; one factor in this outcome may be that the journal has never been included in SciELO, unlike every other journal analyzed in this table (except MIB, which was no longer publishing original research articles by 1997, when SciELO was founded)
- The leap observed in *CSP* between 2011 and 2012 was sustained afterward, but did not increase; of all content in the first issue of each year 2013-16, the English average was between 36 and 48%.

Thus, although no journal was consistently over 85% English in 1980, five of the remaining eight were by 1996, and this number grew to six by 2012; moreover, after this point only one of these journals was much under 50% English.

To determine whether these definitive changes to an English-only stance resulted from the ‘natural’, de facto linguistic migration of authors or were policy-driven impositions by editors is more complicated than it may at first appear. Although a careful examination of the language trends and could pinpoint a time and paratext might provide the ‘smoking gun’ of an explicit new policy, in some cases a definitive answer can only be obtained in a personal interview. For example, only

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<sup>139</sup> “the Journal’s Scientific Editorial Board has offered the authors the opportunity of publishing their scientific articles (originally published in Portuguese or Spanish) in an English version. This version, published only electronically and simultaneously to its regular version, will be available in the Revista’s website. Full texts in English will be also available in the SciELO data base through links in the regular version.

Aware that English is now science’s usual language, we hope this initiative will assure international and indiscriminate access to published texts and thus widen the discussion already promoted by our publications.” (GOLDBAUM, 2003, p. 395-6, emphasis added)

in speaking with José Coura (*MIOC* editor 1980-85, 2001-06) directly could it be determined that English only became a set policy under Hooman Momen (Appendix B: question 28<sup>140</sup>).

### ***3.6.5 Revista Brasileira de Pesquisas Médicas e Biológicas/ Brazilian Journal of Medical and Biological research.***

However, unlike the rather inexplicit movement in *Memórias do Instituto Oswaldo Cruz*, a singular, policy-driven change occurred in one journal not yet discussed from the table above. The *Revista Brasileira de Pesquisas Médicas e Biológicas* was transformed into the *Brazilian Journal of Medical and Biological Research* in 1981 – the first Brazilian biomedical journal that could be found to conform to an English-only policy. The *Revista Brasileira de Pesquisas Médicas e Biológicas* began in 1968 under the leadership of Michel Jamra, of the University of São Paulo School of Medicine<sup>141</sup> (*BJMBR*, 1999, p.1455). The journal would later run into severe financial difficulties during the recession of the late 1970s and would have ceased operations at the end of 1980 if it had not been not acquired by the recently-created Associação Brasileira de Divulgação Científica, whose purpose was to create a journal of international standing to showcase English-only Brazilian biomedical research. Thus, it was reinitiated in 1981 with Lewis Joel Greene, an American professor at the University of São Paulo-Ribeirão Preto as a chief editor (who remains editor today). (SciELO, 2016)

The irony is that, as laid out in the initial editorials of 1968 and 1981, the goals for the two iterations of the journal are almost identical: the main difference being the degree of insistence upon English. Since the details of these editorials are emblematic of a definitive shift in attitude toward English in the Brazilian scientific community, which was also shared to a great extent by the IOC in its reformulation of *Memórias* in 1980, it seemed appropriate to include them in full, along with the 1980 farewell editorial, in Appendix F (in which the 1968 and 1980 editorials have been translated). However a number of their main points will be discussed here.

In the 1968 editorial, Jamra reproduces a convocation letter he sent to researchers throughout Brazil “to found a new journal *written in*

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<sup>140</sup> “Um iraniano foi editor das Memórias, Ele foi educado na Inglaterra, e colocou a revista em língua inglesa. Em seguida, quando assumi, continuei.”

<sup>141</sup> with Carlos Chagas, Jr. as a member of the journal’s Scientific Council (*Revista Brasileira de Pesquisas Médicas e Biológicas* 1968 1(1): front matter)

*languages with international reach, as well as in Portuguese*". (JAMRA, 1968: my translation, emphasis added)<sup>142</sup> He begins with a sort of extended syllogism consisting of five premises:

Given that Brazilian scientific production in the biomedical field has reached a *good level of both quality and density*:

given that the idea of publishing in English, French and Spanish, as well as in Portuguese, *has become quite acceptable* for Brazilian scientific production;

given that *North American and European scientific journals have been overloaded* with an excess of submitted articles in the last two years, a circumstance which has led to the postponement of papers sent from other countries, including Brazil;

given that the good production of good Brazilian laboratories and research centers is dispersed in hundreds of specialized foreign publications due to the inconvenient fact that we have no organ to showcase the best of national production in the biomedical field;

given that the above circumstance impedes awareness of the field of activity of every scientific center in the country and an easy assessment of the country's scientific production in the biomedical field. (JAMRA, 1968: my translation, emphasis added)

This list is followed by the resulting resolution, i.e. the establishment of the journal "*with high graphic and editorial standards*" (by a group of researchers and professors to be named below), which is immediately followed with the established language policy: "said journal will receive original articles in Portuguese, English, French, Spanish or German, *preferably in Portuguese or English*." After naming who will occupy the various editorial positions Jamra reports that the journal's 10,000 monthly copies will be distributed to scientists and centers throughout Brazil for "subsequent subscription", as well as to "the principal schools of medicine and medical and biomedical research

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<sup>142</sup> Rather than multiply footnotes, please refer to Appendix F for the originals, which appear in a two-column format along with the translations.

centers of the Americas, Europe and some centers in Asia and Africa, with which we count on the collaboration of government agencies". He finalizes "Confident in this demonstration of our capacity and certain that we will receive your support, we are, Sincerely yours..." (all, JAMRA, 1968: my translation, emphasis added)

This brief text is richly indicative of beliefs that seem to have been shared by the Brazilian scientific community, proof of which is the journal's subsequent success, meaning that its call indeed resonated on a national scale, resulting in the collaboration it was seeking. The first of these beliefs, held by both Chagas Jr. and Coura, is that Portuguese is not "a language of international reach" and, thus, for Brazilians to participate in international science, they will have to acquire/utilize one or more such languages. This also implies rather explicitly that current Brazilian scientific literature (since it, apparently, was not embracing such languages) occupied a marginal position in the system of world scientific literature. This assertion was corroborated in Chagas Jr.'s interview when it was implied that the *Anais* were not recognized in important journals. (FUNDAÇÃO GETÚLIO VARGAS, 1977, p.78)

In the first two premises, after stating that Brazilian research has (finally) reached a good (enough) level (for export), he suggests that it has (recently) become acceptable (in Brazil) to publish in English, French and Spanish<sup>143</sup>. Although named later, sort of as an afterthought, among the approved languages, German is excluded from the main state-of-the-art. And although named here, Spanish is, nevertheless, last and not named among the officially preferred languages. This further reinforces the idea that regional solidarity was of low priority compared to interfacing with the power centers of International Science, i.e. the US and Western Europe, which are named as priority targets for the journal (the thinly veiled "in the Americas and Europe" notwithstanding). The faint attempt at inclusivity "*and some centers in Asia and Africa*" also implies that what could be considered self-marginalization was extended to the entire global south, (1) resonating with Jerome Kassirer's comment that "There is no science there"<sup>144</sup> and (2) with a little malice, *Asia* could be understood as 'Japan' and *Africa* as 'South Africa', i.e. the most industrialized and 'westernized' points, with no expectation of a return from the rest.

Perhaps even more important is the unintentional irony attached

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<sup>143</sup> It is interesting that this same trio of languages was what also appeared in the post-1980 *Memórias* during the 'abstract period', the twilight of multilingualism in the journal.

<sup>144</sup> Former editor of the *New England Journal of Medicine*; quoted in DeKoker 1995:97.

to what can be found between the lines “A *vista de* a produção brasileira [...] *já ter alcançado* bom nível...” (Given that Brazilian production [...] has reached a good level) and that publishing in foreign languages “has become quite acceptable” (“*já se tornou bem aceita*”). It is clear that Jamra is talking about now and not a time in the distant past, such as 1909, for example. To assert that production has reached an export level and that publishing in foreign languages is acceptable ‘today’ is also to assert the opposite: that it wasn’t so ‘yesterday’.

This denies the historical reality that Brazil had been producing not only export-quality but international prizewinning biomedical science for the previous, very turbulent half century, not to mention that anyone familiar with the principal Brazilian scientific journals since *Brasil-Medico* should have recognized that, in their own ways, most had been grappling with the question of how to balance foreign and national language and foreign and national readerships. *Memórias do Instituto Butantan*, for example, had decided on a domestic-facing posture<sup>145</sup> but with international access provided in the form of bilingual (PT/EN) paratext and consistent use of English abstracts, before *Memórias do Instituto Oswaldo Cruz* or the *Anais da Academia Brasileira de Ciências* had taken much notice of the language. The strategy of *Memórias do Instituto Oswaldo Cruz*, on the other hand, was to plant one foot at home and the other in Europe, not only with an avant-garde multilingual translation policy, but with exceedingly “high graphic and editorial standards”. The *Anais*, however, set aside translation almost completely and adopted a policy of monolingual articles in a number of languages long before this became the practice in *Memórias do Instituto Oswaldo Cruz*. In fact, foreign language was so “acceptable” in the *Anais* that a higher percentage of English articles could be found there than in the *Revista Brasileira de Pesquisas Médicas e Biológicas* while it existed (3.4.4, Table [1]). A further problem with the premise “has become quite acceptable” is (the *Anais*’ high percentage of English notwithstanding) that in the decade prior to this editorial, foreign language was actually at the lowest ebb in the history of *Memórias do Instituto Oswaldo Cruz* and was only somewhat higher in *Memórias do Instituto Butantan*.

The *Revista Brasileira de Pesquisas Médicas e Biológicas*’ stated

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<sup>145</sup> Generally speaking; none of these journals maintained a consistent language policy until the Brazilian Journal of Medical and Biological Research was established with its rigorous *de jure* approach. This contrasts with a “preferentially in English” policy, which could only result in a *de facto* majority.

preference for *Portuguese or English* in 1968, also demonstrates that the field of language options was being redefined. Despite the fact that “French, Spanish and German” (in that order) were to be “received”, the real options were framed as either the national (local) language, Portuguese, or the (“*the*”) foreign (international) language, English. And, in retrospect, it would seem as if Portuguese was allowed more as a politically expedient concession, a recognition that conditions were not yet propitious to wipe the slate of everything but English.

Jamra’s third premise, that Brazilian articles are not getting published due to an “an excess of submitted articles” in North American and European journals, is also revelatory. It constitutes a frank admission of a heavily colonial arrangement within the international scientific order in which the “other countries, including Brazil”, i.e. the entire world outside of Anglo-America/Western-Europe, had become peripheral client regions, dependent on this Center for standards of governance and the infrastructure of practice (in a word: scientific “civilization”). This Center had become the Keeper of Science, controlling the channel of communication (the *bona fide* scientific literature) such that the institutions in the periphery could not communicate among themselves without going through the colonial languages (among which English, as in Orwell’s dictum, had come to be “more equal than others”<sup>146</sup>) and the editorial gatekeepers.

As in a colonial economy:

- the raw goods (i.e. labor – the best scientific production)
- flow to the center (i.e. freely given in hopes of being recognized as legitimate by the peers)
- which then fabricates an industrialized product (the serious, state-of-the-art scientific literature – the equipment for which is unavailable in the periphery<sup>147</sup>),
- which is then marketed to the periphery.

In this closed economic system, curiously, “it would appear that what leads the outsider to consider the center favorably is the very mechanism that excludes him” (HANES, 2013, p. 240, see also Basnett

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<sup>146</sup> *Animal Farm* (1945), chapter 10.

<sup>147</sup> The ‘equipment’ to produce relevant scientific literature could be: literal, such as state-of-the-art labs and printing facilities; economic, such as hefty, consistent government funding; cultural, such as a historical record of discoveries and prize winning, a pre-established distribution network (thanks to the cultural hegemony produced by imperialism) and ownership of the language of publication (and/or genre conventions), which has international currency (again thanks to imperial policy). What part of this may be attributable to colonialism rather than to industrialization is possibly a moot point since the two seem to feed off each other.

and Trivedi (1999, p. 6-9). Success in the periphery comes from being recognized in the center: it would be difficult to find a more outstanding example of this than the national consecration of Oswaldo Cruz after Berlin 1907 compared to his vilification and the open revolt against his measures in 1903-04. Thus by successfully establishing and enforcing “international standards” (and later, the “indexing” mentioned by Chagas Jr. in 3.4.5, now transformed into “ranking”) what was called ‘Colonial Medicine’ into the 1940s and 1950s in Europe (ITMA 2014, p.1;14;16; 21; 22; 82; see section 3.5.3 for details) was able to achieve what Alexander Kiossev (2011) calls ‘hegemony without domination’.

Nevertheless, this is not to say that Jamra’s admission amounted to servility, since he first diagnoses the problem: “the *good production of good Brazilian laboratories and research centers is dispersed in hundreds of specialized foreign publications due to the inconvenient fact that we have no organ to showcase the best of national production in the biomedical field*”. Again, this seems to ignore the history of other national journals. Although it might be argued that both *Memórias* were institutional journals and, hence, not ‘national’ per se, the *Anais* were open, except for the restriction that submitted papers had to be sponsored by a member<sup>148</sup>, not to mention the fact that the journal had been edited by biomedical specialists for most all of its existence. Jamra then explains how such an arrangement was injurious to Brazilian science: “the above circumstance *impedes awareness of the field of activity of every scientific center in the country and an easy assessment of the country’s scientific production...*” This assessment clearly demonstrates the power of such a system to disrupt not only inter-peripheral communication but even on an intra-national level.

Thus the journal itself was a project to combat or mitigate this state of affairs. Jamra’s approach, however, was not to overthrow this system, but rather to address the incohesive state it induced on a local level, i.e. for the nation to become a viable, unified participant in it. This fits snugly in Kiossev’s (2011) definition of self-colonization: “in this desire [of “Lateral” communities to no longer stay lateral] they had already interiorized the concepts, values, and symbolic hierarchies of the colonizers.”

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<sup>148</sup> “A apresentação dos originais firmados por pessoas estranhas à ACADEMIA deverá ser feita exclusivamente através de um Membro Titular ou Associado da mesma, ao qual caberá a responsabilidade pela correção e pelo nível científico do trabalho.” (Anais 47(3/4):front matter 1975)



In *Memórias*' re-inauguration editorial of 1980, Coura both confirms the vicious cycle in this still-current system and takes a more reproachful attitude toward those who participate in it:

It has become routine among authors of works produced in developing countries, among which Brazil stands out, that works of better quality must be published in foreign journals of greater circulation and “credibility”. Nothing more incoherent and unpatriotic – a self-devaluation by our best authors, making us weaker and weaker, less consulted and, therefore, of lower circulation and “credibility”, which downgrades national science. On the other hand, the increasing contributions to foreign journals make them stronger and more economically independent, accruing more and more value to the countries that publish them in a true vicious cycle, which is for us alone to correct. (COURA, 1980, p. 5, my translation<sup>149</sup>)

Jamra and Coura see the same problem and produce similar modernizing remedies, i.e. open journals featuring international-quality science published at home, which are expected to excite international interest while boosting Brazilian unity and prestige. Although Jamra openly proclaims the language policy to correspond with this new journal, accepting articles in Portuguese, English, French, Spanish or German, but preferring Portuguese or English, only in the instructions to authors column of *Memórias* can the language policy be found: “Manuscripts (2 copies) in English, Spanish, Portuguese or French” (*Memórias do Instituto Oswaldo Cruz* 75(1/2) 1980: front matter). Thus similar ranges of languages are accepted, although *Memórias* excludes German and sets no preferences. In practice, both journals quickly become de facto English-majority, thus demonstrating that in Brazilian

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<sup>149</sup> Tornou-se rotina entre autores de trabalhos realizados em países em desenvolvimento, entre os quais destaca-se o Brasil, que os trabalhos de melhor qualidade devem ser publicados em revistas estrangeiras de maior circulação e “credibilidade”. Nada mais incoerente e antipatriótico – a desvalorização dos nossos próprios pelos nossos melhores autores, tornando-os cada vez mais débeis, menos consultados e portanto de menor circulação e “credibilidade”, desmerecendo a própria ciência nacional. Por outro lado, a valorização das revistas estrangeiras com os melhores trabalhos torna-se cada vez mais forte e economicamente independentes, valorizando cada vez mais os países que as publicam, em um verdadeiro ciclo vicioso, que somente a nós cabe corrigir.

scientific opinion of the 1980s, English was becoming generally equated with international communication. Perhaps the main difference in these two editorials is in rhetorical attitude: while Jamra surmises that it is for lack of a proper organ that Brazilian research dissipates, Coura stipulates that Brazil must not continue to contribute to a parasitic system which will lead to its downfall.

Of course, depending on the scale used to examine them, colonizing systems can be found at almost every social level: local, national or international. Although Coura jokes that the “Nobel Prize of the third world” is to succeed in publishing an article in *Nature* (Appendix B: question 45<sup>150</sup>), there are many such pantheons, such as the Academia Brasileira de Letras, who by immortalizing both Oswaldo Cruz and Carlos Chagas, Jr. legitimized their scientific efforts from a cultural perspective. Moreover, in several of the *MIOC* editorials analyzed above (section 3.4), the IOC was quite uninhibited in discussing its ‘crusade’ and ‘civilizing mission’ of bearing modern medicine to the darkest corners Brazil, in a page that could have come from Columbus’ book.

The only point to be brought up from Jamra’s 1980 farewell editorial is its description of the extreme financial duress due, principally, to a lack of government investment (via academic funding agencies) in the journal. This hardship was exacerbated by a severe national recession, and came to the point that submitting authors were voluntarily paying the printing costs of the journal. This reveals the great depth of solidarity that was ascribed to the journal’s goals by sectors of Brazilian scientific community and the burdens they were willing endure to “appear” internationally.

However, the 1981 inaugural editorial of the *Brazilian Journal of Medical and Biological Research* seems to suffer from an even greater level of amnesia than its 1968 predecessor, despite beginning with the caveat: “The idea of creating a Journal for the international promulgation of Brazilian biomedical research *is not new* and has been the subject of *frequent discussions by the scientific societies* active in the area.” (BJMBR, 1981, p. 14, emphasis added) It is immediately clarified that the idea is not new to *their scientific bodies*: “*The idea actually became a fact* when representatives of the Societies of Biochemistry, Biophysics, Clinical Investigation, Pharmacology and Experimental Therapeutics and Physiology met in early 1980...” (BJMBR, 1981,

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<sup>150</sup> O indivíduo que fica vendo fator de impacto, um dia poderá ganhar o Prêmio Nobel do terceiro mundo, que é... publicar um artigo no *Nature*. (risos)

emphasis added). Thus, even the history of the journal that is being replaced has been wiped away, since Jamra's purpose in 1968 was "to found a new journal *written in languages with international reach...*"

In the same paragraph it describes how the happy accident of the *Revista Brasileira de Pesquisas Médicas e Biológicas*' demise moved the body to assume this journal rather than create a new one. It is described that this move was especially pleasing to the Directors of the National Research Council (CNPq), indicating that the new body had powerful institutional backers in Brasília. The final brief paragraph lists the journal's sources of financial support: CNPq, FAPESP and BIREME, all at the top level of national Brazilian scientific effort.

Thus, this was a well-funded prototype publication, organized by five important scientific societies with an inflexible, de jure language policy: "manuscripts should be submitted in **English**" (BJMBR, 1981, p.1): front matter, original emphasis). This is the first observed occurrence in a Brazilian scientific journal where no concession had been made to Portuguese. Thus the journal was positioning itself as only for the internationalized elite, consolidating the languages of consumption and production in *the lingua franca*. It is also important that this happened just a year after the rebooting of *Memórias do Instituto Oswaldo Cruz*.

Thus, in summarizing this section on *Memórias*' Brazilian milieu of journals, a few conclusions are shared by these spokesmen in the period from the end of the 1960's until the early '80s:

- A very real and dangerous cycle of authorial brain-drain had been engendered by the rising prestige of international journals and was threatening to extinguish decades of hard-won Brazilian scientific prestige; in fact, it had already succeeded in erasing such memory, if the attitude displayed by Jamra and the BJMBR founders is taken at face value; a general air of institutional stagnation seemed pervasive, and period of reformation or revolution seemed imminent;
- German was basically no longer regarded as an important scientific language;
- Spanish was now on the table as a recognized option among international languages, although this seems to have been more of an olive branch in most cases, although trilingual (PT, EN, SP) abstracts have since become standard practice in some of the journals;
- English, in more or less explicit terms, is by this point held as the true legitimate scientific lingua franca; variance only lies in the speed and degree of conformity to this perceived reality;
- Conversely, Portuguese was seen by none as an internationally

relevant language, but was proscribed in policy only by the courageous few (i.e. those in a position of strength, such as Chagas, Jr. and the combined scientific societies behind BJMBR) but not by consensus-makers, such as Jamra and Coura, who were working from more precarious positions.

However, this final point and those ‘courageous few’ receive a proper flogging in a sardonic 1997 editorial in the *Revista de Saúde Pública*, which, with predictable irony, was itself English only (or virtually so) 12 years later:

But how can we dress our research in international clothes? For some, it’s enough to write the manuscript and, logically, publish it in English. Behold the swarm of new “Brazilian Journals” [original in English] and even traditional publications that have transvested even their own internal correspondence<sup>151</sup>. For others there is the need, which borders on fanaticism, to insert their work in the foreign press. Obviously, of course, that of the first world [...] To try to give a global character to a theme that, by its intrinsic nature, is regional would be to force the situation. It would violate the vocation of scientists in the so-called third world. Now, this third world has many problems, it’s true. But it will have to find its own solutions. In the attempt to “internationalize” research activities, there is often a disservice done to the very population that underwrites them. (FORATTINI, 1997, p. 115, my translation<sup>152</sup>)

Simply because this criticism of the ‘heedless stampede’ toward English and foreign journals has been practically obliterated in the two decades since it was written does not necessarily invalidate it. Similarly,

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<sup>151</sup> See Hanes 2013:241 for a confirmation of the absurd lengths that this practice engenders.

<sup>152</sup> Mas, como dar à nossa pesquisa roupagem internacional? Para alguns, bastará redigir o manuscrito e, logicamente, publicá-lo em idioma inglês. Haja vista o pulular de novos “Brazilian Journals” e mesmo de periódicos tradicionais, assim transvestidos até na sua própria correspondência interna. Para outros, há a necessidade, que beira o fanatismo, em inserir o trabalho na imprensa estrangeira. Obviamente, é claro, do primeiro mundo.... Pretender dar caráter global a tema que, pela sua natureza intrínseca, é regional, será forçar situações. Será selecionar negativamente as vocações científicas do assim chamado terceiro-mundo. Este tem muitos problemas, é verdade. Porém, as soluções terão que ser encontradas por ele mesmo. No afã de “internacionalizar” as próprias atividades de pesquisa, muitas vezes presta-se desserviço à própria população que as custeiam.

Dr. Coura's righteous indignation against Brazilian 'brain (actually, *article*) drain' in the 1980 re-inaugural editorial of *Memórias*, which he reneged as "arrogance"<sup>35</sup> years later (Appendix B: questions 44-46), is another case of the same. The parallels between these two editorials are quite close; Coura almost exactly forecasts Forattini's expression that the third world "will have to find its own solutions" by stipulating that the situation "is for us alone to correct" (Coura 1980:5, my translation).

Although Forattini, Coura, Jamra and the BJMBR board all wanted to put an end (or different ends) to what they perceived as a neocolonial cycle within the scientific literary system and rejuvenate Brazilian production, perhaps it was Meneghini and Packer who, with the founding of the SciELO database of Brazilian journals, also in 1997, have actually had the greatest collective effect on the visibility of Brazilian (and 'third world') science by fostering 'international standards' of periodicity and formatting among member journals, without enforcing a specific *de jure* language policy (see HANES, 2013, p. 243-44). However, although they aspire to "set a trend towards a more balanced use of languages in scientific publications, [which] might help to reverse the decline of other languages in international scientific communication", there is a certain amount of ambiguity in their position, since they go on to state that "the ability of scientists to communicate in *the* scientific lingua franca is part of a country's scientific capabilities" (MENEGHINI; PACKER, 2007, p.113-114, respectively, emphasis added). Notwithstanding the relevance of SciELO's position to themes involved in this study, for the sake of focus and brevity, any analysis of its history and effects on regional solidarity, as well as its role as an advocate for open access in scientific literature, will have to be tabled.

### 3.7 INTERNATIONAL MILIEU

In the following section, the language trajectories of two specific journals that could be described as having a special relationship with the IOC will be examined: the *Annales de l'Institut Pasteur* and the *Bulletin of the World Health Organization*. This discussion will be followed by a brief survey of world Tropical Medicine literature from the point of view of the Antwerp Tropical Medicine Institute's periodical catalog, detailing, in light of the discussion in the preceding section about the colonial origins of the discipline (3.4.5), on the discipline's nomenclature over time, as well as the general dearth of multilingualism to be found in the various journals.

### 3.7.1 *Annales de l'Institut Pasteur (1887-1972)*

The *Annales*, launched, a year before the actual founding of the Institut Pasteur, (LE MOS, 1993, p. 162) “were the first periodical in France to specialize in microbiology [...It is] a collection which contains within its pages the entire panorama of the Pasteurian scientific era.” (LEGOUT, 2008, p. 23) If the entire era is reflected in its pages, then its language practice and policy will be of singular importance. Given that it was produced in a culture with a colonial language of the highest level of dissemination and cultural currency, one might expect its resistance to the penetration of other languages, particularly competing colonial languages, to also be of the highest order. Thus it would be no exaggeration to consider the journal, which had been considered “the international lighthouse of French research” (BRIQUET DE LEMOS, 1993, p. 162) among the most important European markers in the study of the advance of English as the lingua franca of science. However, only in 2008 was the first ever historical investigation of the journal undertaken, a three-page article for a special issue entitled “120 Years of The Institut Pasteur and 120 Years in Publishing” in *Research in Microbiology*, the *Annales*’ final “direct descendant” (ELSEVIER, 2016).

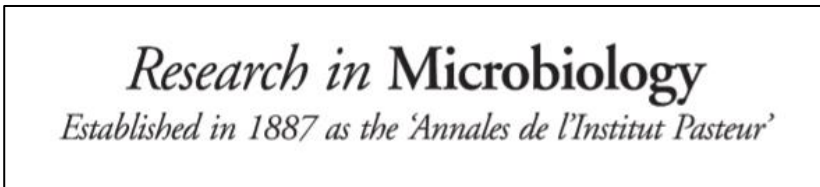
In this article, Legout recounts the chain of drastic decisions made by the editors since the 1970s in an effort to keep this publication viable, attributing two causes to its decline in readership: “the increasing role of the English language in scientific communication and literature and the creation of other Anglo-Saxon journals in microbiology and immunology.” (LEGOUT, 2008, p. 25) In 1973, two important decisions were made: to officially accept articles in English and to split the *Annales* into two subject-specific journals: *Annales de Microbiologie* and *Annales d'Immunologie*. A third title, *Annales de Virologie* was added in 1980. These journal titles became bilingual in 1985 and the number of English articles in them increased. Nevertheless, “Despite these changes, the Directorship of the Institute, led by Maxime Schwartz, noted a lack of international recognition of these journals” (LEGOUT, 2008, p. 24), which led their retitling in 1989 as *Research in Microbiology*, *Immunology* and *Virology*, respectively, with French replaced by English as the official language.

This decision generated controversy in France among politicians and the scientific community, resulting in the creation of the French-language journal *Annales de l'Institut Pasteur/Actualites* as a new institutional periodical, which lasted until 2003 (LEGOUT, 2008, p. 26). Thus the only remaining “direct descendant” of the *Annales* is *Research*

in *Microbiology*' (ELSEVIER, 2016), which, with a subtle irony, maintains an indication of its heritage in a subtitle (see Figure 3.19 below).

The effects on Oswaldo Cruz of the fact that the Institut Pasteur had its own journal, which came to be recognized as the international lighthouse of French research, must have been considerable. Moreover, when the derivative journals were contracted to the publisher Elsevier in 1985 and their official language became English in 1989, it was unlikely that these things went unnoticed by the editorial board of *Memórias*, given that *Memórias* became 98.9% English in 1990, an increase of over 40% from the previous year.

Briquet de Lemos reports (1993, p.164) that by 1989 58% of articles in *Annales*-derivative journals were from francophone countries, of which 84% were already in English, and, as mentioned above, Legout reports that English articles were officially accepted in the new journals beginning in 1973. But was there no English in the *Annales* before this point, i.e. trend, no curve leading to these changes?



**Figure 3.18:** *Research in Microbiology* title heading (2008 159(1):front matter)<sup>153</sup>

Scanned issues of the *Annales* are available on the Bibliothèque nationale de France website<sup>154</sup> from 1887 until 1972 and tables of contents appear beginning in 1941. Beginning with the final year, the contents of one volume in each preceding decade (i.e. 1972, 1962, 1952 and 194) were examined to provide a rough idea of the language content. Although of little statistical weight, the results were impressive, nonetheless, revealing a curve beginning in 1962 (Table 3.9 below), rather than any sudden, policy-driven leap. All articles in the journal were monolingual, with no other foreign language observed

<sup>153</sup> As an aside, not a single cover image for this journal beside three 120 x 160 icons from Elsevier could be found online; not a single issue could be found for sale on Amazon.com or Abebooks.com and no Wikipedia page exists for either *Research in Microbiology* or *Annales de l'Institut Pasteur*, although there is a stub for *Memórias do Instituto Oswaldo Cruz*.

<sup>154</sup> <http://gallica.bnf.fr/ark:/12148/cb34348753q/date>. Last access 25.05.2016

besides English. Other paratext from 1972 confirms that an important shift was already underway: an English-only Table of Contents appears on the final page of the volume and English abstracts appear at the beginning of articles (with French abstracts at the end. This was different from 1962 and the other years checked (although there were two bilingual final abstracts in July 1962). In the only “Instructions to Authors” section found (1962) no mention of language of publication is stipulated.

**Table 3.9:** *Annales de l’Institut Pasteur*: diachronic presence of English one year each decade (1940s-1970s)

YEAR	VOLUMES	TOT ARTS	EN ARTS	% EN
1941	66/67	51	0	0
1952	82/83	170	0	0
1962 <sup>155</sup>	102/103	173	1	0.5
1972	122/123	161	37	22.9

Thus, although presenting very distinct language trajectories through the 1960s, the *Annales* and *Memórias*, nevertheless, share the following characteristics afterwards: (1) a radical ‘modernizing’ process between 1970-1980 designed to check journal decline, which included the opening of the journals to non- institutional authors and which resulted in a substantial rise in (untranslated) English at the expense of the local language, and (2) the culmination of this process in a fully English-only presentation (including all paratext) by the 1990s, a simple format amenable to the new online literature made possible by the digital media technologies taking root in the middle of the decade. The corporate paths they took in this process, however, differed: what had become of the *Annales* came under the large private Amsterdam-based publisher Elsevier in 1985, while *Memórias* aligned itself with the open-access Brazilian digital metapublisher SciELO in 1997.

### 3.7.2 *Bulletin of the World Health Organization (Geneva. 1948- )*

The first issue of the *Bulletin of the World Health Organization*, completely in English, was published in 1948 with the following line

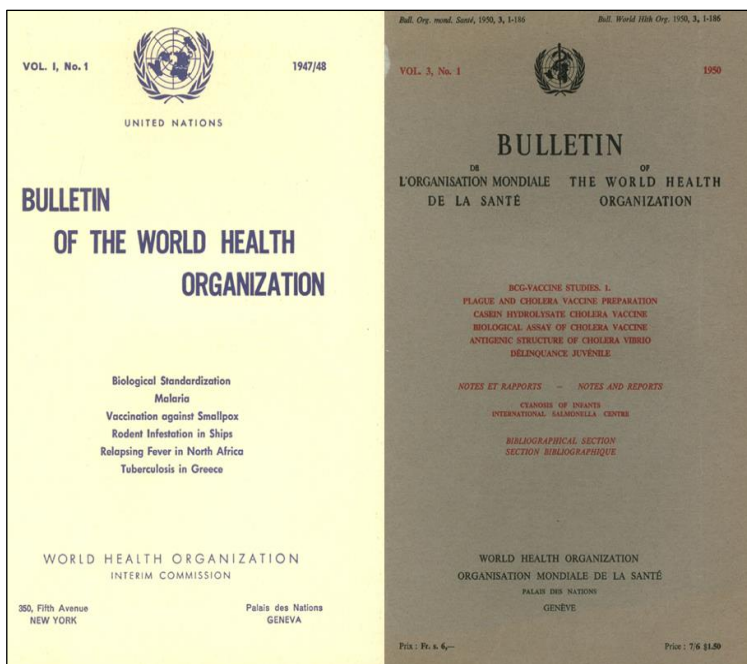
<sup>155</sup> One page missing from the Table of Contents of Tome 103 (which averaged about 14 listings per page).



opening its editorial:

[...] *To assist in developing an informed public opinion among all peoples on matters of health* — that is one of the many tasks assigned to the World Health Organization by the International Conference which was convened at New York on 19 June 1946 by the Economic and Social Council of the United Nations to lay the foundations for a single international health organization.

There can be no doubt that, along with the other sources of information opened up for modern man by scientific progress, the publication and circulation of reviews and periodicals must contribute to a large extent towards the attainment of this objective. (BULLETIN, 1948, v. 1, n.1: front matter, emphasis original)



**Figure 3.19:** *Bulletin of the World Health Organization* covers: 1(1)1948 and 3(1) 1950

Upon reading that the goal of developing “an informed public opinion among *all peoples* on matters of health...[through] *the publication and circulation of reviews and periodicals*”, the reader immediately expects to find that the new international governing body has pursued the most aggressive type of multilingual policy and organized a commensurably sizable army of translators to implement it. However, what was demonstrated in actual practice was the path of least resistance, i.e. to simply delegate the work of translating onto readers: “one world organization, one lingua franca”.

Initially based in New York “and Geneva”, as can be seen on the first cover (Figure 3.20 above), it had definitively migrated to Geneva by volume 2 (March 1949). French began to appear the following year (volume 3<sup>156</sup>), both in articles and in paratext. However, the circumstances are a little more complicated than this description would imply, due, in the first place, to the following statement found in the paratext of vol. 2 1949/50:

The *Bulletin of the World Health Organization*, published quarterly in separate editions in English and French, is the principal scientific organ of WHO, and is a successor to the *Bulletin Mensuel de l'Office International d'Hygiène Publique* and the *Bulletin of the Health Organization of the League of Nations*. (BULLETIN, 1950)

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<sup>156</sup> Volumes 2 and 3 were spread out over more than one year, i.e. 1949-50 and 1950-51, respectively.

**PUBLICATIONS OF THE WORLD HEALTH ORGANIZATION**

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**CHRONICLE OF  
THE WORLD HEALTH ORGANIZATION**

(Published in English, French, Spanish, Russian and Chinese.)

This *Chronicle* contains information dealing with the principal facts concerning the Organization, the trend of its work, the meetings of its Expert Committees and summaries of its main technical publications.

Monthly publication.

Subscription for 1948 . . . . .	10/-	\$2.00	post-free
Price per single copy . . . . .	1/3	\$0.20	" "

Specimen number sent free of charge on request.

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**OFFICIAL RECORDS  
OF THE WORLD HEALTH ORGANIZATION**

(Separate editions in English and in French.)

This publication contains the Minutes of meetings, together with the reports and documents of its principal organs: the Interim Commission; and afterwards, the World Health Assembly and the Executive Board.

It is expected that five or six numbers will be published during 1948.

Price per single copy . . . . .	1/3	\$0.25	post-free
Price for special number relating to the World Health Assembly . . . . .	2/6	\$0.50	" "

**Figure 3.20:** *Bulletin of the World Health Organization*: advertisement for parallel publications 1(1)1948: front matter

This parallel French version of the journal, according to information from worldcat.org<sup>157</sup>, only ran from 1947-50; whether every article was translated for this French edition (since there appears to have been no other English version besides the “official” version), or that only the paratext was in view, could not be determined, since no copy of the French edition could be located.

Another complication is that other parallel publications, including “Chronicles” and “Official Records” were also released beginning in 1948 (see Figure 3.21above). The *Chronicle of the World Health Organization*, as can be seen in the figure, was published in English, French, Spanish, Russian and Chinese, whereas the *Official Records* were only in separate (“but equal”) English and French versions. Again, according to worldcat.org, the *Chronicle* was apparently a continuation of another publication called *Chronicle of the Health Organization* (i.e. of the League of Nations) which ran from 1939-45, and was continued in 1959 as *WHO Chronicle*, whose language is

<sup>157</sup>[http://www.worldcat.org/title/bulletin-of-the-world-health-organization/oclc/715449195&referer=brief\\_results](http://www.worldcat.org/title/bulletin-of-the-world-health-organization/oclc/715449195&referer=brief_results). Accessed 25.05.2016.

described as English.<sup>158</sup> This indicates that these language policy decisions were built upon previous deliberation and had recent precedents. Nevertheless, certain tactics for multilingual access (however sporadic and short-lived) were attempted from the beginning alongside the English-language flagship *Bulletin*, in which French held an ostensibly equal, but practically nominal position.

In Table 3.10 (below) a selection of language data from the *Bulletin* can be found: one full volume from every year until 1960, one volume from every five years thereafter until 1995, as well as 1998, the final year before the journal went online. From 1999 the *Bulletin*, now with an additional electronic version, featured only English articles, and thus the cutoff date was set at the end of this year.

As can be seen from the data, French maintained a fairly peripheral presence for the length of the journal, rising above 20% in only three of the 22 years analyzed (all of which were before 1956) and above 10% in four others, while a single Spanish article was observed in 1955.

What these data don't show, however, is paratext.<sup>159</sup> Bilingual French/English paratext was provided from 1950 (volume 3) until 1998 (volume 76), after which the table of contents was merged into the electronic interface, with no more translation of the section names. The printed bilingual paratext always included the cover and table of contents, as well as a pre-title page presentation of varying formulation through 1977, which was revived as a copyright/subscription statement beginning in 1994, as well as occasional notices.

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<sup>158</sup><http://www.worldcat.org/search?q=Chronicle+of+the+World+Health+Organization&qt=resu> Its\_page and [http://www.worldcat.org/title/chronicle-of-the-health-organisation/oclc/7512157&referer=brief\\_results](http://www.worldcat.org/title/chronicle-of-the-health-organisation/oclc/7512157&referer=brief_results). Accessed 25.05.2016.

<sup>159</sup> The location of printing also varied over time: the journal was printed Switzerland until 1978, in England 1979-87, in Belgium (Leuven) 1988-1994, and then beginning in 1995 the notice read "typeset in France, printed in Belgium".

**Table 3.10:** Language data from the *Bulletin of the World Health Organization* 1948-1999<sup>160</sup>

YR.[VOL]	ARTICLES	%EN	%FR	%SP
1948[1]	17	100	0	0
1949[2]	34	100	0	0
1950[3]	23	91.3	8.7	0
1951[4]	21	76.2	23.8	0
1952[5]	18	77.7	22.3	0
1953[8]	34	91.2	8.8	0
1954[10]	51	90.1	9.9	0
1955[13]	59	72.8	25.4	1.6
1956[14]	47	89.4	10.6	0
1957[16]	83	88	12	0
1958[18]	61	90.2	9.8	0
1959[20]	94	89.4	10.6	0
1960[22]	67	91	9	0
1965[32]	84	91.7	8.3	0
1970[42]	117	92.3	7.7	0
1975[52]	88	100	0	0
1980[58]	82	82.9	17.1	0
1985[63]	83	95.2	4.8	0
1990[68]	104	96.2	3.8	0
1995[73]	85	95.5	4.5	0
1998[76]	124	96.8	3.2	0
1999[77]	191	100	0	0

The scope of bilingualism varies, sometimes appearing in a two-column format for notices or over-under or side-by-side format in the table of contents, while at other times, things that should logically be bilingual are not. One case is the instructions to authors, which first appear in 1959 (vol. 20) in French only, with the ironic requirement « Les articles seront redigés en français, en anglais ou en espagnol; s'il s'agit de traduction d'articles écrits en une autre langue, une copie du texte original sera jointe », (i.e. the editors need the original but the readers don't) which also indicates that there were no translation services offered. These instructions were still French-only in 1975, but then appeared in English alone from 1980 to 1998, after which they were published only on the *Bulletin* website. Perhaps importantly, the final instructions to authors from 1998 state that “Papers should be written in English or French”, demonstrating that English-only had

<sup>160</sup> Data obtained from: <http://www.ncbi.nlm.nih.gov/pmc/journals/522/>. Last access 26.05.2016. Crimson shading = English only; red = <85% English.

never actually been official policy, at least since volume 2 in 1949. Monolingual articles came to be instituted as a policy only with the electronic version, proof of which is found in the “Information for contributors” page from the 2003 WHO website<sup>161</sup>:

2.3 Languages. Papers should be submitted in English. The Bulletin is published in English; the abstracts and keywords of main articles will be translated into French and Spanish. Authors who have difficulty in preparing their manuscript in English should contact the editorial office for advice

If this policy was actually set in 1999, then it would be quite significant to this study, since this was the same year in which *Memórias* also became 100% English, leaving behind all traces of the “preference” for English announced in varying strengths since 1980.

Bibliographical Section	
Partie Bibliographique	
<p>Under the terms of Article 10 of the Annex to the Rome Agreement of 1907, the Office International d'Hygiène Publique was obliged to publish "indications bibliographiques" in the <i>Bulletin mensuel de l'Office International d'Hygiène Publique</i>. The World Health Organization, which has inherited the functions and the obligations of OIHP, will in future publish</p>	
<p>Aux termes de l'article 10 de l'Annexe à l'Arrangement de Rome de 1907, l'Office International d'Hygiène Publique était tenu de publier des «indications bibliographiques» dans le <i>Bulletin mensuel de l'Office International d'Hygiène Publique</i>. L'Organisation Mondiale de la Santé ayant hérité des fonctions et des obligations de l'OIHP, chaque numéro du <i>Bulletin de l'Organisation Mondiale de la Santé</i> contiendra</p>	
<p><b>Bulletin of the World Health Organization</b> 73 (1) 1995  <b>Bulletin de l'Organisation mondiale de la Santé</b></p>	
<p><b>Update—Le point</b></p>	
<p>Elimination of leprosy as a public health problem: progress and prospects S.K. Noorden</p>	<p>Radiological services in rural mission hospitals in Ghana J. Salguchi &amp; S.R. Collins 65</p>
<p>Prevention of colorectal cancer: guidelines based on new data S.J. Winawer, D.J. St. John, J.H. Bond, P. Razen, R.W. Burt, J.D. Wayne, O. Kordong, M.J. Collins, G.T. Bihago, R.C. Kurtz, M. Shike, S.V. Swaroop, B. Levin, P. Fraumeni, &amp; N.T. Lynch</p>	<p>A role for nongovernmental organizations in monitoring the iodine content of salt in northern India C.S. Pandey, S. Pandey, K. Anand, S.A. Wasti, S. Prakash, J. Singh, &amp; M.G. Karmakar 71</p>
<p>Lutte contre les salmonelles animales et prévention des bio-infections alimentaires à salmonelles chez l'homme Consultation CMS</p>	<p>EPIDCO, software for veterinary epidemiology training and problem-solving V. Koutou 77</p>
<p><b>Memoranda—Mémoires</b></p>	<p>Genotyping of <i>Plasmodium falciparum</i> isolates by the polymerase chain reaction and potential uses in epidemiological studies S. Vinyakosol, N. Siripoon, C. Petcharaporn, P. Petcharaporn, W. Jams, S. Thaitong, K.M. Brown, &amp; G. Shounou 85</p>
<p>Public health control of hepatitis A: Memorandum from a WHO meeting</p>	<p>Knowledge of mosquitoes in relation to public and domestic control activities in the cities of Dar es Salaam and Tanga C. Stephens, E.T. Mwanjama, M.G. Kiama, A.J. Kato, M. Kinanekegi, K. Ichimori, &amp;</p>
<p>Maladies infectieuses émergentes Mémoire d'une réunion de l'OMS</p>	<p>21</p>

**Figure 3.21:** Examples of strong and weak bilingual paratext in *Bulletin of the World Health Organization*

<sup>161</sup> June 8, 2003 is the earliest instance of the page available on the Internet Archive “Wayback Machine” (<https://archive.org/web/>, searching for <http://www.who.int/bulletin/en/>)

Other cases of full bilingualism in the *Bulletin*, i.e. where a French and English version of the same article would appear in the same issue, occasionally included research undertaken by the WHO itself (e.g. Working Groups) and certain memoranda from WHO meetings, although it appears that the norm was to produce a report in either French or English<sup>162</sup>.

The actual utility, however, of much of the paratextual bilingualism would seem to be limited. For example, as in Figure 3.22 above, what good does it do Francophones to be able to read in the Table of Contents that they are looking at a section of original articles when all the titles and articles are in English? Although abstracts (further discussed below) can indicate the utility of an article and state its conclusions in broad terms, more is necessary for proper follow-up by public health functionaries, scientists and policy makers, which can only come through multilingualism or translation. Of course the editors were aware of such questions and thus, in lieu of a multilingual strategy, or perhaps in compensation for functional monolingualism, various multilingual outreach publications were attempted.

<b>Bulletin de l'Organisation mondiale de la Santé</b>	<b>Boletín de la Organización Mundial de la Salud</b>
La revue internationale de santé publique	La Revista Internacional de Salud Pública
Recueil d'articles No.1, 1999 Choix d'articles publiés en anglais dans <i>Bulletin of the World Health Organization</i> , 1999, 77 (1-6)	Recopilación de artículos

**Figure 3.22:** Short-lived electronic French and Spanish digests of *Bulletin of the World Health Organization*

Apart from the above-mentioned early *Chronicles*, which appeared in Chinese, Russian and Spanish (for an undetermined period of time), evidence of other such publications was found in paratext from 1990 (v. 68): “A complete translation of the Bulletin into Russian is also published. Selected articles are translated into Arabic and Chinese.” Although these translations cannot be found on the *Bulletin* website, the remains of another, more public, attempt can; from 1999-2002, online

<sup>162</sup> This is said tentatively based on random checks of tables of contents and downloaded articles.

digests of the *Bulletin* were produced in French and Spanish<sup>163</sup> (see Figure 3.23above). However, of the 191 English research articles published in the now monthly *Bulletin* in 1999<sup>164</sup>, only 14 and 12 were translated in the year-end French and Spanish digests for this year, respectively, with abstracts provided for the rest (each digest also included 19 other texts, including editorials, round tables and reprints of Public Health ‘Classics’). Although a Chinese digest was also promised (Feachem 1999:1), no evidence of it could be found<sup>165</sup>.

Another important aspect of the paratext, and perhaps the most striking of these compensatory strategies, has been a gradually expanding set of multilingual abstracts produced for each article published in the *Bulletin*. Although French abstracts can be found at the end of articles sporadically along the history of the journal, ubiquitous French and Spanish abstracts begin in 1999 (i.e. with the online version), with French and Spanish keywords appearing under the initial English abstract beginning in 2001. Arabic abstracts and keywords were added to these in 2004, although the practice of initial multilingual keywords was discontinued after 2006, possibly in an attempt to simplify the visual presentation (see Figure 3.24 below). Russian and Chinese abstracts are added in 2011, thus completing the six official languages of the UN, 63 years after the founding of the journal, (UN 2016) although the *Bulletin*’s website had been in all six languages since 2005 (INTERNET ARCHIVE, 2015).

These recent advances notwithstanding, it would appear that the WHO’s initial conditions under the UN in New York had a very strong impact on the *Bulletin*’s subsequent language policy, which was slightly mitigated by its move to Geneva, a move that succeeded in decking the English journal with a little French window-dressing. Nevertheless, this language policy was recognized as exclusivist due to the several attempts at multilingual outreach over the years. These products, however, never approached the main journal in stature (i.e. those that could even be located) and were generally short-lived and apparently half-hearted. Thus, either the means or the collective will to produce multiple full journals in even the five or six official languages of the UN never existed. The arteries of information flow were the languages of the two largest colonial empires (with German, of course, expunged from

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<sup>163</sup> Found at <http://www.who.int/docstore/bulletin/digests/spanish/resumen.html> and <http://www.who.int/docstore/bulletin/digests/french/resume.html>. Last access 26.05.2016.

<sup>164</sup> The NIH website lists editorials as research articles, so these numbers are slightly off.

<sup>165</sup> Which, of course, could be due to the fact that the author doesn’t speak Chinese...



the record), which clearly indicates the *allied* political ground from which the agency was formed. Nevertheless, the ostensible coregency of English and French was formally dispensed with at the birth of the journal's electronic identity, in what appeared to be a new understanding of – or end of dialog about – global language.

### Circulating vaccine-derived polioviruses: current state of knowledge

Olen M. Kew,<sup>1</sup> Peter F. Wright,<sup>2</sup> Vadim I. Agol,<sup>3</sup> Francis Delpeyroux,<sup>4</sup> Hiroyuki Shimizu,<sup>5</sup> Neal Nathanson,<sup>6</sup> & Mark A. Pallansch<sup>1</sup>

**Abstract** Within the past 4 years, poliomyelitis outbreaks associated with circulating vaccine-derived polioviruses (cVDPVs) have occurred in Hispaniola (2000–01), the Philippines (2001), and Madagascar (2001–02). Retrospective studies have also detected the circulation of endemic cVDPV in Egypt (1988–93) and the likely localized spread of oral poliovirus vaccine (OPV)-derived virus in Belarus (1965–66). Gaps in OPV coverage and the previous eradication of the corresponding serotype of indigenous wild poliovirus were the critical risk factors for all cVDPV outbreaks. The cVDPV outbreaks were stopped by mass immunization campaigns using OPV. To increase sensitivity for detecting vaccine-derived polioviruses (VDPVs), in 2001 the Global Polio Laboratory Network implemented additional testing requirements for all poliovirus isolates under investigation. This approach quickly led to the recognition of the Philippines and Madagascar cVDPV outbreaks, but of no other current outbreaks. The potential risk of cVDPV emergence has increased dramatically in recent years as wild poliovirus circulation has ceased in most of the world. The risk appears highest for the type 2 OPV strain because of its greater tendency to spread to contacts. The emergence of cVDPVs underscores the critical importance of eliminating the last pockets of wild poliovirus circulation, maintaining universally high levels of polio vaccine coverage, stopping OPV use as soon as it is safely possible to do so, and continuing sensitive poliovirus surveillance into the foreseeable future. Particular attention must be given to areas where the risks for wild poliovirus circulation have been high, and where the highest rates of polio vaccine coverage must be maintained to suppress cVDPV emergence.

**Keywords** Poliovirus/genetics/isolation and purification; Poliovirus vaccine, Oral/adverse effects; Poliomyelitis/etiology/chemically induced/prevention and control; Immunization programs; Disease outbreaks/Review literature (source: MeSH, NLM).

**Mots clés** Poliovirus humain/génétique /croissance et développement; Vaccin antipoliomyélique Sabin/effets indésirables; Poliomyélite antérieure aiguë/étologie/induite chimiquement/prévention et contrôle; Programmes de vaccination; Revue de la littérature (source: MeSH, INSERM).

**Palabras clave** Poliovirus/genética/crecimiento y desarrollo; Vacuna antipolio oral/efectos adversos; Poliomiélitis/etiológica/inducida químicamente/prevencción y control; Programas de inmunización; Literatura de revisión (fuente: DeCS, BIREME).

الكلمات المفتاحية: فيروس شلل الأطفال، وراثيات فيروس شلل الأطفال، استئصال وتبعية فيروس شلل الأطفال؛ لقاح شلل الأطفال، اللقاح القوي لشلل الأطفال، التأثيرات الضارة للقاح شلل الأطفال؛ مرض شلل الأطفال، مسببات شلل الأطفال، شلل الأطفال المرض كيميائياً، الوقاية من شلل الأطفال ومكافحته؛ برامج التسنيع؛ فاشيات المرض، مراجعة ما نشر عن فاشيات المرض. (المصدر: رزوم الموضوعات الطبية المكتب الإقليمي لشرق المتوسط).

Bulletin of the World Health Organization 2004;82:16-23

Voir page 21 le résumé en français. En la página 21 figura un resumen en español.
يمكن الإطلاع على الملخص بالعربية في صفحة 22

**Figure 3.23:** *Bulletin of the World Health Organization*: example of initial multilingual keyword (white arrow) and final abstract (black arrow) model from 2004

On a final note regarding the connections between the *Bulletin* and Brazil, Hooman Momen, longtime editor of *Memórias* (1993–2001) went on to become a longtime editor of the *Bulletin* as well, beginning his term in 2005 and continuing through at least 2013. (SciELO in PERSPECTIVE, 2013). Moreover, the *Bulletin* has made all content since 2000 available on SciELO, and as of in 2015 was advertising this prominently on its site, just under the link to PubMed (BULLETIN, 2015).

### 3.8 COLONIAL MEDICINE AND THE INSTITUTE OF TROPICAL MEDICINE ANTWERP CATALOG

As mentioned previously (section 3.5), the Institute of Tropical Medicine - Antwerp's library has produced a convenient 142-page pdf version of their periodicals holdings. This collection provides a rich panorama of the Tropical Medicine-related literature from the establishment of the field, including, among a number of other Brazilian journals, a complete bound collection of the *Memórias*. Especially replete are the European journals, allowing the exploration of two objectives: first, to trace the development of the nomenclature of the discipline and thus establish, at least nominally, the intent behind it; second, to help determine language practice among the journals of the colonial powers. Both of these lines of investigation will help locate *Memórias* in its broadest context and contrast in order to contrast its practice with what was reported by its own authors as 'civilization' (e.g. CHAGAS, 1922, p. 14; also BARBOSA, 1917, p. 36).

Thus, in order to provide an easily accessible sketch of the foundations and early development of world Tropical Medicine literature, the information from this catalog has been synthesized with data from other bibliographic listings into a diachronic regional inventory of related journals established before 1945, which is attached as Appendix G.

#### 3.8.1 Multilingual journals among the colonizers

So, were there multilingual biomedical or scientific journals outside of Brazil? And if there were, how multilingual were they and for how long? Although these questions cannot be answered here in the depth or authority they warrant, some information can be given based on the ITMA catalog. First of all, yes, there were journals that published foreign language articles and even some with foreign-language titles. And, yes, there are certain patterns of country and genres of journal that were more permeable to foreign language.

The first and most expected type of journal to be published in non-local language included those under the formal regency of colonizers, which fell almost exclusively into two categories: (1) French, such as *Revue Medicale du Moyen-Orient* (BEIRUT, 1940s), *Archives de L'institut Pasteur de Madagascar* (TANANARIVE, 1930s) or the *Bulletin Medical du Katanga* (LUBUMBASHI, 1920) or (2) English, such as *Indian Medical Record* (CALCUTTA, 1880s), *West*

*African Medical Journal* (LAGOS, 1927) *Bulletin from the Inst. for Med. Research Fed. Malay States* (KUALA LUMPUR, 1934) or *Philippine Journal of Science: Section B. Tropical Medicine* (MANILA, 1906). However, at least one journal was found in a Portuguese colony: *Revista Medica de Angola* (1921) although it was published in Lisbon.

A different category that could be defined is that of historical affinity or sway, i.e. journals in the foreign language of a colonial 'partner' or 'associate' in some form, for example: *Japanese Journal of Leprosy* (TOKYO, 1930s) or *Chinese Medical Journal* (BEIJING, 1908). Note that the titles of these journals indicate that their theme is national, although the scope implied is international.

A third type involves locally-themed journals that follow a multilingual model featuring at least one colonial language. This type was produced either by: (1) colonies, such as *Archives de l'Institut d'Hessarek* (TEHERAN, 1939: EN, FR), *South African Medical Journal/ Suid-Afrikaanse Tydskrif Vir Geneeskunde*. (CAPE TOWN, 1920s: EN, AF) and *Journal of the (Royal) Egyptian Med. Association* (CAIRO, 1910s: EN, AR, FR); or (2) European states, such as *Bulletin of the Colonial Inst. of Amsterdam/Bulletin van het Koloniaal Inst. te Amsterdam* (1937), *Annales de L'inst. Sci. de Microbiologie et d'Epidémiologie Rostov-sur-Don / (Russian title)*. (ROSTOV NA DONU, RUSSIA, 1928)<sup>166</sup>. Another form of multilingual journal was produced in officially multilingual European states, such as *Bull. des Eidgenössischen Gesund. / Bull. Serv. Féd. de l'Hyg. Pub. / Bull. Serv. Fed. dell'Igiene Pub.* (GENEVA, 1900s)

A final category observed in the catalog included journals with a regionless theme in at least one (nonlocal) colonial language, either: (1) on a specific generic subject, such as *Research and Reviews in Parasitology* (BARCELONA, 1940), *Zeitschrift für Parasitenkunde/ Parasitologic Research* (BERLIN, 1928: GR, EN, FR), *Rivista di Parassitologia* (MESSINA, 1937: IT, EN) and *Naturae Novitates* (BERLIN, 1879-1944: GR, FR, EN, see Figure 3.25 below); or (2) specifically internationally-targeted journals, probably produced under the auspices of an international committee, such as *Malaria International Archives* (LEIPZIG, 1909), *International Journal of Leprosy* (1933, whose tumultuous origin will be discussed in 3.7.2) or any of the various apparently French-only League of Nations Health Organization journals produced in Geneva in the 1920s and 30s (French

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<sup>166</sup> There is an Institut Pasteur in St. Petersburg <http://webext.pasteur.fr/archives/ips0.html>

as a national language notwithstanding).

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**The Journal of Botany, London:**

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**Nature, London:**

The illustrations were executed from life by Mr. W. Müller and they are so truthful that we may commend them to the notice of orchid lovers. Our field botanists will find all the British species represented, as well as a few others that are not members of the British Flora.

**1916.**      **== Januar ==**      **No. 1 u. 2.**

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**Allgemeine Naturwissenschaften.**

**Verhandlungen von Akademien u. Naturwissenschaftlichen Vereinen.**

- 1 **Amsterdam.** — Tijdschrift van het Nederlandsch Aardrijkskundig Genootschap. Leiden. gr. 8. — Serie 3. Deel 33: Jahrgang 1916 (6 Hefte). Merk 34
- 2 — Verslagen van de gewone Vergaderingen der Wis- en Natuurkundige Afdeling der Kon. Akademie van Wetenschappen te Amsterdam. Amsterdam. gr. 8. m. Tafeln u. Figuren. — Jahrgang 1916. English edition: Proceedings of the Roy. Academy of Sciences. M. 16.
- 3 **Barbados.** — West India Bulletin. Journal of the Imperial Agricultural Department for the West Indies. Barbados 1916. roy. 8. — Volume 16 (4 num.), 4
- 4 **Barcelona.** — Bulletin de la Institucio Catalana d'Historia Natural. Barcelona. 8. av. planches u. figures. — Serie 3. Année 43: 1916 (environ 16 num.).
- 5 **Batavia.** — Notulen van het Bataviasch Genootschap van Kunsten en Wetenschappen. Batavia. 8. — Band 34: 1916 (4 Lieferungen). 8
- 6 — Verhandelingen van het Bataviasch Genootschap van Kunsten en Wetenschappen. Batavia 1916. gr. 8. m. Tafeln. — Band 63. Inland in Berlin u. verhandlungen Preis.
- 7 — Tijdschrift voor Indische Taal-, Land- en Volkenkunde, uitgegeven door het Bataviasch Genootschap. Batavia. 8. — Band 38: Jahrgang 1916 (6 Lieferungen). 16
- 8 — Naturkundig Tijdschrift voor Nederlandsch-Indië, uitgegeven door de Koninkl. Naturkundige Vereeniging in Ned-Indië. Deel 75. Batavia 1916. gr. 8. m. Tafeln. 14
- 9 **Bergen.** — Bergens Museums Aarbok. 1914—15. Avhandlinger. Hefte 3. Bergen 1916. gr. 8. 4 u. 475 pp. m. 2 Karten, 8 Tafeln u. Figuren. Inhalt: Salbergt, A. G., Zur Derivation des westlichen Norvegens (m. 8 Tbn.). — Lesow, E., Fortegelse over det leilandske Samling tilveit i 1915 og 1. halvår 1916. — Bergens Biologiske Selskab: Beretning for 1915. — Hesselberg, T. u. Sverdrup, H. U., Zur Beschreibung der Deck- u. Haarenverteilung im Boreo. Stabilitätsverhältnisse des Boreozones 24 vertikale Verhältnisse. — Kolderep, C. F., Jodkalium i Norge i 1914 og 1916 (m. 2 Karten, u. a. w.).
- 10 — Aarsberetning for 1914—15. Bergen 1915. gr. 8. 83 pp. m. 1 Bildnis u. Figuren. 8

Jahrgang 1914—15, jetzt vollständig, 846 u. 82 pp. m. 2 Karten, 4 Bildnis, 24 Tafeln (8 color.) u. Fig. 15.

Naturae Novitates. Jahrg. XXXVIII, No. 1 u. 2. R. Friedländer & Sohn in Berlin.

**Figure 3.24:** *Naturae Novitates* (Berlin): example of a “regionless” (European) multilingual scientific journal from the early 20<sup>th</sup> century<sup>167</sup>

### 3.8.2 The name and nature of Tropical Medicine

Although the colonial underpinnings of the discipline have been discussed above (3.4.5), what will be undertaken in this section is to trace the development of its conceptualization based on new/reformed journal titles so as to trace this paradigm’s temporal and regional extent. The data have been organized into Table 3.11 (below), which is based on prominent concepts in journal titles in Appendix G, i.e. journals

<sup>167</sup> Note that this issue was January 1916; ergo, publication was unimpeded by the First World War.

established by 1945 (with some later titles added from the ITMA catalog). The table has been color-coded into four groups: keywords involving point-of-view characterization (blue), the Pasteurian movement (green), the Public Hygiene/Health movement (red), and scientific fields related to Tropical Medicine (yellow). Terms are organized according to first appearance.

**Table 3.11:** Keywords in the titles of early world Tropical Medicine-related journals

continued..

CONCEPT <sup>168</sup>	DATE <sup>169</sup>	COUNTRIES
Naval	1864-90	France
	1895-1960min	Italy
	1897	Germany
Colonial	1890-1909	France
	1895-1959	Italy
	1911	Italy
	1920-1949	Italy
	1920-49	Netherlands
	1937-1956	Spain
	1943-56	Belgium
	1955-59	Belgium
	1955-59	Belgium
1955-59	Belgium	

<sup>168</sup> Grouped under English keyword, e.g. the German “Schiffs” was categorized under “naval”. To limit the list to general concepts, specific disease keywords such as “Leprosy” or “Malaria” and zoological terms such as “Helminthology” and “Entomology”, were excluded. The term “Medical” was also excluded to narrow the results. “Prophylactic” and “Antimicrobial”, with one result each, were excluded.

<sup>169</sup> Starting dates based on ITMA catalog and other references mentioned in Appendix G. Unspecific dates are based on extrapolations from extant volumes and nearest results in worldcat.org. Terminal date given where found.

continuation...

Tropical	1897	Germany
	1898	England
	1899	England
	1904	France
	1906	Philippines
	1907	England
	1907	England
	1912	England
	1913	Australia
	1920s	Puerto Rico
	1921	USA
	1939	Mexico
	1940s	Cuba
	1940s	Ecuador
	1941	France
	1950	Italy
	1957	Spain
Overseas	1928	Belgium
	1950s	Belgium
	1950s	Belgium
Hot Countries	1900s	Italy
<i>Pathology</i>		
Comparative	1888	Scotland
Exotic	1908	France
	1905-1926	Portugal
Regional	1920s	Argentina
Pasteur	1887	France
	1900s	Tunisia
	1903	France
	1905-1912	Brazil
	1912	Brazil
	1921	Vietnam
	1923	Algeria
	1925	Tunisia
	1930s	Madagascar
	1932	Morocco
	1940	Fr. Guiana

continuation...

Hygiene	1897	Germany	
	1897	Germany	
	1898-1914	Brazil	
	1900s	Switzerland	
	1905-26	Portugal	
	1907	England	
	1907	England	
	1909	France	
	1910	England	
	1920	Switzerland	
	1920s	Switz.(LoN)	
	1921	USA	
	1927	Brazil	
	1932	Spain	
	1932	Switz.(LoN)	
	1935	Brazil	
	1940s	Ecuador	
	1941	Morocco	
	Public Health	1888	England
		1911	USA
1920s		Egypt	
1920s		Puerto Rico	
1930s		Venezuela	
1932		Spain	
1935		Brazil	
1939		Mexico	
Bacteriology		1892	England
	1895	Germany	
	1907	Portugal	
	1929	Chile	
Epidemiology	1920s	Switzerland (LoN)	
	1928	Russia	
	1930s	Mexico	
Immunology	1916	USA	
Microbiology	1928	Russia	
	1929	Italy	

conclusion...

continuação Parasitology	1831	Germany
	1907	England
	1908	England
	1914	USA
	1928	Germany
	1928	Russia
	1930s	Russia
	1935	Cuba
	1940s	Chile
	1940s	Spain
	1950	Italy
Serotherapy	1917	Italy

*Legend. LoN = League of Nations journal.*

### Naval

The idea of Naval or Maritime Medicine is linked with the international travel involved in all aspects of the colonial enterprise, and is certainly evident in the history of Hamburg. The Institut für Schiffs- und Tropenkrankheiten (Institute for Maritime and Tropical Diseases) was founded around Bernhard Nocht, Chief Medical Officer of the Harbor of Hamburg, which received 500 ships with 15,000 passengers in 1899 alone. That same year Nocht also observed that up to one in six sailors returning from Africa, for example, had malaria.(FLEISCHER, 2000, p. 747) The Liverpool School of Tropical Medicine, moreover, the first major such institute, was founded by Sir Alfred Lewis Jones, a shipping magnate, and its current logo still bears a naval imprint (see Figure 3.26 below). (LSTM 2016) This term survived at least into the 1960s in Italy.



**Figure 3.25:** Current Liverpool School of Tropical Medicine logo featuring sailing motif.



### ***Colonial***

The terms *Colonial* or *Colonial Medicine* were not among the oldest in this list, first appearing in 1890, a quarter-century after *Naval Medicine* and a mere decade before the turn of the 20<sup>th</sup> century. The term appears to have been limited to France, Italy, Spain, Belgium and the Netherlands, i.e. it could not be found among British, German or Portuguese journals. Rather, more generic terms seemed to prevail in these three countries, with British journals appearing the most neutral of all in their wording (e.g. *Comparative Pathology* from Scotland vs. *Exotic Pathology* from Portugal).<sup>170</sup>

Logically, it was never observed in literature produced in Latin American, Southeast Asian or African colonies. The term seem to have suffered an abrupt end in the 1950s in the places where it was still in use: Madrid's *Medicina Colonial*, founded in 1943 became *Medicina Tropical* in 1957; two colonial Italian journals, *Annali di Medicina Navale e Coloniale* and *Archivio Italiano di Scienze Mediche Coloniali e di Parassitologia*, took on tropical identities in 1960 and 1950, respectively, and a number of journals produced by *l'Office Colonial* in Belgium apparently halted in 1959, most likely in concert with the independence of Congo in 1960.

### ***Tropical Medicine***

The use of *Tropical Medicine* was almost immediate within the field, appearing in the first three major institutes founded in Europe: the Liverpool School of Tropical Medicine (1898), the London School of Hygiene and Tropical Medicine and the Hamburg Institute for Maritime and Tropical Diseases, as well the term selected by Patrick Manson in his initial appeal for the creation of the new discipline in 1897. *Tropical Medicine* was frequently associated with *Hygiene* among the titles, demonstrating a public, epidemiological control aspect. Despite the relative objectivity of the term, which describes a climate type rather than a definition in relation to Europe, such as *Overseas*, *Exotic*, *Hot Countries* or *Naval* (i.e. something brought in from “out there”), a solution used in Argentina, *Regional Pathology*, posits a completely different, localized point of view: a term adapted for use in the numerous countries that straddle the tropical zone, i.e. in Central and South America, Africa, South and Southeast Asia and Oceania.

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<sup>170</sup> Not that this impeded stark colonial associations in other semiotic forms, e.g. the London School logo, as seen in Chapter 1 (Figure 1.6).

### ***Hygiene***

Frequently prefaced with *Public* (or *Tropical*), *Hygiene* immediately brings to mind Oswaldo Cruz' immunization and cleanup campaigns in Rio de Janeiro. Of course, the flip side to “Hygiene and Tropical Medicine” this is that *Tropical* becomes semantically linked with unhygienic or *Dirty*. Although this was hardly a point of contention in the face of a bubonic plague outbreak, the Hamburg Institute itself was, nevertheless, also founded in the midst of a horrific cholera epidemic, but, then, that was an ‘imported’ disease. Nevertheless, the term was used with no apparent compunction<sup>171</sup> in Brazil, Ecuador and Morocco, beginning as late as the 1940s.

### ***Public Health***

Although slightly predating *Colonial* and virtually as old as *Pasteur* and *Tropical*, this term seems to have gradually taken precedence as the preferred working concept in what has become a more globally interactive state of affairs. One prominent example of this is the recently founded (2006) International Association of Public Health Networks (IANPHI), which includes 100 members from 88 countries based on an aregional “peer-to-peer model”. (IANPHI, 2016)

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<sup>171</sup> Neither was the eugenic corollary racial hygiene shied away from by a sector of Brazilian scientists such as Belisário Penna or even by Ruy Barbosa (“bom sangue ariano” Barbosa 1917:36).

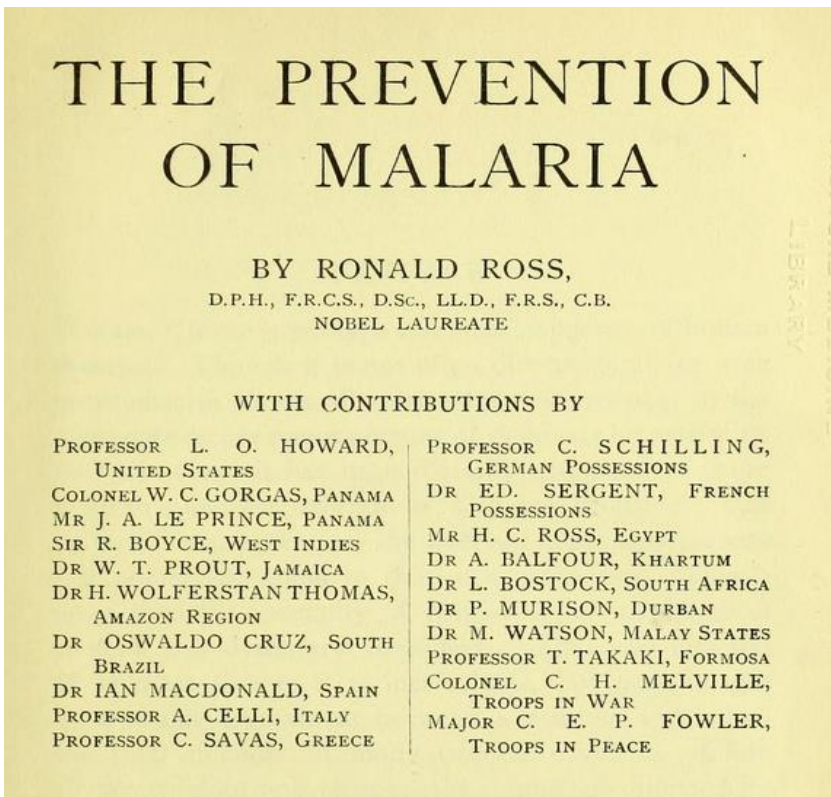


**Figure 3.26:** Homepage of the International Association of Public Health Networks (IANPHI), founded in 2006 at a meeting in Brazil.

### 3.9 TWO CASE STUDIES ON INTERNATIONAL COLLABORATION IN EARLY TROPICAL MEDICINE LITERATURE

As a final look at the dynamics of the systems that have been examined in this chapter, two case studies will be presented. The first, centering on the contents of what would be considered a state-of-the-art 1910 malaria textbook, one of the first of its kind, featured chapters on the status and treatment of the disease in different corners of the globe by a selected panel of international experts. The selection, assignment and discourse of these authors communicate information about the norms perceived and shared by the group, as well as the nature of the prospective audience for its reception. The second case, perhaps more complex, rather obliquely follows the trail of activity that resulted in the foundation of an international leprosy society and its journal over the 1920s and 30s. This case will demonstrate the national and linguistic issues in conflict within the growing Tropical Medicine community as the discipline is consolidated internationally during this period.

### 3.9.1 Oswaldo Cruz and Ross' The Prevention of Malaria



**Figure 3.27:** Title page from Ronald Ross' 1910 reference work *The Prevention of Malaria*

Ronald Ross' (1857-1932) career was built as a surgeon in the Indian Medical Service, where he began investigations in the 1890s into Laveran and Manson's hypothesis that mosquitos are involved in the spread of malaria. He identified the malarial parasite in mosquito lumen in 1897, publishing these findings in the *British Medical Journal* that December (nobelprize.org 2016).

Having demonstrated the life cycle of the parasite in birds, he was nominated for and eventually won the 1902 Nobel Prize in Medicine, after a bitter dispute with Italian malariologist Battista Grassi (see Lutz correspondence in 3.3). Importantly, Robert Koch "the father of

Bacteriology” (University of Berlin), who would also go on to win in 1905, was called in to mediate the hostile situation (Cook 2007:93-97).

Besides going on to hold important posts in Liverpool and London, including the vice presidency of the Royal Society (nobelprize.org 2016), Ross led sanitary campaigns against the disease, employing the hypothesis, derived from statistical modeling, that malaria “could be eradicated simply by reducing the number of mosquitoes” below a certain threshold, a hypothesis that would prove effective in both the Suez and Panama canal projects (BACAËR, 2011, p. 66). His intention was to publish this theory in an exhaustive international reference work that would feature input from the most important figures in the field, whom he, as a recognized authority, would have the influence to mobilize. Thus, in this watershed volume of global reach about “the most important of human diseases” (ROSS, 1910, p.vii), the details of Ross’ choice of contributing authors (granting authority status), the language used (i.e. the inclusion or not of foreign language and translation) and the positioning the contributing authors took, or were asked to take, should all serve as important indicators of common general assumptions about the nature and purpose of the Tropical Medicine enterprise.

### *Authors and scope*

The work is divided into two roughly 300-page halves, with Ross covering the history, description and prevention of the disease in the first six chapters, while the remaining chapter is comprised of handbook-sized entries by the 20 invited authors, offering descriptions of the extent of the disease and control measures in various countries. The list of authors, besides Oswaldo Cruz, includes one French, one German, one Greek, one Italian and one Japanese author: the remaining 14 authors include three Americans, nine or ten Britons and one or two who are either Britons or Afrikaners. Although historian Simone Kropf laments that Cruz is the only Latin American invited to participate in the work (2009, p.121), there is an even graver point: of the twenty scientists/sanitizers (most some form of government agent/spokesman) given authority to represent the situation of almost the entire globe, only two, Dr. Cruz and Dr. Savas (Greece) do not come from a colonizer. It is also important to point out that of the panorama of countries listed as fields for malaria control and research, all were colonies or under some form of subjugation, except for Brazil, Greece, Italy, Spain and the US. Furthermore, among these non-colonies, Spain is covered by a British author, as is half of Brazil (Pará, Manaus and the entire Amazon region):

the opinion of Oswaldo Cruz, the Brazilian National Director of Public Health, who had travelled personally to these regions, is relegated to “South Brazil” in deference to someone from the “Liverpool School of Tropical Medicine Research Laboratories, Manaus, North Brazil”, whose article also precedes that of Cruz (ROSS, 1910, p. 382). Moreover, despite the fact that the table of contents lists Japan as a subject covered by a Japanese author, the actual article is about Formosa (Taiwan), which had been under Japanese occupation since 1895. And, as if to erase any remaining doubts, the final two sections in this chapter are written by representatives of the Royal Army Medical Corps: “Troops in War” (ROSS, 1910, p. 577-99) and “Troops in Peace” (ROSS, 1910, p. 600-620).

### *Language*

As to be expected, colonial language is used to describe colonial medicine. The full volume is in English except for the single section on “French Possessions” (i.e. the section on “German Possessions” was in English, which seems to fit the more flexible pattern seen in the German multilingual/English journals shown in 3.6.1). It would seem that Dr. Savas’ section on Greece was translated by Dr. Ross himself (“Given in English by the author –R.ROSS” (ROSS, 1910, p. 432)– from what original language could be not be determined – although if it were from French, it is curious that the “French Possession” section was not also translated. The Italian article is a reprint “translated by Dr. John J. Eyre, with special additions” (ROSS, 1910, p. 406).

The English in Cruz’ section (ROSS, 1910, p. 390-98) is impeccable; whether this indicates his own mastery or Ross’ thorough editing of the entire volume cannot be determined without further biographical study. However, there were several curiosities that should be pointed out in Cruz’ contribution: first of all, that an English title, *Proceedings of the Oswaldo Cruz Institute* (ROSS, 1910, p. 398), is invented for *Memórias* in order to cite Neiva’s 1909 article<sup>172</sup>, despite the fact that *Brazil-Medico* is cited with its proper Portuguese name and German journals are cited with their German names. Of the five references in his bibliography, this is the only variation. On the other hand, the titles of all five works appear in English although the originals

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<sup>172</sup> MIOC 1(1):67-77. “Contribuição para o estudo de dipteros: Observações sobre a biologia e sistematica das anofelinas brasileiras e suas relações com o implaudismo /Beitrag zur Kenntniss der Dipteren: Beobachtungen über die Biologie und Systematik de brasilianischen Anophelinen und deren Beziehungen mit der Malaria”

were all in either Portuguese or German. Cruz was one of only two authors with a reference section (the other was from the US, who cited only American sources) and one of four who cited any literature whatsoever (the French author, in over a dozen footnotes, cited exclusively French sources except for a French-titled article in an Italian journal and H.W. Thomas, writing on the North of Brazil, cites four works in footnotes, one of which is in Portuguese). Thus, regardless of whether Ross directed Cruz to do so, this idiosyncratic translation of references seems incoherent (especially given that only Portuguese or German speakers could read the originals), given the above-mentioned reference in Portuguese. Secondly, Cruz' institutional credential is cited as "Institute of Manguinhos", although in 1908 the name had been officially changed to the *Instituto Oswaldo Cruz* by government decree. Supposing that Dr. Cruz chose this anachronistic term to avoid self-promotion, however, does not offset the fact that the "*Oswaldo Cruz Institute*" was used in the bibliographical references, creating a fractured identity. These would seem like unnecessary concessions made for the sake of ingratiating himself to English-language readers, or perhaps more importantly, they indicate that Cruz and/or Ross set no weight by Portuguese as an internationally suitable language, unlike French, which was allowed in the volume.

### *Objects of study and positioning*

Thus, given the general positioning implied in the selection of authors, the language and the regions selected for study, little further detail will be given except for two details. First, Ross opens his preface stating that malaria accounts for

a rough estimate of between an quarter and a half of the total sickness in many tropical countries...Unlike many epidemic diseases it is not transient, but remains for ever in the areas which it has once invaded...Malaria is the great enemy of the explorer, the missionary, the planter, the merchant, the farmer, the soldier, the administrator, the villager and the poor; and has, I believe, profoundly modified the world's history by tending to render the whole of the tropics comparatively unsuitable for the full development of civilization. It is essentially a political disease...For the state as for the individual, health is the first postulate of prosperity. And prosperity

should be the first object of scientific government.  
(ROSS, 1910, p. vii-viii)

Without entering into the question of Ross' personal motives or the factuality of this passage, what's happening discursively is that the hand of 'progress' is being extended by the imperial scientists and their confederates to an area demarcated as "sick", "uncivilized" and even "uncivilizable" until the described health problem is dealt with. Considering that Ross spent considerable energy, to little notice or effect, in anti-malaria campaigns in England, where the disease was a significant health problem into the 1950s (malariasite.com 2015, REITER, 2000; DOBSON, 1989; BBC.com 2016), and yet overlooks the UK as an object of study in this international reference work, while simultaneously acknowledging the problem and control efforts in the US, southern Europe and imperial subaltern states, sets up a false standard of "civilization" and "progress" that only serves to aggrandize the seat of Empire.

This point of view is complemented with a focus on colonial commercial interests. Perhaps the most potent example of this is the division of Brazil into north (i.e. a 'raw material zone') and south (a 'populated zone'), of which the north is given to the above-mentioned H. Wolferstan Thomas. After a brief panorama focusing on the Madeira-Mamoré railway construction in Porto Velho and on the city of Belém, his article is dedicated to the protection of ships from malaria in the Amazon region, involving complex, fold-out technical diagrams of mosquito-proofing for the decks of commercial vessels. His advice is for foreign civil engineers and merchants:

The astute commercial man has still to learn that it is cheaper as well as quicker to organise a scientific force to combat malaria or yellow fever, and to have such a force in operation before any attempt is made to import labourers and commence the work. (ROSS, 1910, p. 385)  
Many important engineering works are certain to be undertaken in the opening up of the country in North Brazil... (ROSS, 1910, p. 386)

This commercial focus, and even the location of the Liverpool research facility in Manaus, is much more obvious in light of the history of British and American interests in the region: Manaus was still booming under the rubber barons before production had begun in



Malaysia and Indonesia, and the Madeira-Mamoré Railway was being constructed by American engineering magnate Percival Farquhar<sup>173</sup>, who contracted Oswaldo Cruz to contain the malaria outbreak among the thousands of workers in 1910 (THIELEN et al., 1991, p.113-114). Thus, the economic impact of tropical disease on colonial enterprise seems to be main thrust, whether regarding rubber interests in Malaysia and the Amazon or South African disavowals of the presence of malaria<sup>174</sup>, which could be construed as call for investment, credit, settlement.

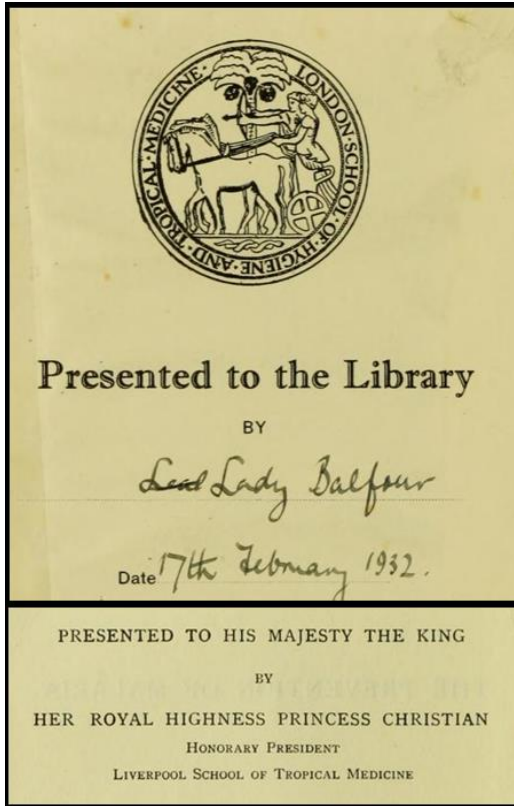
As a final point to demonstrate how Tropical Medicine is situated and framed in this book, two items of paratext are presented below in Figure 3.29: a bookplate and the dedicatory message, both of which pointedly underscore the general semantic tone. The bookplate, from the digitized copy hosted at archive.org, is a record of donation by Lady Balfour, the widow of Sir Andrew Balfour, director of the London School of Hygiene and Tropical Medicine from 1923-31, who had contributed a section to the work<sup>175</sup>. Their peerage and the prominent bellic London School logo, already discussed in Chapter 1, seem to corroborate the book's original dedicatory inscription to the King by the Princess, who was honorary president of the Liverpool school

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<sup>173</sup> Farquhar's Madeira-Mamoré Railway Company was based in Portland, Oregon. Farquhar also owned the Port of Pará Steamship Company (THIELEN et al., 1991, p.113-14)

<sup>174</sup> Bostock opens his section on "Malaria in South Africa" with the line "British South Africa as a whole does not suffer much from malaria." (in ROSS, 1910:543), although he is contradicted in the following chapter by Murison about a malaria epidemic in Durban (ROSS, 1910, p. 549-53).

<sup>175</sup> Link: <https://archive.org/details/b21351600>. Last access 31.05.2016. works, Balfour's other titles include *War Against Tropical Disease* (1920) and *Health Problems of the Empire* (1924). In his obituary it is noted: "He undertook the Sisyphean labours of making reference for his private use of all the current literature on hygiene and tropical medicine in all languages of the world..." (BMJ 1931:246)

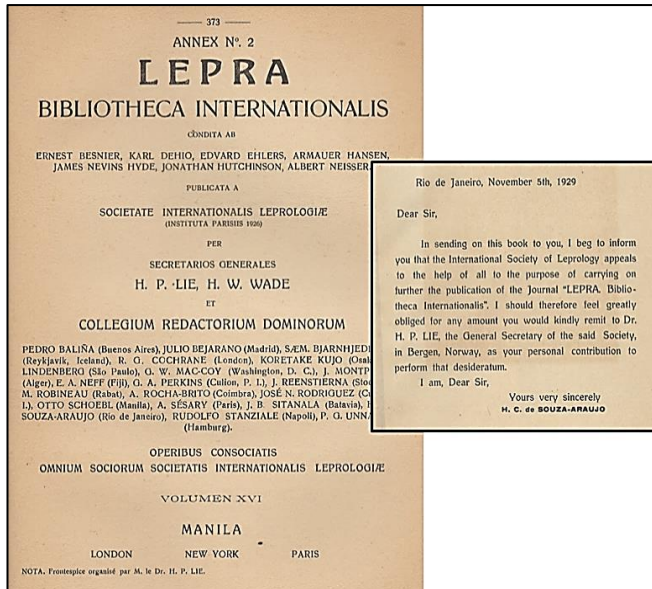


**Figure 3.28:** Dedicatory of Ross' *The Prevention of Malaria* (1910), with bookplate from the digitized copy at archive.org

### 3.9.2 Whose international society? Souza-Araujo and international leprosy

In 1929 the Institute Oswaldo Cruz published parallel Portuguese and English volumes by Heraclides de Souza-Araujo (1886-1962) entitled *A Lepra: Estudos Realizados em 40 Países* and *Leprosy: a Survey Made in Fourty [sic] Countries* (1924-1927), respectively. The 400-page book details Souza-Araujo's 30-month global tour of medical and leprosy treatment facilities, including, besides a condensed travel narrative and a state of the art for each visited country, an open-ended postlude on his efforts to organize a *Société Internationale de*

*Leprologie*, the results of which can only be identified in subsequent sources and which hold further clues about the dynamics of international Tropical Medicine.



**Figure 3.29** Appendix and insert from Souza Araujo 1929 announcing the establishment of an International Leprosy Society and soliciting help to reactivate the journal *Lepra: Bibliotheca Internationalis*

Souza-Araujo lists numerous credentials on the title page, demonstrating the breadth of his international network:

- Head, Laboratory of Leprology, Oswaldo Cruz Institute
- Member of the National Academy of Medicine of Brazil
- Honorary of the Academy of Dermatology and Syphilology of Spain
- Founder of the Societas Internationalis Leprologiae, Bergen, Norway
- Fellow of the Royal Society of Tropical Medicine and Hygiene
- Correspondent of the Society of Dermatology of Argentina, of the American Society of

Tropical Medicine, of the Medical Sciences Society of Lisbon, etc., etc. (SOUZA-ARAÚJO, 1929: front matter)

Although terse, the travel narrative provides some interesting details about the structure and nature of the public health community worldwide. His reception was quite warm in a number of places – in the US, for example, he was given letters of introduction from, among others, the surgeon generals of the United States, the Navy, and the Army. Of the many national directors of public health he met and the events he participated in, perhaps the most conspicuous was a meeting in Switzerland with the medical director of the League of Nations, who asked him to produce “a memorandum – ‘Leprosy as a world sanitary problem’ – for the health committee of the League of Nations” (SOUZA-ARAÚJO, 1929, p.16). This connection was significant since Souza-Araujo would go on to sit on the WHO’s expert panel on leprosy from its creation until his death in 1962 (GUIA, 2015, p.136; PETERSON; SKINSNES, 1973, p.166)



**Figure 3.30:** Points visited by H.C. de Souza-Araujo in his tour of leprosy treatment facilities between 1924 and 1927<sup>176</sup> (SOUZA ARAÚJO, 1929, p. 7-19)

Toward the end of his trip, Souza Araujo recounts that: “The greatest part of my time in Paris was employed in the organization of an

<sup>176</sup> Outlying points in the Pacific represent Hawaii and Guam.

International Society of Leprology” (SOUZA-ARAÚJO, 1929, p.18-19). The final section of the book (SOUZA-ARAÚJO, 1929, p. 366-88) contains a brief on the proposed Society: the formation of Souza-Araújo’s idea, drawn from “the narrow and efficient cooperation between technical people” in Tokyo and the Philippines (SOUZA-ARAÚJO, 1929, p. 366), his attempted motion at a 1926 Brussels conference to create a *Société Internationale de Leprologie*, and paratext for the proposed re-inauguration of the discontinued journal (1899-1915) *Lepra: Bibliotheca Internationalis*, to have been published by the *Société* in Manila, London, New York and Paris: a frontispiece (in Latin) (Figure 3.30 above) and a page outlining the officers and committees (in French). Following the paratext is a list of “*adhésions reçues*” in the form of correspondence snippets, including responses in French, English, Spanish, Portuguese and German.

Among the pledges and congratulations, however, there seems to have been contention on more than one front:

Availing myself of the Meeting in Brussels, by the end of July, 1926, of the IIIrd Congress of Dermatology for French Speaking Doctors, I intended to make there a lecture on my motion for the creation of the Society [...] However the confusion that marked the end of the meeting rendered it impossible for me to do [...] My feeling, as well as that of other tropicalists and colleagues, was that the matter proved to be of little interest to French dermatologists. (SOUZA-ARAÚJO, 1929, p.366)

An equally problematic matter was the procedural language this Society would use. There was apparent reluctance by Anglophones to submit to a Society organized in Paris and with a French president (Professor Jeanselme was Souza-Araújo’s choice: the Society was even “declared to be founded” at his residence on New Year’s Eve, 1926) (SOUZA-ARAÚJO, 1929, p.19). This posture is perhaps best summarized in a letter from Sir Leonard Rogers, who had founded the Calcutta School of Tropical Medicine and wrote on behalf of the British Empire Leprosy Relief Association:

I therefore trust you will be able to see your way to comply with Dr. WADE’s suggestions, *as this willenable the English speaking workers to your*

*Association.* I hope you understand that we are in no way antagonistic to your work, which we admire, but it must be remembered that Dr. WADE, myself and others have for long had under consideration the formation of *an English speaking leprosy association*, but are willing to put it on one side and joint [sic] your organization provided Dr. WADE's suggestions are agreed to by you, which I hope will be the case. Failing that we shall probably proceed with our own original scheme, I trust in friendly co-operation with your own association, Etc. (SOUZA-ARAÚJO, 1929, p.375, *emphasis added*)

Although the conditions are not named, their results (in italics) rather clearly indicate that they are linguistic in nature. However, despite the genteel tone and the fig leaf of language access, the longstanding British/French rivalry for (scientific) supremacy seems but thinly concealed, even in the formation of an international humanitarian organization that was proposed, moreover, by a third party.

Though the outcome of Souza-Araujo's proposal cannot be gathered from his 1929 book, it can be deduced from the first issue of *The International Journal of Leprosy* (1933-2005). This issue testifies that Rogers made good on his threat to form an English-speaking association – except, rather than cooperate with a parallel French-speaking organization (as in the letter above), the international community of leprologists was leveraged into a London-based framework (IJL 1(1):95), with Dr. Jeanselme removed and Dr. V.G. Heiser of the Rockefeller Foundation set in his place as president.

Although the bylaws stated that “the name and title of this organization shall be the INTERNATIONAL LEPROSY ASSOCIATION, with its French equivalent, SOCIÉTÉ INTERNATIONALE DE LA LÈPRE” (IJL 1(1):101), and the constitution stipulated that “the languages of the publication shall be English, French, and German” and that “the Editor shall arrange for translating into one of these languages, all materials in other languages that are to be published” (IJL 1(1):108), the practice took an entirely different tone. In the first issue, for example, all of the 21 texts, including articles by a Japanese and an Austrian researcher, are in English except one – an article in French by Souza-Araujo. And it must be understood that he did this as a protest since he most certainly spoke English, having taken post-graduate courses at Johns Hopkins and Columbia Universities the first part of his trip (SOUZA-ARAÚJO,

1929, p. 7), as well as the reasonable certainty that he self-translated this book with no reviser (given the error in the title: see also section 2.7.3). The only material not originally produced in English (but, nevertheless, translated into English) in this issue are three abstracts from French-language articles out of 23 works reviewed in the ‘Current Literature’ section (IJL 1(1):119-128).

In H.W. Wade’s opening editorial (WADE, 1933, p.1-3), Souza-Araujo appears only as a footnote in an acknowledgment for a £180 donation (apparently raised through the leaflet in *Leprosy*, Figure 3.30 above), although his organizational model was retained exactly (simply reshuffling most of the non-British officers) and his extensive list of contacts had been appropriated. Souza-Araujo, nevertheless, served on the organization’s council from 1932-56 and was included among the “Contributors of the Century” in a 1973 special issue (GUIA, 2015, p.136; PETERSON; SKINSNES, 1973, p.166). If cases like this were multiplied, it would be easy to see how English rose to hegemony as lingua franca.

Nevertheless, the story has another wrinkle. Villela’s 1934 obituary in *Memórias* for Carlos Chagas mentions that he “devised and organized” an International Leprosy Center (VILELLA, 1934, p. xiv, my translation<sup>177</sup>), in Rio de Janeiro. Chagas, however, who had served on the League’s Port Health Leprosy Commission, the Malaria Commission and Public Health Schools from 1922-34 (WEINDLING, 2006, p. 6), passed away just months after the center’s inauguration in April 1934 (LEAGUE OF NATIONS, 1937, p.14). Its leadership was taken up by Eduardo Rabello of the IOC, and resulted in the establishment of a specialization course and the *Revista Brasileira de Leprologia*, as well as collaboration with Argentinian, Colombian and Cuban governments, all principally under the funding of the Brazilian government (LEAGUE OF NATIONS, 1937, p. 31-34), with Souza-Araujo serving in its Clinical and Immunological Research section (SANGLARD, 2005, p.221). Nonetheless, this center was apparently short-lived, since no mention of it in the Brazilian press could be found after 1934 (SANGLARD, 2005, p. 223). Although it was clearly still in operation in 1937, its closing might be assumed to have happened with the dissolution of the League by the end of the Second World War.

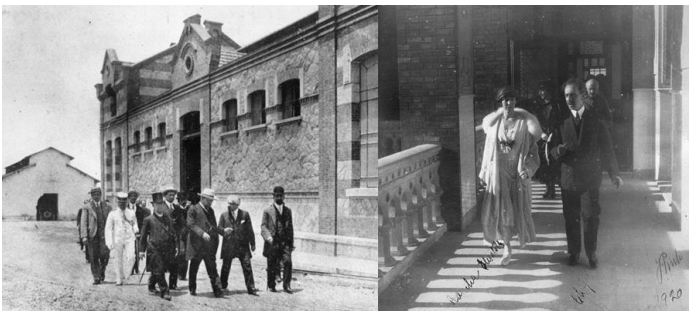
Nevertheless, the same League of Nations brief that describes the establishment of the International Leprosy Center in Rio de Janeiro also calls for the prospective creation of a standing Leprosy Commission, which is interesting to this case since it names who is to be invited: the Leonard Wood Memorial (Wood was US governor of Cuba and the

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<sup>177</sup> Ideado e organizado por elle é o Centro Internacional de Leprologia.

Philippines), the British Empire Leprosy Relief Association (i.e. Rogers, as seen above), the International Leprosy Association (Wade, Rogers, & Rockefeller) and the “International Centre at Rio”al under the (LEAGUE OF NATIONS, 1937, p.14, full quote below in footnote).<sup>178</sup> These special invitees were “to be representative of the various centres and institutions for leprosy research” in a global list including eight different regions (LEAGUE OF NATIONS, 1937, p.14). And thus the leadership in (at least this branch of) international health has been decided by Geneva, and it is profile was uniformly Anglo-American, except for the strenuous international efforts of Chagas and Souza-Araujo, who managed to put Brazil on the playing field, at least temporarily. Of course it follows that the meetings and main internal communication would have been in English.

### 3.10 SUMMARY OF FINDINGS



**Figure 3.31:** Oswaldo Cruz receiving US ex-president Theodore Roosevelt at the Instituto Oswaldo Cruz in 1913 (left) and Carlos Chagas with Queen Elizabeth of Belgium at the Instituto Oswaldo Cruz in September 1920 (right)

<sup>178</sup> In 1928 the Health Committee set up a Leprosy Commission and organised the study of the problem raised by this disease in the various continents of the world. This study was undertaken by Professor Etienne BURNET, Director of the Tunis Pasteur Institute. In 1931 the Committee recommended that the Council conclude an agreement with the Brazilian Government with a view to the creation of an international centre for research on leprosy at Rio de Janeiro under the auspices of the League. This centre was inaugurated on April 20th, 1934. Professor E. RABELLO is now the Director, and Dr. H. COLE of Cullion (Philippines) has been asked to undertake research work relating to the chemotherapy of leprosy.

In view of the responsibility undertaken by the Health Organisation for the conduct of international studies in this field, the Committee decides in principle to approach the international organisations concerned with a view to the appointment of a permanent Leprosy Commission for a period of three years.

This Commission should be representative of the various centres and institutions for leprosy research and the big organisations for the campaign against this disease (Africa, China, Europe, India, Japan, Latin-America, Netherlands Indies, Philippines). The Leonard Wood Memorial, the British Empire Leprosy Relief Association, the International Leprosy Association and the International Centre at Rio should also be invited to send representatives. Professor E. BURNET, will act as General Rapporteur and the Committee requests the Director of the Health Section to undertake the necessary consultations regarding the election of the Chairman of the Commission. (League of Nations 1937:14, emphasis added)



By way of a summary, three propositions derived from the findings of this chapter will be set forth and supported with examples.

Proposition one: *a position of political/economic power tends toward monolingual inflexibility, just as a position of relative weakness tends toward linguistic adaptability.*

1. This is borne out, in the first place, by the language of publication seen among the journals of the colonizers in the Institute of Tropical Medicine-Antwerp catalog (see Appendix G). The stronger the empire, the greater the intolerance to other languages; for this reason, some multilingualism was seen among German, Italian and Spanish journals, whereas practically none was granted space in French or English publications. This is because, going into the 20<sup>th</sup> century, the most widely-dispersed, and thus “leading languages”, were French and English. The German colonial empire never seriously competed with that of the British (33.6 million km<sup>2</sup> in 1922)(Ferguson 2004:15) or French (approx. 12 million km<sup>2</sup> by 1914) (Hodge 2008:245); in fact, Bismarck said he would have been perfectly happy to hand South West Africa over to the British (Doyle 1986:325). Although German attained international reach through prolific scholarly and scientific production, this was a different basis than that of colonial power, due principally to the Francization and Anglicization policies (e.g. German is not an official language in any country outside of Europe).
2. As was seen in the case of the International Leprosy Association in Souza-Araujo 1929, the UK actively resisted a (n apparently) French-controlled international society, even one for humanitarian ends. Thus, maneuvers followed to take Souza-Araujo’s structure and recontextualize it in London (where the resulting body is still in operation today); meanwhile, through the League of Nations, an ill-funded, marginally connected center was established in Rio de Janeiro that could not survive until the end of its first decade.
3. It was demonstrated that the WHO never took a systematic approach to language accessibility in its chief journal. It was initially determined in 1947 that the language would be English, and this was only theoretically challenged by French, despite a move to Geneva. The fact that the UN never considered German a working or official language (UN 2016) helped further its disappearance as an international language of science.
4. Carlos Chagas Jr.’s linguistic hardline (“*Portuguese is useless*”) was different from the more moderate positions of editors Jamra and Coura (as consensus-makers); while the latter two protested ‘brain-

drain', Chagas Jr. freely admitted to doing it and found the solution would be a wholesale migration to English in Brazilian higher education. The distinction in these attitudes could be attributable to Chagas Jr.'s pedigree, international connections, and outstanding prestige, all of which allowed him a more removed and less sentimental perspective and fearlessness with regard to making national enemies.

5. The extravagant measures that Chagas Sr. was willing to go to acquire German for himself and his children is clear example of the type of toil, flexibility and sacrifice demanded of linguistic have-nots to become competitive internationally. This is why it should be expected that those in power will naturally tend to avoid a plurality of languages in their affairs, i.e. there may be little difference in the mechanics between the *Scramble for Africa* and the *Scramble for the Lingua Franca*.

Proposition two: multilingual cosmopolitanism leads to a broad network, which is a position of strength.

Despite the fact that the above-described linguistic acquisition is done out of a position of weakness, the benefits to which this work brings are numerous, both at home and abroad.

1. The IOC was founded upon such cosmopolitanism, perhaps also because the age in which it was founded was more conducive to such a posture. Nevertheless, its place at home was secured by success abroad in a sort of inverted colonialism, all of which directly resulted from multilingual skills. Through the end of Cruz', Chagas' and Lutz' life, science meant multilingualism. IOC students without such skills were encouraged to acquire them (in the *Mesa de Quarta-Feira* meetings, for example). These skills, as so readily attested by Chagas Jr., were also critical to international success: obtaining positions with the League of Nations or the WHO, representing the Institute at international expositions and congresses, Souza-Araujo's travels and networking, even hobnobbing with Einstein (figure below). Such expectations for its staff were part of the original corporate culture of the IOC, which is, coincidentally, also considered the Institute's "heroic period" (ARAGÃO, 1950, p.50).
2. Lutz was a very powerful example of the dividends to be accrued from cosmopolitanism. Due to his stature (gained abroad from Switzerland to Hawaii), Oswaldo Cruz did not hesitate to court him for the IOC, while Lutz considered it a great relief to escape his public duties in São Paulo and retire to a vocation of pure research (ANONYMOUS, 1956, p. 450). Although the benefits brought to the

IOC by the vast web of contacts revealed in his correspondence cannot be adequately measured, they perhaps can be summarized by the following story from his 1956 *Memórias* biography: “A few days after his death, a message was received, sent by the Carolinian Academy of Germany, a message that was granted free passage by the British censors despite the raging world war (Anonymous 1956:452, my translation).<sup>179</sup>

3. The opposite can also be demonstrated as valid; as the IOC’s resources and networks began to shrink, so did the prevalence of translation and foreign language in the journal. The career of Lauro Travassos, in which all foreign participation was dramatically curtailed after 1936, is a pronounced example of this, since after this point his production came to be focused primarily on three journals, all from Rio de Janeiro. The general decadence that José Coura describes upon his arrival at the IOC in 1979, moreover, was concomitant with the most extreme edge of the Portuguese-only period in *Memórias*. And the ruin of *Memórias do Instituto Butantan* was attributed by its own editor as a failure to adapt to the lingua franca.

Proposition three: Although colonial factors and political manipulation set English in a superior position to become the language of science, this was *fait accompli*, at least in the Brazilian biomedical milieu, only with the Post-Gutenberg technological revolution.

1. Experimental medicine, biomedicine, Tropical Medicine and, especially epidemiology, are by nature metanational pursuits since their biological basis – like mathematics, music or engineering – involves a type of metadiscursive logic. Thus it would be expected that the field would open dialog beyond artificial political borders. Nevertheless, the scientific community, like the national ‘imagined community’ described by Anderson (1983/2006) is based on literature. And there is no reason to assume that within a world scientific literary system, there would not also occur, to some degree, a scramble of the same type seen within the colonial economic system (e.g. over rubber production) or in technological arms races, since literary systems are based, in the final analysis, on technology, as is science itself.<sup>180</sup> Thus some system of ranking

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<sup>179</sup> Poucos dias após sua morte, foi recebida mensagem, enviada pela Academia Caroliniana da Alemanha, mensagem a que a censura britânica deu livre curso, não obstante estar-se em plena guerra mundial.

<sup>180</sup> Chagas 1922 describes Cruz as being obsessed with dominating the latest technologies and implementing them in the Institute (as he was with the latest scientific literature), such as the

would seem inevitable, as would attempts to control the channels of communication: not only to host the most prestigious journals, but the very language in which science is conducted (as another type of currency).<sup>181</sup> And to this end, any political, economic or industrial head-start would be taken advantage of.



**Figure 3.32:** Poster for the Brussels 1897 International Exhibition (left); Carlos Chagas (dark suit) and Adolpho Lutz (lab coat) receiving Albert Einstein at the Instituto Oswaldo Cruz in 1926 (right)

1. Thus when a profound technological change occurred in the way information and literature was delivered in the mid-1990s, it is expected that this revolution would have some effect on the entire

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second elevator in Rio de Janeiro, an air-conditioned hospital wing, etc. The bilingual format of *Memórias* and its full-color illustrations, incidentally, are also considered part of this calavcade (CHAGAS, 1922, p. 22-23).

<sup>181</sup> Not to mention to control the enormously profitable scientific literature market, as has recently become all too apparent with multinational mega-publishers such as Elsevier, and the mass open-access reaction by governments that can no longer afford inflated subscription rates.

literary system. And this revolution, as well, was preconditioned toward English, since the primary industrialization of computer technology (and, thus, the language of the original software, commands, keyboards etc.) for the mass market occurred in the US West Coast.

Section 3.4.4 shows that in a sample of important Brazilian biomedical journals:

- by 1988 1 of 9 were 100% English, 3 of 9 <50% English
- by 1993, 2 of 9 were <99% English, 3 of 9 <50% English
- by 1996, 5 of 9 were 100% English; 6 of 9 <85% English
- (by 2012 6 of 8 were 100% English, 7 of 8  $\leq$ 50% English)

The difference between 1993 (before the internet) and the general shift to online publishing in 1996 is quite marked, and its importance should not be underestimated. Although the descendants of the *Annales de l'Institut Pasteur* became English-only earlier (1989), this was due to their transference to the Elsevier publishing company, which had its own previously-established language policy and interfered little in Latin America<sup>182</sup>.

2. In this light, what began as a limited field of international languages –English, French and German – at the dawn of the 20<sup>th</sup> century was, through open conflict reduced to the two Allies, and by political manipulation reduced, practically speaking, to one. This nascent lingua franca, however, had not reached a dominant level in the Brazilian milieu until the 1990s, although and true obligatory status was catalyzed only by the advent of electronic publishing.

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<sup>182</sup> The rise and language policy of mega-publishers is another factor in this general movement that was not examined in this study.



#### 4 THE SYMBOLIC ECONOMY OF GLOBAL SCIENCE

In *Language and Symbolic Power* (1991, p. 43ff), Pierre Bourdieu explains that before the eighteenth century, both languages and trades existed in fields of parish-based ‘enclosures’ (in Marx’ phrase), a situation that began to change with the development of large-scale industry, which was accompanied by the rise of large-scale government. However, a state’s political authority is projected throughout its territory by the imposition of a large-scale language. Thus, as a precondition of its symbolic domination and large-scale economic production, its task is to create a minimally-functional ‘linguistic community.’ This community, moreover, must be “endlessly reproduced by institutions capable of imposing universal recognition of [a] dominant language” (BOURDIEU 1991, p. 46). Thus:

The official language is bound up with the state, both in its genesis and in its social uses. It is in the process of state formation that the conditions are created for the constitution of a unified linguistic market, dominated by the official language. Obligatory on official occasions and in official places (schools, public administrations, political institutions, etc.), this state language becomes the theoretical norm against which all linguistic practices are objectively measured (BOURDIEU, 1991, p. 45)

He clearly exemplifies this process by describing the consolidation of the French language:

This is seen in the difficulties raised by the translation of decrees during the Revolutionary period in France. Because the practical language was devoid of political vocabulary and divided into dialects, it was necessary to forge an intermediate language. (BOURDIEU, 1991, p. 258)

In light of the language trajectories in the Tropical Medicine literature traced in the preceding chapters, this example, which will be further elaborated below, becomes a valuable explanatory metaphor for the set

of principles and relationships involved in the consolidation of English as the lingua franca of science. In fact, before proceeding, it can already be said that the *linguistic market* now *unified* under English (and enforced beyond the mere statutory level of official policy by a culture in which the language's use just "goes without saying") is indicative that power is being/has been consolidated on a global scale within the *république mondiale de la science* (i.e. the institutionalized government of the scientific community) (POLYANI, 1968; JOLY, 1997). Of course, it will be immediately protested that there is no such official government over science (e.g. Munagorri 1998). While this may be ostensibly true –indeed the forms of this scientific state are not incorporated into a single monolithic body (World Health Organization, etc. notwithstanding) – the mere scale of linguistic conformity to this *intermediate language* within the scientific community is sufficient evidence that such governing power is functioning on an aggregate level. Hence, syllogistically: where, within a community, large-scale industry and large-scale language management are visible, the presence of large-scale government must be inferred to exist, even if it is invisible.

#### 4.1 THE INSTITUTIONALIZED STATE OF SCIENCE

However, scaling down only slightly from a global level, a host of very tangible gatekeeping bodies are indeed visible within this system, conforming to Bourdieu's "*institutionalized state*" (1986, p. 243).

##### 4.1.1 *Institutes*

In the first place are the many national-level science institutions (in this case Tropical Medicine institutes), such as the Instituto Oswaldo Cruz, the Institut Pasteur, the London School, etc., all of whose staff and research programs are funded by government, self-derived and private sources and generally function as appendages of the educational system, principally on a graduate level. The most prominent staff of these institutes become resources for the formation of meta-institutions such as IANPHI and the WHO<sup>183</sup>, a class of organizations existing in this context since at least since the League of Nations Health Committee

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<sup>183</sup> A reminder that these are no small affairs is the WHO's four billion dollar budget in 2014-15.



began in the 1920s.<sup>184</sup> These research institutions and their meta-counterparts are complemented by a host of scientific societies, such as the Royal Society, which was locally based with an eye to international production (ROYAL SOCIETY, 1665, p.1-2), or the International Leprosy Association, which was purposefully organized as an issue-based transnational body (both in the same city almost three-hundred years apart). These institutions exert control over the system in a number of ways: providing professional standards, training and credibility, establishing research techniques and managing focus, socializing inductees into the discipline and serving as a gateway to higher administrative levels such as international societies (ARAGÃO 1950, p.9;12;25;50; CHAGAS; DIAS, 1922, p.50; NEILL 2012, p.35; 37; 42). Another important function of such institutes was as production facilities (e.g. vaccination sera, pharmaceuticals) and as specialized treatment centers (e.g. Hamburg's maritime hospital).

#### 4.1.2 Societies

Whereas national institutes handle professional training and practice, national and international societies serve as executive umbrella organizations for the field, providing a measure of coordination and setting generally non-binding priorities among national institutes through debate about complex issues. The key control mechanism of such bodies is the selection of members, since a primary function is to establish social and professional authority within the field. These who's whos may consist of both voting members with decision-making power and observing members. In international versions, foreign dignitaries are added as corresponding members, who receive minutes of the meetings, contribute discussion via letter, etc. Although the priorities set by these societies may not be binding, in a social sense they are also not generally optional, since they represent the will of the group, i.e. the consecrated authorities in the field. Another important factor, especially for international societies, is that they must be physically headquartered somewhere (at least before cyberspace existed) and, thus, just as they gravitate toward capitals on a national level, selection of the host city on an international level confers global authority and is expected to provide

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<sup>184</sup> Another example of such global soft/"voluntary" governance (self-regulation) is the International Organization for Standardization (ISO), also founded in this same decade, which produces norms for almost every possible aspect of industrial production as well as for agriculture and health care (ISO, 2016).

access to resources and personnel: the destinies of the contemporaneous Rio-based versus London-based leprosy associations described in the previous chapter amply demonstrate power of such prestige and patronage and the damaging effects of its lack. However, precisely due to the prestige at stake, attempts to coin authority by creating new international societies may also be rejected by peers:

Many leading scientists in France, Britain, Germany and elsewhere also came to see the value in the creation of an International Society for Tropical Medicine (ISTM) [...] Early discussion about setting up the ISTM took place at the 1907 International Hygiene and Demography Conference, and the idea had strong support from the Germans and the British.[...] But overall, the value of the ISTM was questionable.[...] some scientists wondered why they were building an international society when so many scientists had already been invited to be part of each other's national societies [...] the ISTM never achieved the same status as the various national societies. (NEILL, 2012, p.37-38)

### 4.1.3 Congresses

Whereas, national and international societies are conceived of as permanent administrative-like bodies, temporary periodical congresses are planned, nominally, to serve a legislative function, although in reality they generally organize only a session of thematic hearings without formulating or passing resolutions. Their main purpose is to provide a platform for selected researchers to inform a broad spectrum of representatives in the field about their work, thus conferring individual exposure and promotion, especially for keynote or plenary session speakers, and to allow personal interaction among colleagues at the corollary social gatherings. The power and benefits of such meetings are increased with the diversity, status, number and global distribution of the delegates, and they were considered of great importance in the consolidation of Tropical Medicine, as their decisiveness has already been demonstrated in the career of Oswaldo Cruz and the trajectory of the IOC:

These international congresses had become a major force by 1900. In August of that year,

doctors and scientists arrived in Paris to attend first the International Medical Congress and then, only a few days later, the International Congress on Hygiene and Demography. The International Medical Congress did not initially have a special section on tropical medicine, yet the sessions on bacteriology [...] gave interested scientists a chance to interact [...] As one German delegate observed, personal meetings and exchanges of opinion were of enormous advantage to his colleagues, who often relied on the advice and expertise of foreign researchers when implementing new policies. (NEILL, 2012, p. 38)

As a subset of such congresses, often occurring conjointly with them, international expositions function in a juridical sense, since they are *juried* competitions of group presentations. They bestow public recognition, like the individual prizes discussed below, since they involve large nonscientific audiences: e.g. as mentioned in section 2.7.2, the 1911 International Exposition of Hygiene and Demography in Dresden attracted up to 30,000 visitors daily during its first two months. Events of this scale, whether expositions or congresses, naturally counted on government participation; for example, the meetings of the 1907 Berlin International Hygiene and Demography Congress and Hygiene Exposition took place in the Reichstag building (Neill 2012:40). At the 1912 International Medical Congress in St. Louis:

President Taft himself welcomed to the conference the three thousand guests from thirty-three nations, and in his speech singled out tropical medicine as a crucial new scientific field and stated that without the important discoveries made by the many workers in the specialty of tropical medicine, building the Panama Canal would not have been possible. (NEILL, 2012, p. 41)

At these public gatherings, Tropical Medicine was also framed in the context of a broader national project –that of colonialism– while internationalism was “reiterated at every conference” (NEILL, 2012, p. 39):

By the time of the 1902 German Colonial Congress, a tropical hygiene and medical section was on the program, designed to be accessible to

such nonspecialists as colonists, explorers, missionaries, and the general public. The session featured discussions on specific diseases such as malaria [...] and a lecture by Bernhard Nocht about the role of tropical medicine in the German colonies. The developing ties between colonial enthusiasts and tropical medicine were reinforced continually; by 1910, the German Tropical Medicine Society had become involved in organizing an entire “scientific day” at the German Colonial Congress, even foregoing an independent meeting of the society in favor of participation at the congress. (NEILL, 2012, p. 42)

#### 4.1.4 Prizes

Prizes, another form of judicial governance, must also proceed from a general governing body or be conducted by a recognized foundation whose authority has been sanctioned by the general community. They reinforce certain types of work as significant, creating a canon of immortalized winners, while simultaneously defining what is not (or is less) deserving. Committees consist of selected nominators held as expert colleagues, whose nominations are submitted to another committee, generally of core members of the organization, for review and final decision. As in the congresses, the more credence given to the award, the more capital it accrues within the community. The most outstanding example of this, of course, would be the coveted Nobel Prize, which internationally exalts a career with all the power of a pontifical beatification, generating a “signature”, or pass-key to instant respect: “The quasi-magical potency of the signature is nothing other than the power, bestowed on certain individuals, to mobilize the symbolic energy produced by the functioning of the whole field” (BOURDIEU, 1986, p. 81; 1993, p. 139). Although the power involved in such a designation can be used, more obviously with the Peace Prize, to steer public opinion regarding a political controversy, it can also subtly control the direction of scientific research since, for example, the establishment of a tropical diseases division at the Institut Pasteur only occurred in 1907 due to the prize money awarded through Alphonse Laveran’s Nobel Prize (NEILL, 2012, p. 19). The mechanics and some of the effects of this award will be discussed below in section 4.6.

### 4.1.5 Funding

As is clear from the example above, the creation of new branches of research (as well as the demise of extant institutions – Appendix B: questions 2-3) is predicated on sufficient funding, and is not without its strings attached. Private sector funding liaisons were instrumental in the foundation of the discipline and are still critical today:

Alfred Jones, who put up the lion's share of the money to fund the [Liverpool] school, was head of the Elmer Dempster Shipping Line, held a monopoly on the Congo-to-Antwerp traffic [...] was frank in explaining his largesse: "Money spent in our School of Tropical Medicine [22] is an investment, and we expect dividends from it. (LYONS, 1992, p. 70 in NEILL, 2012, p. 21)

The Rockefeller Foundation has maintained a pavilion at the IOC since the 1940s (Bio-Manguinhos 2016) and, along with the Bill and Melinda Gates foundation, provided the initial funding for IANPHI in 2006 (IANPHI, 2016). An interesting aspect of such non-governmental funding is that it was often international in nature:

The French sleeping sickness expedition to the Congo from 1906 to 1908 was funded in part by business interests, and the list of sponsors included several Liverpool companies. Many of the companies who invested in the new tropical medicine schools were also transnational enterprises. [...] Transnational business meant that companies were willing to fund research across colonial lines or hire doctors based more on expertise than nationality. [...] The very first mission organized out of the Liverpool school sent both British and Belgian doctors to Sierra Leone in 1899. (NEILL, 2012, p. 31)

Government funding, likewise, elects certain projects to the impoverishment of others, sometimes for pragmatic reasons, as in the case of the Institut für Schiffs- und Tropenkrankheiten:

To the annoyance of Koch, who felt that his Berlin institute was perfectly capable of

organizing the training, the German government instead chose to pursue a plan presented by the City of Hamburg to erect a new tropical medicine institution, in part because the financial burden would be shared between both Hamburg and the Reich, (NEILL, 2012, p. 22),

Or for reasons of prestige:

Dispersing scarce research dollars [sic] to a select few metropolitan institutions increased opportunities for the hiring of “stars” and the establishment of meaningful research positions in Britain itself – at the expense of colonial centers, some of whose officials protested the tactic, which diverted “scarce resources from the periphery to the metropole.” (HAYNES, 2001, p. 160-63,172 in NEILL, 2012, p. 21)

These same forces of selection and control through funding operate from the highest to the lowest levels: individual rivalries developed over fellowships, institutional positions, and funding for expeditions (NEILL, 2012, p. 29). Benchimol & Teixeira’s *Cobras, Lagartos & Outros Bichos* (1993) narrates the bitter feud over funding opportunities (unidirectional, at least) between Arthur Neiva, newly appointed as Head of Public Health for the state of São Paulo, and Carlos Chagas, as well as a second front over similar issues between Neiva and Vital Brazil, ending with the latter’s retirement from the Institute he had helped create.<sup>185</sup>

#### 4.1.6 Universities

A final area of institutionalized governance within science revolves around the university. Although Tropical Medicine institutes have been generally autonomous from the educational system, their staff did not work in complete isolation from it. Both Chagas and Koch, for example, held departmental chairs at universities near their respective institutes, performing double duty as institute director and professor. In other places, Hygiene or Tropical Medicine institutes were University

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<sup>185</sup> One reason the IOC was able to stay financially solvent was due to its patents on a number of vaccines, particularly for veterinary use. (Benchimol & Teixeira 1993:124)

departments, such as at the University of Rome (ROSS, 1910, p. 406). As in the other institutions outlined above, a teaching position is a type of canonization, conferring authority and protected status.

#### 4.2 THE OBJECTIFIED STATE OF SCIENCE

A second level of governance, Bourdieu's "*objectified state*" (1986, p. 243), could also be considered the community's *large-scale industry* or production: the literature.<sup>186</sup> It is simultaneously the product and main channel of communication, since the two things are information<sup>187</sup>. Just as Anderson contends (1983; 2006, p. 24-25) that the newspaper and novel were instrumental in the construction of imagined national communities, it must no less be that case that scientific journals have generated the international scientific community<sup>188</sup>, which is interesting in that scientific journals predate their appearance on a mass-scale (Cervantes notwithstanding), meaning that the scientific community is older than the nation or nationalism. This literature involves the journals of scientific institutions, such as the *Annales de l'Institut Pasteur* or *Memórias do Instituto Oswaldo Cruz* and the journals of scientific societies, such as the *Anais da Academia Brasileira de Ciências* or the *International Journal of Leprosy* and more popular general medical-scientific magazines such as *Brasil-Médico*. The annals/proceedings of international conferences can be found as special issues of certain journals; there have been many such issues in *Memórias*. Besides extremely lucrative multinational publishing houses such as Elsevier, publisher of *The Lancet*, *Cell* and the Science Direct e-journal collection,<sup>189</sup> open-access science metapublishers/databases have arisen in the digital age, including the PubMed (1996) system of the US National Institutes of Health and SciELO (1997) of the São Paulo Research Foundation (FAPESP), which also provides a publishing model and norms for its open-access member journals (Meneghini & Packer 2007:114-15). Metapublishers exercise a control over journals similar to that which journals exercise over submitting authors.

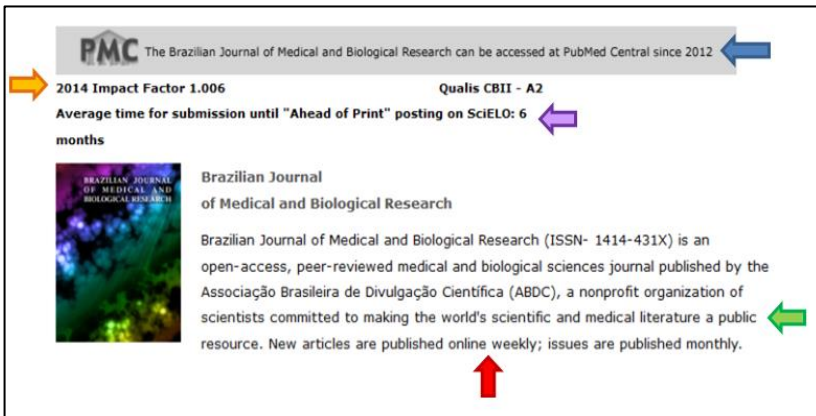
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<sup>186</sup> The expositions described in 4.2.3 could also be considered in this category as temporary objects.

<sup>187</sup> The word 'science' is derived from the Latin *scientia*, from *scīre*: to know.

<sup>188</sup> Bearing in mind that this excludes personal correspondence and local colleges of science, etc. since Anderson's imagined community consists of people who have never met (and are not likely to meet) yet share a cultural bond of shared identity and values as members of the same entity.

<sup>189</sup> Elsevier's 2015 revenues were over £2 billion (RELX 2016).



**Figure 4.1:** Front matter of the *Brazilian Journal of Medical and Biological Research* 48(9) Sept. 2015, prominently featuring scientometric indicators (orange), meta-publisher identity (blue and purple), new rapid periodicity (red), and commitment to open-access (green)

Since the minutiae of a number of journals have already been presented in this study, this topic will not be much belabored here beyond a few points. However it is worth pointing out, in light of the separation of powers observed among the various institutional entities described in the sections above, that a journal represents a complete government in itself: in the general organizational model, executive power rests with the editor(-in-chief), legislative power rests with the advisory (or editorial) board and judiciary power is exercised through peer review (with the editor as chief justice, so to speak). Authors submit their labor (and, generally, the rights to what profit can be had from it) to the journal's governance (judgment) in return for (the chance of) public conferral of the journal's authority and credentials upon the work. Thus, intellectual labor is exchanged for symbolic capital + visibility (perhaps citations could be considered the author's dividends). The credibility that comes through the journal's reputation for high standards is of fundamental importance in the scientific community since the product is nothing more than the presentation of evidence, 'empirical persuasion'<sup>190</sup>, which is more likely to be rejected or ignored if dressed in the wrong clothes or set in the corner rather than in the

<sup>190</sup> See Latour & Woolgar 1976:e.g. 21-27



spotlight. And this visibility/credibility in the digital age takes its form through ranking systems based on bibliometrics such as the impact factor (Appendix B: questions 37,39; LAMBERT, 2014, p.111-162).

[Political scientist] “Karl Deutsch’s cynical aphorism ‘Power is not having to listen’” (ANDERSON, 1983; 2006, p. 211) also applies within the system of scientific literature:

In Britain, the London-Liverpool rivalry was legendary. While [Canadian parasitologist] John Todd conceded that London was “the most substantial and best fitted to be a big school, “he pointed out that “Liverpool, on the other hand, by her expeditions, has done a lot of advertising and has supplied some pretty important facts to tropical medicine. Hence the jealousy” Todd maintained that the London specialists, “who of course do all the review writing for the London medical papers (Lancet, British medical Journal etc) have practically ignored our work.” (TODD 1906;1977, p. 256 in NEILL, 2012, p. 31)

While the cultivation of a blind eye based, perhaps, on disposition or habits of attention by these London editors did little harm in the long run to the well-situated Liverpool school, collective myopia by scientific gatekeepers, perhaps best summed up in New England Journal of Medicine editor Jerome Kassirer’s sentence “there is no science there” (i.e. in poor countries)(section 3.4.4) could well be detrimental to the community on a global scale.

#### 4.3 THE EMBODIED STATE OF SCIENCE

Bourdieu defines the embodied state as “the form of long-lasting dispositions of the mind and body” (BOURDIEU, 1986, p.243), and a main avenue by which these dispositions are inculcated is the values communicated in the realm’s (or community’s) literature. The differences between the scientific community and national imagined communities are perhaps clearest in their literature: the best-sellers and journalism of national literatures are built around shared experience, such as current events or semi-symbolic narrative, while what underlies the scientific literature is a pedagogy of method –the commitment to empiricism. However this scientific literature is also a palimpsest of the priorities of other systems, of which the most immediate example is its

almost exclusive expression in English, i.e. the working language of the UN, NATO and the EU and a legacy of the largest colonial empire. Because the important documents are in English, all advanced activity in the field is barred to non-natives without multilingual skills or the benefit of translation. English as the lingua franca of science, of course, did not “just happen”: Bourdieu criticizes traditional linguistics for “merely incorporat[ing] into theory a pre-constructed object, ignoring its social laws of construction and masking its social genesis” (BOURDIEU, 1991, p. 45) and adhering instead to the Saussurian approach that a language determines “its own area of diffusion by the intrinsic force of its autonomous logic” (BOURDIEU, 1991, p. 44), as if by some kind of unguided, spontaneous process. Rather, linguistic standardization is more appropriately understood in terms of its function: as a necessary step, perpetuated by the state, towards social organization:

Thus, only when the making of the 'nation', an entirely abstract group based on law, creates new usages and functions does it become indispensable to forge a *standard* language, impersonal and anonymous like the official uses it has to serve. (BOURDIEU, 1991, p. 48, original emphasis)

This social organization consists, perhaps primarily, of reorganizing values in such a way as they align with the hierarchy under construction:

The conflict between the French of the revolutionary intelligentsia and the dialects or *patois* was a struggle for symbolic power in which what was at stake was the *formation* and *re-formation* of mental structures. In short, it was not only a question of communicating but of gaining recognition for a new language of authority. (BOURDIEU, 1991, p. 48)

Such organization is not particularly interested in destroying or banning outright other languages (which would lead to perhaps unmanageable resentment and mutiny) but rather in carving out a channel, designated as ‘the standard’, for its administrative language of choice. All other channels thus become devalued “variants” or patois (language without a viable literature) in the collective mind, and since

the state attains control of the means of livelihood, currency, etc., subjects must adhere on some level to these collective values in order to exist within the realm. Thus to exist as a 'citizen' is to contribute to this project:

To induce the holders of dominated linguistic competences to collaborate in the destruction of their instruments of expression, by endeavoring for example to speak 'French' to their children or requiring them to speak 'French' at home, with the more or less explicit intention of increasing their value on the educational market, it was necessary for the school system to be perceived as the principal (indeed, the only) means of access to administrative positions. (BOURDIEU, 1991, p. 49)

Since it is impossible to avoid a bell curve of assimilation to an imposed language of power, a caste system will naturally develop whereby those who can adapt will rise in importance and those with multilingual skills become intermediaries between the 'have-nots' and the center of power.

The imposition of French as the official language did not result in the total abolition of the written use of dialects, whether in administrative, political or even literary texts (dialect literature continued to exist during the *ancien regime*), and their oral uses remained predominant. A situation of bilingualism tended to arise. Whereas the lower classes, particularly the peasantry, were limited to the local dialect, the aristocracy, the commercial and business bourgeoisie and particularly the literate petite bourgeoisie [...] who had, to varying degrees, attended the Jesuit colleges, which were institutions of linguistic unification) had access much more frequently to the use of the official language, written or spoken, while at the same time possessing the dialect (which was still used in most private and even public situations), a situation in which they were destined to fulfil the function of intermediaries. (BOURDIEU, 1991, p. 47)

Of course, it goes without saying that such inequality is advantageous to the 'haves'.

The members of these local bourgeoisies of priests, doctors or teachers, who owed their position to their mastery of the instruments of expression, had everything to gain from the Revolutionary policy of linguistic unification. Promotion of the official language to the status of national language gave them that de facto monopoly of politics, and more generally of communication with the central government and its representatives, that has defined local notables under all the French republics.

The imposition of the legitimate language in opposition to the dialects and *patois* was an integral part of the political strategies aimed at perpetuating the gains of the Revolution through the production and the reproduction of 'the new man'. (BOURDIEU, 1991, p. 47)

It should be very clear from this that language cannot be separated from power, i.e. that linguistic colonization is a fundamental step in the formation of any the state (unless it is simply a reorganization of a previous state). The wholesale application of this model to the (*state* of the) scientific community should be equally clear.

However, such a deterministic, top-down picture simultaneously calls for a view from the ground level. Thus, a parenthesis should be opened to discuss one of the most striking examples of such internalization/embodiment and the possible, or probable, motivations for it, regardless of how such behavior may be interpreted within larger systemic machinery. That example is Carlos Chagas' avidity, of his own accord, to acquire then-prevalent foreign languages, especially the extravagant costs he incurred to acquire German (both for himself and his children, see section 3.2.3). Although from a more calculating point of view, it would not be difficult to show how Chagas benefitted from his role at the IOC; after all, who doesn't want streets named after them, etc. And although it may not be a simple binary dilemma, there should be some limits placed on incredulity toward the notion that he was simply fulfilling his duty as a scientist and "predilect disciple" of Oswaldo (ARAGÃO, 1953, p.1). The effusive testimony of close colleagues, such as Eurico Vilela, certainly attests to that idea:

The life of Carlos Chagas was one of continual labor [...] And all his multiform effort converged upon one ideal. Since the day that he approached Oswaldo Cruz, he was taken with raptured enthusiasm for the master. Voluntary disciple at first, later incorporated into the spiritual family of this House, assistant and chief of service, upon him fell the right of succession in the direction of the Instituto Oswaldo Cruz, the heritage of the scientific ideas of the great Master.” (VILELA, 1934, p. 1, my translation<sup>191</sup>)

Although there is little question that the Institute indeed was an enterprise, and that successful negotiation of its business/funding concerns by insistently proving its utility to the government, as well as by its proprietary industry, kept the doors open, the statement above and many others like it in *Memórias* editorials beginning in 1914 indicate that business concerns were secondary to its a priori purpose: to lift Brazil, that “vast hospital”, out of the morass of its endemic plagues that it might take its place among the nations of ‘the civilized world’(e.g. BARBOSA, 1917, p. 35; 36; 59; 64; CHAGAS; DIAS, 1922, p. 14; STEPAN, 1976, p. 6-7).

Thus, with such a mission in view, a pragmatic approach to foreign language, more *instrumental* than as *identification* would be expected. “We will do whatever is necessary to get what they’ve got, i.e. the scientific-technological discourse-mechanism by which we can save our own people, and perhaps earn a little credibility for Brail while we’re at it, or even contribute to global progress”, or perhaps to frame it in Hamlet’s dilemma: “to be”. The IOC’s initial solution to this language problem<sup>192</sup> was simply to fuse the principal languages into one journal according to the abilities or predilections of each author, with a baseline of the local Portuguese for the sake of its immediate beneficiaries (bearing its government sponsorship in mind).

It is important to point out when transposing the state-language-standardization metaphor to English and the scientific community,

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<sup>191</sup> A vida de Carlos Chagas foi um de continuo labor [...] E todo seu esforço multiforme convergia para um ideal. Desde o dia em que se aproximára de Oswaldo Cruz, tomára-se de entusiasmo arrebatado pelo mestre. Discipulo voluntario primeiro, incorporado depois á familia espiritual desta Casa, assistente e chefe de serviço, sobre elle recahiu de direito a sucessão na directoria do Instituto Oswaldo Cruz, a herança dos ideaes de sciencia do grande Mestre.

<sup>192</sup> Regarding its production; its consumption was omnivorous, as demonstrated in section 3.1.

however, that the action has been implemented among literate subjects (local scientific communities), i.e. the patois-zation is of *regional scientific literatures*. There may be many scientific literatures, but they are made inviable; like the monolingual third estate, they cannot interact with or penetrate the center of power. Such embodied self-devaluation is patent in Chagas Jr.'s comment (3.4.2) that "Portuguese is useless" (although he, of course, as an authority, would call it 'realism' and, pragmatically speaking, he was ahead of the curve). This internalization has been manifested perhaps in a more detailed and unselfconscious way by an anonymous Brazilian doctoral student in an interview:

She states that the majority of "relevant and important" articles for the studies she conducts come from international sources, thus identifying English as a turnstile to necessary research content. The explanation for this phenomenon is that she considers the English-language scientific literature, particularly that published abroad, "richer in information". She expresses that this opinion is held in common by colleagues with the most advanced degrees: "we [italics mine] use PubMed more. SciELO [i.e Portuguese-language research] is used more by undergrads and masters students." Moreover, she reported that using English-language articles helps her "keep up to international standards", which necessarily implies that material written outside the international language does not meet these standards, i.e., that it is substandard, provincial, defective. Thus, it is no stretch to say that English is the portal to viability in her discipline, which is to say it is a prerequisite for those who are truly serious. And her response indicates that she sees it as such, not due to the characteristics of the language itself or to the national cultures of countries in the inner-circle such as the US or the UK, but rather to the standards, that is to say the global standards, of quality associated with English-language scientific literature. [...] Admission to the 'pantheon' (i.e., getting one's work published in the scientific inner-circle) however, still appears to be rigorously governed and protected by the (domesticating?) 'international standards' that Author A considers

valuable. Thus, it would appear that what leads the outsider to consider the center favorably is the very mechanism that excludes him. (HANES, 2013, p. 238; 240)

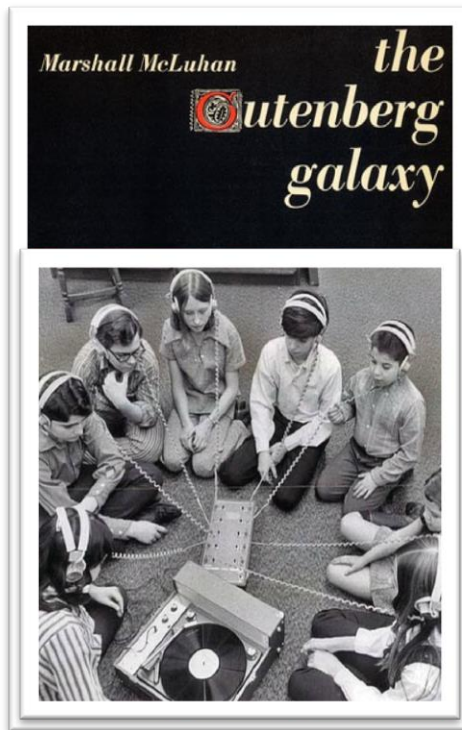
Hobsbawm adds a different useful aspect to this question based on the history of colonialism. He states that although the notion of the colonizer's so-called 'civilizing mission' is hardly trustworthy, it is, nevertheless, "not entirely spurious" (HOBSBAWM, 2008, p. 8) since the nineteenth century European colonizers of the Americas, Africa and the Pacific "were indeed technologically superior to the local societies" (HOBSBAWM, 2008, p. 9). However, he explains that the nature of the enterprise was such that, after initial military conquest, only a bare minimum of personnel were left behind to maintain order. As an example, he cites that the 400,000,000-plus population of India was ruled by "never more than about ten thousand" British – an "absolutely tiny number" (HOBSBAWM, 2008, p. 10). Thus to maintain order, "they have to rely on two main instruments – cooperation with local interests and the legitimacy of effective power – while also exploiting the disunity of their adversaries and their subjects (*divide et impera*)" (HOBSBAWM 2008, p. 11). The former of these instruments is quite interesting in light of the voices and postures exemplified above; thus the governed must accept subjugation by being convinced that it is in their best interests to do so (whether really or illusorily so); thus they must believe that they are getting something out of it. In the case of Oswaldo Cruz: through his voluntary submission to Paris and European medicine (which, to his surprise, was freely offered by virtue of Dom Pedro II's prior investment in the Institut Pasteur) he obtained the supplementary advanced methods and techniques necessary to free Rio of its concurrent plagues (turning down a warm offer of employment at the Institut to do so<sup>193</sup>). On the other hand, the post-1980 move by *Memórias* editors Coura, Garcia and Momen toward an English-only format could be read more as an act of desperation to keep the journal visible and viable in the rankings, in order to stave off another shutdown, as had occurred from 1976-79, as well as to avoid the fate of *Memórias do Instituto Butantan*, which could no longer attract even its own institutional authors due to its perception as 'regional' and 'disconnected' from the central scientific nervous system. Juxtaposing

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<sup>193</sup> Bearing in mind that less than a decade later, Rocha Lima would leave the IOC to take the Germans up on a similar offer, remaining for many years as a sector chief at the Bernhard Nocht Institute.

these two periods for Brazilian science, the former, of exchange and collaboration, although during a period of colonialism, and the latter, of pressured conformity to “international standards” in an ever-tightening global system, which although offering a clear universal channel of communication throughout the community, monstrously benefits Anglophone countries when the numbers are added up (ROYAL SOCIETY, 2011, p.E.G.17; HOBBSAWM, 2008, p.45; 56; BARANY, 2005).

#### 4.4 DIGITAL TECHNOLOGY AND THE CONDITIONS FOR A UNIFIED LANGUAGE MARKET



**Figure 4.2:** Original 1962 paperback cover of Marshall McLuhan’s *The Gutenberg Galaxy* with interior illustration superimposed

The language trajectory results from *Memórias* in comparison



with the rest of its Brazilian cohort led to the hypothesis that the Internet, and its resulting wave of digital publishing, clinched what had been a growing movement toward English as the lingua franca of science in Brazil, creating special conditions for a general paradigm shift, although of course not complete in every case. And, granted further study, this may well be the case in the rest of South America or much of the Global South. Nevertheless, such results in the South American arena are significant in that this was the site of the earliest nationalist movements, having never come under direct colonial rule during the Age of Empire (the Scramble for Africa, etc.), as well as the fact that Brazil had been itself, for a brief period in the nineteenth century, the seat of a world empire. Thus, informed by the work of Benedict Anderson, Marshall McLuhan, Manuel Castells, Walter Ong and Pierre Bourdieu, attention will be focused here on the history, purpose and properties of the Internet as the culmination of a long technological march that has resulted in new forms of economy and social organization, especially within the scientific community, in order to clarify the effects observed in the Brazilian milieu of Tropical Medicine literature.

#### **4.4.1 The origin and original purpose of the Internet**

Although there is much significant backstory in the development of what would become the World Wide Web, taken up in detail by Castells (1996;2000, 2001), a few points will be retraced here. The Internet became a public phenomenon in 1995 with the first release of Microsoft's Internet Explorer in its Windows 95 software package (CASTELLS, 2001, p.16-17), although its original development was hardly intended for public – or global – use:

First of all, the Internet was born at the unlikely intersection of big science, military research, and libertarian culture. Major research universities and defense-related think-tanks were essential meeting points between these three sources of the Internet. ARPANET originated in the US defense department, but its military applications were secondary to the project. IPTO's [Information Processing Techniques Office] main concern was to fund computer science in the United States, letting scientists do their work, and hoping

something interesting would come out of it.  
(CASTELLS, 2001, p.17)

Although it is clear from this statement that multiple superimposed interests and agendas were involved in the creation of this system, what was originally funded was the development of an architecture of thousands of autonomous computer networks that could not be controlled from any one center in order to sustain US military communications during the event of a nuclear strike (CASTELLS 1996;2000, p. 6). Thus the Internet was a child of the Cold War. However, despite the fact that military funding had been decisive in the early stages of the electronics industry in the 1940-60s, the project was developed at US universities in the early 1970s by scientists and engineers, piggybacking on local networks already under development at a number of campuses, such as MIT, Brown, and Stanford, and thus became infused with “the culture of freedom, individual innovation, and entrepreneurialism that grew out of the 1960s’ culture of American campuses” (CASTELLS, 1996;2000, p.5). Its features, “a decentralized network structure; distributed computing power throughout the nodes of the network; and redundancy of functions in the network to minimize the risk of disconnection”, “embodied the key answer to military needs for survivability of the system: flexibility, absence of a command center, and maximum autonomy of each node” (CASTELLS, 2001, p. 17). Thus, the Internet arose from public sources (government, university and research) rather than private business initiatives, although it has, obviously, been co-opted and commercialized by them since.

The World Wide Web came into existence when CERN released a browser/editor program written by Tim Berners-Lee on the existing Internet in 1991(CASTELLS,2001, p. 15), which was built around the hypertext concept, whose early proponents envisioned a self-evolving “universal library, a global information index, and a computerized royalty system” (WOLF, 1995). The speed of the WWW’s initial dissemination was in large part due to CERN’s decision in 1993 to make it non-proprietary and freely available, unlike other competing systems (CERN, 2003).

#### **4.4.2 Growth, scale and language**

Castells reports that “at the end of 1995, the first year of widespread use of the world wide web, there were about 16 million users” whereas there were more than 400 million in early 2001

(CASTELLS, 2001, p.3). This number was reported to have reached over two billion by 2010 (Lynn 2010), with the size of Google's index at over 45 billion webpages in May 2016 (de KUNDER, 2016). Despite its *world-wide* aspirations, however, the language of the Internet has been quite slow to shift from its cultural roots. In 1999, for example, the United States and Canada accounted for 60.1% of the world's domains (CASTELLS, 1996; 2000, p. 379), and there were 179 million users in over 200 countries, of which 102 million were from the United States and over 40 million from Europe (CASTELLS, 1996; 2000, p. 375). In the first systematic statistical analysis of the Internet's language, a 2002 German study observed that of two billion websites, over 1.1 billion were in English (56.4%), with German in a far distant second place at 7.7%, followed by French (5.6%) and Japanese (4.9%) (Portuguese was 11<sup>th</sup> place of the 18 named languages at 1.5%; "other" was 8.3%) (EBBERTZ, 2002). However, the study reports that this represents a significant gain for world languages, since in 1997 the percent of English content was estimated at over 80%.

From such figures, it is apparent that the creation of digital scientific journals, which in Brazil lagged only months behind the public launch of the Internet in 1995, was inserted into a system whose linguistic substrate was thoroughly English: i.e. software infrastructure such as UNIX, JavaScript and HTML, content (as described above in EBBERTZ, 2002), domain standardization and hosting, etc. Moreover, the scientific literature was transferred into this English-based digital space from a literary system that was already heavily favoring English, due to a complex of factors including sustained British colonial expansion, the destruction of French and German infrastructure and prestige in the World Wars (including Germany's occupation and political division), the immigration of scientists and transfer of post-Allied focus to the US (and hence the UN and its *de facto* language), the effects of which were demonstrated in the trajectories of *Memórias*, *Annales de l'Institut Pasteur*, etc. and so explicitly declared by Chagas Jr. already in 1977 (FUNDAÇÃO GETÚLIO VARGAS, 1977, p.79-80).

#### **4.4.3 The digital age in historical perspective**

However, the global digital superstructure described above was conditioned by and built on the well-established foundation of another technological revolution: the invention of typography – the Gutenberg

Age – a revolution that brought with it profound alterations to the political, economic and religious fabric of European (and by its subsequent imperial extensions, world) society. And thus no less of a cultural paradigm shift is to be expected of the digital revolution – the Information Age – and its global hyperconnectivity.

McLuhan distinguishes the Gutenberg Age from the preceding medieval one by alteration in two main factors: *plurality* and *sensory integration*. Before the invention of typography, Europe is described as a ‘scribal culture’ whose “book trade was a second-hand trade even as with the dealing today in old masters” (McLUHAN, 1962; 2000, p.130; 134, respectively). Its space is likened to a cathedral, a unified sensory field – *sensus communis* (McLUHAN, 1999, p. 37) – combining the tactile, the visual, and particularly the aural aspects of this principally oral society, among whom the power of literacy is concentrated in the hands of the few. This sensory configuration was perfectly reflected in its social organization: lands of villages (i.e. group rather than individual identity) dominated by a small but powerful organization with eternal and universal aspirations, which was the gatekeeper of the letter and all the theoretical and historical understanding that literacy and could unlock. This was a plural society with free trade and unchecked borders:

It was not until the fifteenth century that the first symptoms of protection began to reveal themselves. Before that, there is no evidence of the slightest desire to favor national trade by protecting it from foreign competition. In this respect, the internationalism which characterized medieval civilization right into the thirteenth century was manifested with particular clarity in the conduct of the states. They made no attempt to control the movement of commerce and we should seek in vain for traces of an economic policy deserving of the name. (PIRENNE, 1936, p. 91 in McLUHAN 1962; 2000, p.115).

However, with Gutenberg, the Renaissance became “the meeting of medieval pluralism and modern homogeneity and mechanism” (McLUHAN, 1962;2000, p.141). Under this paradigm, McLuhan argues, the eye, the visual page, is pushed to the forefront of human consciousness in a type of technology-induced schizophrenia (McLUHAN, 1962;2000, p. 22), juxtaposed as “reason-without-rhyme” to the pre-literate “rhyme without reason” (1989, p. 11). On the other

hand, McLuhan's student, Walter Ong, counters this argument with a developmental approach:

Nevertheless, without writing, human consciousness cannot achieve its fuller potentials, cannot produce other beautiful and powerful creations. In this sense, orality needs to produce and is destined to produce writing. Literacy, as will be seen, is absolutely necessary for the development not only of science but also of history, philosophy, explicative understanding of literature and of any art, and indeed for the explanation of language (including oral speech) itself. (ONG, 1982, p. 14)

Despite such differences in interpretation, there is unanimous agreement that the development of print engendered a chain reaction of phenomena that wiped away the old order.

The first of the phenomena was the creation of the industrialized commodity, which led to industrial society. Benedict Anderson specifies that the typeset book was a novel, unique durable, differing from other commodities in that it was a "distinct, self-contained object, exactly reproduced on a large scale" (ANDERSON, 1983; 2006, p.34). The immediate violence of the dissemination of printed matter demonstrates the spectacular early success of print-capitalism:

It has been estimated that in the 40-odd years between the publication of the Gutenberg Bible and the close of the fifteenth century, more than 20,000,000 printed volumes were produced in Europe. Between 1500 and 1600, the number manufactured had reached between 150,000,000 and 200,000,000 (ANDERSON, 1983;2006, p.33-34).

This is among an estimated population of 100,000,000 in 1500 (FEBVRE; MARTIN, 1976, p.248-249, in ANDERSON, 1983; 2006, p.37):

If, as Febvre and Martin believe, possibly as many as 200,000,000 volumes had been manufactured by 1600, it is no wonder that Francis Bacon believed that print had changed 'the appearance

and state of the world' (ANDERSON, 1983; 2006, p.37); inset quote EISENSTEIN, 1968, p. 56).

Clearly, “scribal culture could have neither authors nor publics such as were created by typography” (McLUHAN, 1962; 2000, p.130). What printing created was twofold: one, a transnational mass market for books – “for the first time a truly mass readership and a popular literature within everybody’s reach” (FEBVRE; MARTIN, 1976, p. 291-295, in ANDERSON, 1983;2006, p.37); two, a new market for books in the vernacular languages, since only a very small proportion of the populace was literate in Latin, the initially plied market<sup>194</sup> (ANDERSON, 1983;2006, p.38).

What print-capitalism’s successful venture also accomplished, whether intentionally or not, was the breakdown of a unified linguistic field, i.e. the sole, pan-European language of power<sup>195</sup>, by consolidating the vernaculars. Anderson explains that these vernaculars would go on to become nuclei of national consciousness (though not yet *nationalism* per se):

First and foremost, [these print-languages] created unified fields of exchange and communication below Latin and above the spoken vernaculars. Speakers of the huge variety of Frenches, Englishes, or Spanishes, who might find it difficult or even impossible to understand one another in conversation, became capable of comprehending one another via print and paper. In the process, they gradually became aware of the hundreds of thousands, even millions, of people in their particular language-field, and at the same

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<sup>194</sup> “The initial market was literate Europe, a wide but thin stratum of Latin-readers. Saturation of this market took about a hundred and fifty years. The determinative fact about Latin -aside from its sacrality- was that it was a language of bilinguals. Relatively few were born to speak it and even fewer, one imagines, dreamed in it. In the sixteenth century the proportion of bilinguals within the total population of Europe was quite small; very likely no larger than the proportion in the world’s population today, and - proletarian internationalism notwithstanding - in the centuries to come. Then and now the bulk of mankind is monoglot. The logic of capitalism thus meant that once the elite Latin market was saturated, the potentially huge markets represented by the monoglot masses would beckon.” (ANDERSON, 1983;2006, p.38)

<sup>195</sup> Latin is also referred to by Anderson as a ‘truth language’ (ANDERSON, 1983;2006, p.15); this effect was slower on Latin as a lingua franca of the scholarly elite, since there was no effective substitute until the languages of competing colonial empires gained greater currency. Moreover, he points out that Latin survived in certain courts much longer, e.g. under the Hapsburgs until the 19<sup>th</sup> century (ANDERSON, 1983; 2006, 42).

time that only those hundreds of thousands, or millions, so belonged. These fellow-readers, to whom they were connected through print, formed, in their secular, particular, visible invisibility, the embryo of the nationally imagined community. (ANDERSON, 1983; 2006, p. 44)

The rapid effects of these print languages and their blossoming communities are evidenced especially in the boom in German-language books manufactured between 1520–40 (ANDERSON, 1983; 2006, p. 38) in parallel with the fractioning of German principalities along Protestant or Catholic lines<sup>196</sup>. Moreover, during this same period, French became the official language of the courts of justice under François I (ANDERSON, 1983; 2006, p.42). Thus “print-capitalism created languages-of-power [i.e. languages of state] of a kind different from the older administrative vernaculars” (ANDERSON, 1983;2006, p. 45), although Anderson hastens to point out that:

In every instance, the ‘choice’ of language appears as a gradual, unselfconscious, pragmatic, not to say haphazard development. As such, it was utterly different from the selfconscious language policies pursued by nineteenth-century dynasts confronted with the rise of hostile popular linguistic-nationalisms.(ANDERSON, 1983;2006, p.42)

Nevertheless, despite the apparently chance encounter between “capital, technology and linguistic diversity” which elevated these local languages to a new status and circulation, their political usefulness to the state “set the stage for the modern nation” (ANDERSON, 1983; 2006, p. 45).

Moreover, the success of this industrialized commodity both engendered and was sustained by capitalism: “It is worth remembering in this context that although printing was invented first in China, possibly 500 years before its appearance in Europe, it had no major, let alone revolutionary impact — precisely because of the absence of capitalism there” (ANDERSON, 1983; 2006, p. 44). Neither was this capitalism local in nature; Anderson describes the new book-publishing

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<sup>196</sup> Such as the 1526 League of Torgau in response to the 1521 Edict of Worms (ergo, the policy *cuius regio, eius religio*), i.e., the Balkanization, so to speak, of the Holy Roman Empire.

industry as having “felt all of capitalism’s restless search for markets. The early printers established branches all over Europe,” ignoring political boundaries (ANDERSON, 1983; 2006, p.38). Meanwhile, this search for markets in other spheres of commerce took on a global nature with the commissioning of explorers such as Columbus (1492), da Gama (1498) and Magellan (1518). Trade later turned to colonization under the influence of mercantilism, as states thus became competing corporate business enterprises/empires.

It is important to point out that with Gutenberg, Europe entered “the technological phase of progress, when change itself becomes the archetypal norm of social life” (McLUHAN 1962; 2000, p.155). Thus the basis for European colonial enterprise was the direct result of this paradigm –superior technology– which led to the necessary naval and military developments to maintain the advantage.

China came within a hair’s breadth of industrializing in the fourteenth century. That it did not, changed the history of the world. When in 1842 the Opium Wars led to Britain’s colonial impositions, China realized, too late, that isolation could not protect the Middle Kingdom from the evil consequences of technological inferiority. (JONES, 1981, p.160, in CASTELLS, 1996; 2000, p. 8)

[...] because Japan’s technological level was lower than China’s, by the mid-nineteenth century the *kurobune* (black ships) of Commodore Perry could impose trade and diplomatic relations on a country substantially lagging behind Western technology. However, as soon as the 1868 *Ishin Meiji* (Meiji Restoration) created the political conditions for a decisive state-led modernization, Japan progressed in advanced technology by leaps and bounds in a very short time span. (CASTELLS, 1996; 2000, p. 11)

After further improvements to press design in the early 19<sup>th</sup> century allowed a dizzying proliferation and market penetration of disposable pulp newspapers and literature, which contributed to increased literacy, McLuhan considers the Gutenberg era to have come to a psychosocial conclusion with Einstein’s recognition of the curvature of space in 1905, explaining that this development spelled the end of the fixed point of view and obsolesced compartmentalized knowledge,



which he also identifies with mechanistic Newtonian physics and Adam Smith's laws of production and consumption (McLUHAN 1962; 2000, p. 253; 268-269). Although the telephone had been patented by Bell in 1876, the first voice transmission via radio waves (1909) followed soon after Einstein's announcement (in the vicinity of what would become Silicon Valley<sup>197</sup>, incidentally). Commercial radio programming had begun to proliferate by the 1920s (SCHNEIDER, 1996), creating a new mass *oral* media and market that added a further dimension to mass discourse. Before the end of that same decade, the first experimental televisions had been developed, and this new *audio-visual* medium was already being used by the BBC to specifically influence public opinion abroad in the 1930s (SCANNEL, 2005, p. 53). The 'collective living room' has only grown more compelling and immediate in the ensuing years, especially since the advent of cable television and 24-hour news services such as CNN.



**Figure 4.3:** Screenshots of peak moments in the history of CNN live coverage: the 2003 Iraq War “shock and awe” campaign and the 9/11/2001 attacks<sup>198</sup>

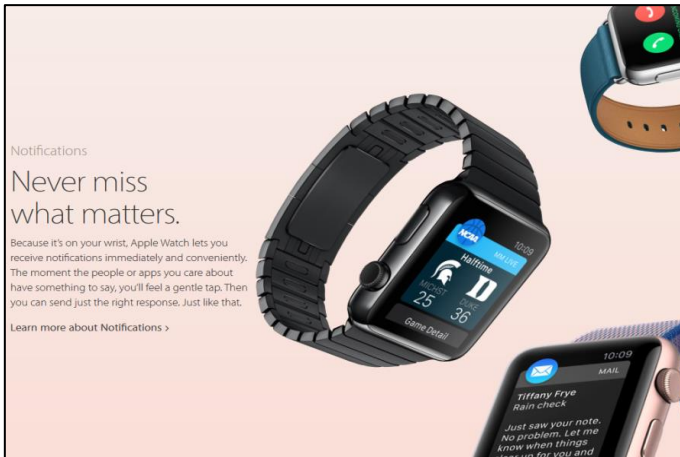
#### 4.4.4 The nature of the Digital Age and its bearing upon global science

Although the telephone, according to McLuhan, had served to “erode the body as hardware”, creating a “disembodied consciousness”

<sup>197</sup> i.e. southern San Francisco: where integrated circuits, microprocessors and personal computers would later be developed.

<sup>198</sup> Note the convergence of sensory modes: the base video feed, the textual framing (including branding) and the continuous voiceover narration.

(McLUHAN, 1989, p.176) and the television<sup>199</sup> had generated a specific kind of audience passivity unknown in oral societies (McLUHAN, 1962; 2000, p. 36-40), these media technologies have fostered a mass cultural journey toward collectivity and away from individual identity in a sort of return to pre-Gutenberg values (McLUHAN, 1989, p.175-176), i.e. the so-called ‘global village’, which might be presumed to entail some form of renewed lay/clerical divide (given the new oral, narrative, unlettered focus), as well as new forms of social colonization and domination from (one or) a handful of global metropolises (in this light, the arrangement would appear as more of a ‘global fiefdom’). In such a neo-medieval paradigm, the elevation of a single imperial language to a universal status similar to (or yet more pervasive than) Latin would indeed seem fitting.



**Figure 4.4:** Advertisement for the Apple Watch at [www.apple.com](http://www.apple.com) highlighting its instant notifications function for internet calls, email/messaging, and news updates.

These trends have been both heightened and redirected through the data processing and communication refinements of the Digital Age, first of all, in that the page, which had been excluded or minimized in the radio/television ‘turn’, has now migrated to the screen, where its virtual content can be endlessly manipulated and then materialized at

<sup>199</sup> For the sake of brevity, a discussion of the development of the mass visual image through photography and film, and its social applications like the Hollywood production and distribution system, will remain unsketched here.

will through inexpensive desktop printing devices, which has revolutionized the printing industry (e-books, e-newspapers and, most importantly for this study, e-journals), although mechanical printing does not yet seem in danger of extinction (at least for bookshops and newspaper stands). The Internet, especially since Web 2.0, has allowed for worldwide multilateral simultaneous communication, i.e. a technological framework for massively expanded social, professional and academic (scientific) networks, which has been an engine for collaborative authorship and Big Science. As an example, the breadth and volume of Adolpho Lutz' correspondence network from a hundred years ago, while still quite strong, would no longer be considered so extraordinary among the bustling e-correspondence and video conferencing of important scientists today – multilingualism notwithstanding – but, then again, as José Coura emphasized, it is no longer possible to be a scientist without knowing English (Appendix B, question 17).

Returning to Bourdieu's term, moreover, these technologies are also becoming increasingly *embodied*, i.e. interiorized, through *personal* devices such as Smartphones and, now, jewelry such as Smartwatches (see Figure 4.4 above<sup>200</sup>). Within this instantaneous, ubiquitous electronic environment, distance and time constraints are removed. Here a *cloud*<sup>201</sup> of visual (curved screen, 3D), aural (surround sound), textual and tactile (mouse, keyboard, touchscreen, vibration) stimuli envelop users.

Is plurality regained? Yes and no; yes, in that the world is becoming increasingly wired<sup>202</sup>, meaning that most anyone, anywhere could (potentially) connect with most anyone else (to what degree this potentiality is being realized is another matter). Does industrial homogeneity still dominate? Also, yes and no. Yes, in that a sole company, Google, has attained a virtual monopoly of the Internet search

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<sup>200</sup> Advertisement text: "Never miss what matters. Because it's on your wrist, Apple Watch lets you receive notifications immediately and conveniently. The moment the people or apps you care about have something to say, you'll feel a gentle tap. Then you can send just the right response. Just like that." (APPLE.COM, 2016)

<sup>201</sup> In place of a stone and glass cathedral. It is interesting to consider this in light of McLuhan's discussion of the semiotics of typography as a material: media such as that stone tablet or parchment emphasize time whereas more ephemeral media such as papyrus and paper emphasize space (McLUHAN, 1962;2000, p.115); ergo, the question, what does a virtual cloud of electrical charges represent?

<sup>202</sup> According to internetlivestats.com (21 June 2016) there are 3.395 billion Internet users, with "around 40% of the world population having an internet connection. In 1995, it was less than 1%. The number of internet users has increased tenfold from 1999 to 2013."

engine, and that a handful of mega-trafficked sites such as YouTube (owned by Google), Facebook, Amazon and Wikipedia<sup>203</sup> have become the general channels of global web activity. Just to give an idea: according to web statistics site Alexa.com (owned by Amazon), as of April 2016 seven of the top 10 sites in the world are based in the US (eight counting Google India); of the top 50, 25 are from the US, with another 10 being localizations of US sites (e.g. google.com.br), although only 9.3% of world Internet users are from North America (Alexa.com 2016; Internet World Stats 2015).<sup>204</sup> The top three Japanese sites – the only ones in the top 50 – are localizations of Google, Yahoo and Amazon; the only two German sites in the top 100 are localizations of Google and Amazon. Likewise, the initial *or only* site in the top 100 for France, Italy, the UK, Mexico, Hong Kong, Canada, Indonesia, Poland and Australia are localizations of Google (Alexa.com 2016; Wikipedia 2016). The only non-US-based portal, social or commercial sites in the top 50 are from Russia and China (which has permanently banned YouTube). On the other hand, homogeneity does not dominate since anyone with a minimum of know-how can build a site, post any sort of content or publicly comment in various fora, i.e. becoming a (potentially celebrated) contributing author to the collective mind (just ask Charlie “bit my finger” Davies-Carr, Andrew “don’t taze me, bro” Meyer or Edward Snowden).

Thus the culture seems simultaneously more collective and more individual. It is more individual in that previously undreamt-of individual control over media content (as well as storage and sharing) is now taken for granted. It is more collective in that it is getting increasingly difficult to separate oneself from digital social networks, newsfeeds and the like (even to find the desire to do so), as tech companies are now ‘connecting’ (i.e. colonizing – and of course, tracking) consumers’ very bodies (as in the figure above).<sup>205</sup>

### *A new (scientific) economy*

Today our science and method strive not towards

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<sup>203</sup> Perhaps primarily on the strength of its highly multilingual user-based translation – or transcreation – format.

<sup>204</sup> According to this same site, by 2015 Internet penetration had reached a high of 87.9% in North America and a low of 28.6% in Africa, with growth rates between 2000-2015 of over 7200% in Africa, over 3600% in the Middle East, over 1800% in Latin America and over 1300% in Asia.

<sup>205</sup> As a ‘service’ of course, and at the expense of the colonized.

a point of view but to discover how not to have a point of view, the method not of closure and perspective but of the open “field” and the suspended judgement. Such is now the only viable method under electric conditions of simultaneous information movement and total human interdependence. (McLUHAN, 1962;2000, p. 276)

Castells declared that the Internet represents the birth of a new form of community promising unbounded sociability (2001, p.119). Regarding the *scientific* community, however, he first admits that it “has always been to a large extent an international, if not global, community of scholars” since the times of scholasticism, going on to state that:

contemporary science is characterized by on-line communication as a permanent feature of its endeavor. Indeed the Internet was born from the perverse coupling of the military and “big science,” and its development until the early 1980s was, by and large, confined to networks of scientific communication. With the spread of the Internet in the 1990s, and the acceleration of the speed and scope of scientific discovery, the Internet and electronic mail have contributed to the formation of a global scientific system. In this scientific community there is certainly a bias in favor of dominant countries and institutions, as English is the international language, and US and Western European science institutions overwhelmingly dominate access to publications, research funds, and prestigious appointments. However, within these limits, there is a global network of science, which, albeit asymmetrical, ensures communication, and diffusion of findings and knowledge. Indeed, those academic systems, such as the Soviet Union, which forbade communication in some fields of research (e.g. information technology) paid the heavy penalty of insurmountable retardation. Scientific research in our time is either global or ceases to be scientific. (CASTELLS, 1996; 2000, p. 125)

Voices from within the scientific community go equally far in heralding a new paradigm of inescapable global interconnectivity: the

editor of *Research in Microbiology* (formerly *Annales de l'Institut Pasteur*) wrote that “all journals should now find their roots in the international community in general and interact with a broad network of scientists and institutions” (KOURILSKY, 1989, p.5, in LEMOS, 1993, p. 164, my translation<sup>206</sup>). However,

On the other hand, since the 1960s, the accelerating advance of globalization – that it to say, turning the world into a single unit of interconnected activities unhampered by local boundaries – has had a profound political and cultural impact, especially in its currently dominant form of uncontrolled global free market [...]; free-market globalization has brought about a dramatic growth in economic and social inequalities both within states and internationally [...] This surge of inequality, especially in the conditions of extreme economic instability such as those created by the global free market in the 1990s, is at the roots of the major social and political tensions of the new century. (HOBSBAWM, 2008, p.viii-x)

Castells, however, concedes that this system can be prejudicial to peripheral scientific concerns:

Problems which are critical for developing countries, but offer little general, scientific interest, or do not have a promising, solvent market, are neglected in research programs of dominant countries. For instance, an effective malaria vaccine could save the lives of tens of millions of people, particularly children, but there have been few resources dedicated to a sustained effort toward finding it, or to diffuse worldwide the results of promising treatments [...] The business strategies of multinational pharmaceutical companies have repeatedly blocked attempts to produce some of these drugs cheaply, or to find alternative drugs, as they

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<sup>206</sup> todas as revistas devem agora encontrar suas raízes na comunidade internacional em geral e interagir com uma ampla rede de cientistas e instituições. Translated from Lemos' Portuguese, since the original English quote could not be accessed due to a paywall.

control the patents on which most research is based. Therefore, most science is global, but it also reproduces in its internal dynamics the process of exclusion of a significant proportion of people, by not treating their specific problems, or by not treating them in terms which could yield results leading to improvement in their living conditions. (CASTELLS, 1996; 2000, p.125-126)

This statement could be a paraphrase of Oswaldo Forattini's acidic 1997 editorial in the *Revista de Saúde Pública* (presented in section 3.4.4: "...But how can we dress our research in international clothes? [...] To try to give a global character to a theme that by its intrinsic nature is regional would be to force the situation"). José Coura, moreover, explained that it is just a fact of the system that certain topics (and thus certain journals) do not attract attention, regardless of their publisher or production quality; among Tropical Medicine journals for example, he reported that there is an Impact Factor threshold of about 3.0 that even the best US or Elsevier journals do not pass. (Appendix B:question 39, see also CRAWFORD, 1998). However, within this framework, he was quick to point out that his perfunctory two-page overview of Chagas disease in *Nature* has garnered hundreds of citations, apparently more than his original research (Appendix B:question 45); thus it is apparent that another law of visibility is at work as well, and has created an infrastructure of prestige in the literature that has apparently outgrown the constraints of merit<sup>207</sup>. He reinforces this idea with an anecdote about a Nobel laureate who came to Fiocruz and said "Nobody read my works. After I won, everybody cites my works, even if they're no good" (Appendix B: question 37, my translation<sup>208</sup>).

Probably no more pointed evidence of such a glass ceiling could be given in this study than the fact that Carlos Chagas was passed over for the Nobel prize, despite the fact that he had performed a feat unknown in the annals of medical history: in one movement discovering a new infectious disease and its clinical manifestations, pathogen, vector, and epidemiology (CHAGAS; DIAS, 1922, p. 39). After a

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<sup>207</sup> Coura also had a good laugh, at Paulo Coelho's (and the Academia Brasileira de Letras') expense, regarding the same type of phenomenon in literary circles (Appendix B:questions 50-52).

<sup>208</sup> Por exemplo, um ganhador do Prêmio Nobel esteve aqui: "Ninguém lia meus trabalhos. Depois que eu ganhei todo mundo cita os meus trabalhos, mesmo que não sejam bons".

fruitless direct inquiry by Coura (as director of the IOC) to the Nobel Committee regarding the 1921 decision (when no prize was awarded) (Appendix B:question 38), and a series of articles by Coutinho and Dias, proposing theories of Brazilian and Argentinian intrigues against his nominations<sup>209</sup>, Pitella (2009) put forward the convincing argument, based on formerly closed Nobel Committee records for 1901-1951<sup>210</sup>, that:

the nomination criteria of different candidates for the prize demonstrated the important role played by ideas that members of the Nobel Committee had about the type of scientific work that could win the award. In this respect the Nobel Committee members were guided by their own scientific interests, as well as by previous award decisions. The connections between Nobel committee members and the international scientific community, which centered almost exclusively on European and American scientists, also influenced their decisions. (PITELLA, 2009, p. 68, my translation<sup>211</sup>)

This interpretation is well substantiated by (and even understates) the data, listed according to country for the total number of nominators and nominees between 1901 and 1951 for the ‘Physiology or Medicine’ Prize. Of the top 20 countries, the US, France and Germany were granted over 700 nominators each and had over 900 nominees each. Italy was next with 312 nominators and eight other countries had between 100 and 299 nominators. The top prizewinners were the US (14), Germany (9) and the UK (9), with France, Switzerland and

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<sup>209</sup> i.e. (1) Coutinho M. 1999; (2) Coutinho M, Freire Jr O, Dias JCP. 1999; (3) Dias JCP 1999 and (4) Dias JCP, Coura JR, Coutinho M. 2008.

<sup>210</sup> It is also important to point out that these records indicate that both in 1913 and 1921, Chagas received only one nomination by a single Brazilian nominator, whereas the 1913 winner Charles Robert Richet received 9 of the 152 nominations, and in 1921, of 110 nominations, Sir Charles Sherrington received 17 and Emile Roux of the Institut Pasteur received 9. (nobelprize.org 2016)

<sup>211</sup> A avaliação dos critérios para a indicação de um ou outro candidato ao prêmio mostrou o papel importante desempenhado pelas próprias idéias que os membros do Comitê Nobel tinham sobre o tipo de trabalho científico que poderia ser premiado. Nesse sentido os membros do Comitê Nobel eram guiados tanto por seus próprios interesses em ciência quanto por decisões anteriores de premiação. As ligações dos membros do Comitê Nobel com a comunidade científica internacional, centrada quase que exclusivamente em cientistas europeus e norte-americanos, influenciavam também nas suas escolhas.



Denmark winning four each. No other country won more than twice. Twenty-four Brazilians were invited as nominators and four Brazilians were nominated, compared to 23 nominees for Portugal and 49 for Argentina. In its first 50 years, besides the US and Canada (1 win), the only countries not from Western Europe to win this prize were Russia (2), Argentina (1) and Hungary (1). The circularity evident in this, “the supreme reward for scientific achievement” (CRAWFORD, 1998) both clarifies and is clarified by the handling of language policy in the UN’s *Bulletin of the WHO*, discussed in the previous chapter, and goes far to explain how English could come to the central global position it has attained. Simply put, Chagas could not have won the Nobel because Leishmaniosis is not a problem in Europe.<sup>212</sup>

Thus, Castells’ point above about the selectivity of the scientific research spotlight, particularly with regard to pharmaceuticals, is of great relevance here, i.e., that scientific enterprise also serves, or *is itself*, a business, and hence a *political* enterprise, enfranchised and escorted with the same vigor that the East India Company was by the crown. It is this conflict between the idea that science, like the image of the sterilized white laboratory, is somehow neutral and independent of the systems within which it is situated and the idea that it is simply another type of corporation that led Castells in the quote above to describe its coupling with the military as “perverse”. Nevertheless, the competing imperial interests present at the foundation of Colonial Medicine have only become more opaquely positioned in this new global economy, which, like the new wired scientific community, has also largely taken form through conditions created with the digital revolution. Hobsbawm, however, warns that the above-described inequality is endemic to the economic structure of globalization, which would tend to confirm the conflict between center-periphery priorities in the global science situated within it:

On the other hand, since the 1960s, the accelerating advance of globalization – that it to say, turning the world into a single unit of interconnected activities unhampered by local

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<sup>212</sup> Or at least wasn’t until recently; migration and the resulting contamination of blood banks has changed this (WHO 2016). Tropical Medicine was never generally represented among Nobel winners. Only two prizes related to Tropical Medicine were awarded by 1928: Ross in 1902 for work on malaria, and Laveran in 1907 for “the role played by protozoa in causing disease” (nobelprize.org 2016), both of which can be explained in light of their utility to the colonial enterprise, e.g. Ross’ work was instrumental in completing the Suez and Panama canal projects.

boundaries – has had a profound political and cultural impact, especially in its currently dominant form of uncontrolled global free market[...] free-market globalization has brought about a dramatic growth in economic and social inequalities both within states and internationally [...] This surge of inequality, especially in the conditions of extreme economic instability such as those created by the global free market in the 1990s, is at the roots of the major social and political tensions of the new century. (HOBSBAWM, 2008, p. viii-x)

#### 4.5SUMMARY OF FINDINGS

Thus, it is clear that the ground for a unified linguistic field in the scientific community was laid in national, colonial and meta-national, neo-colonial political considerations, just as it is clear that in the world of international governance, the Digital Revolution served as the *gota d'agua*<sup>213</sup> that sealed and galvanized the new regime's language-of-power. The idea, for example, that the Nobel committee and the legitimizing and (very real) steering of 'official' and thus-defined 'viable' science it achieves is somehow divorced from the club of nations that have created and sustained it is illusory. It was demonstrated, based on Bourdieu's model, that the scientific community has all the classic characteristics of a state, from the most international (governing) organizations to the smallest journals, and that since it is inextricably entangled with both state and industrial (e.g. pharmaceutical) concerns, it is tied to their models of power.

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<sup>213</sup> A Portuguese expression similar to "the straw that broke the camel's back" or "the final nail in the coffin" in English.

## 5 SUMMARY AND CONCLUSIONS

### 5.1 SYNTHESIS OF FINDINGS: THREE PARADIGMS

Based on the findings, three global models of organization, which have affected political, economic and linguistic fields, can be proposed since the belle époque, and they are linked to technological considerations. The first is the colonial paradigm: preceded by the ‘Age of Discovery’, especially Spanish and Portuguese conquests concomitant with the Gutenberg revolution, the New Imperialism, epitomized by the Scramble for Africa, led to the emergence of three major powers in Europe – France, Germany and Britain, whose empire was the best established of the three in terms of stability, profitability, size and global diffusion.<sup>214</sup> The inherent competition of these three empires engendered sufficient instability to lead to two World Wars, which resulted in enormous setbacks for Europe, mortally wounding political colonialism for the British and French empires and leading to the partition of Germany. Although a heady internationalism prevailed in Europe during the pre-war period, its immediacy was technologically limited (e.g. steamships and telegraph). The multipolar nature of the politico-economic stage led to a proliferation of *linguae francae*: French was particularly strong in cultural and diplomatic fields, as was German in science.

With Europe in post-war ruins, a second politically-based period was built upon Cold War polarization. As the spoils of war, the Allied structure was transferred into the new “extraterritorial” United Nations (in New York), where English was, well, ramrodded into political precedence, as can be clearly seen in the diachronic language policy of the *Bulletin of the World Health Organization*. English was depicted as part and parcel of participation on the side of “the democratic good guys” (i.e. NATO) against the Communist bloc, with the ideological stakes made extremely high since the chips were atomic weapons. During this period, which featured the emergence of computerized technology and global satellite networks, developments such as the impact factor led to a tightening of scientific indexing systems around

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<sup>214</sup> A series of wars with France and the Netherlands had given Britain the advantage in North America and India by the 18th century. France’s competitiveness had been previously crippled by the Napoleonic bubble and bust, though which Britain gained unrivalled naval (and thus trading) power in the 19th century. It is interesting that the so-called “Pax Britannica” (1815-1914) coincides with post Napoleon era through the end of New Imperialism.

the best funded, most prolific (i.e. US) research.<sup>215</sup> This tightening was epitomized clearly by the fracturing and subsequent English-only policy of the *Annales de l'Institut Pasteur*, which had heralded microbiology and the foundation of modern medicine.

Although the 1989 reunification of Germany brought the Cold War to a political close, the most relevant factor in forming the third period was the 1995 worldwide launch of the Internet (like the UN, launched from Switzerland and the US). This globalized, post-Gutenberg digital paradigm was met with an organic international self-adhesion unimaginable during the Cold War. The global, “centerless” information-based economy mirrored the structure of the Internet, apparently requiring a “territory-free” single language on the order of English-based universal programming languages. For this purpose, it went without saying, English was the only (remaining) candidate, completing the linguistic movement, via technology, that Cold War could not through political manipulation. And, again, it is not by chance that the majority of web content is still in this language.

Although the Information age was brought about by a partnership between academia and the military, this development was also in the interests of multinational corporations, who, equally affected by the paradigm shift, needed an overarching language to communicate with a global clientele and affiliates, disseminating complex industrial specifications in a new wave of industrial colonialism. Like their forbearers, such as the East India Company, such multinationals still enjoy government cooperation. A particularly outstanding example of this is the cadre of international publishers in control of the scientific literature, whose immense profits come on the backs of government-sponsored research and the labor of individual scientists. These have certainly played an important role in the consolidation of English as the lingua franca of science, if only because it suits their interests to serve their principal clients – Anglophone universities. Nevertheless, this is only one agenda in the current polyphony; the open access movement, promoted by such metapublishers as SciELO, could be seen as a return to the roots of the scientific enterprise (and perhaps even to some degree of multilingualism, according to MENEGHINI; PACKER, 2007), i.e. the free exchange of information among an invisible college,

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<sup>215</sup> The 53-member (British) Commonwealth of Nations (declared 1949), which encompasses approximately 20% of the world's land and 1/3 of its population) (Commonwealth 2016a) united particularly by language (Commonwealth 2016b) is another reason for the sustained political viability of English in this period. It is also one reason for the difficulty in pinning down a definition of “the West”.

exemplified so clearly in the first issue of the *Philosophical Transactions*, which, moreover, was also the chief motivation of the academic developers of the Internet.

## 5.2 SCIENTIFIC LITERATURE IN THESE THREE LANGUAGE PARADIGMS

Under such a rubric, explaining the changing language policy observed in *Memórias* and its cohort journals is much less difficult. A pioneering, peripheral scientific institution at the heart of the tropics, not the colonial project of a foreign power, but comfortably neutral and pursuing European medicine for its own benefit, the Instituto Oswaldo Cruz, after proving its worth, was received as an equal, if for a time. Vigorously multilingual until the First World War, when Brazil was drawn into the camp of the Allies, translation came to a halt, returning, however, soon after the end of hostilities. Although one might imagine that Oswaldo Cruz could clearly articulate why *Memórias* was to be published in foreign language(s), such reasoning seems not to have been generally passed down the line, since in 15 or so years after his death, foreign language was in decline, despite Chagas' frequent international business. In this the effects of the Vargas regime, during which the IOC lost hard-won autonomy and prestige (and funding) with the government, must be taken into consideration. French, which according to Coura every Brazilian intellectual knew, was quickly falling out of currency.

As the imperial multilingual era came to a close with the Second World War, during which, once again, foreign language disappeared from *Memórias*, translation afterwards also soon drew to a close in the journal (1956). A modicum of foreign monolingualism was maintained, with a certain faint emphasis on English. Foreign language was based principally on disappearing IOC old-timers, immigrants such as Rudolf Barth and special cases such as Bertha Lutz, Adolpho's daughter, who contributed many English-only articles. However, German survived only in Barth's pen. Foreign contribution was at a trickle, which only worsened with the onset of the Regime Militar in 1964, after which point an environment of McCarthyism, the dismantling of patrimony such as the entomological collection and further reduced funding led to a state of decadence which threatened the very existence of the Institute. Meanwhile Chagas Jr., who had been born into an international scientific outlook and received much exposure in WHO programs and the like, was already adamantly calling for a structural shift to English

by the late 1970s.

With the new IOC mandate and revitalizing program of Coura in 1980, internationalization was again seen as necessary and English was an important component of it, since getting indexed in the major English journals was key to the relevance and continued survival of the journal. An aborted policy of mandatory English abstracts, however, set the stage for complete English hegemony, which was achieved almost immediately with the advent of digital publishing. Currently, the Brazilian Tropical Medicine milieu is for the most part English only, although there is still a certain stratum of journals at 50% or less, which may have parallels in many parts of the world and in several disciplines.

Technology and language involve both access and exclusion, while ranking creates or, rather, reveals and reinforces, a center and a periphery. On the other hand, collaboration, which is based on technological and linguistic preconditions, has the potential to weaken such exclusion and reshuffle hierarchy. SciELO has become a major revitalizing and organizing project for Brazilian (and Latin American) science, although it has, without any direct language policy, also served to further the spread of monolingual English. Perhaps its bilingual, local-international goals, which only serve to underscore the pertinence and utility of *Memórias*' original format, will be achievable and translation, rather than unchallenged foreign monolingualism, will again take its place within the scientific literature.

### 5.3 FUTURE RESEARCH

The first project related to this study would be to explore the delicate balance of cohabiting, competing identities within the scientific community, e.g. nationalistic and patriotic vs. international and humanitarian, which were brought up rather obliquely here, and warrant careful sociological/anthropological investigation. One interesting means of exploring these themes and the framework of their embodiment would be by discourse analysis of the major obituary/editorials in *Memórias*, which could be compared to similar pieces in other journals worldwide. Thus a clearer idea would be provided of the nature of the scientific community, which is relevant to the study of its organizational structure and its language.

A second project would be to go on filling in the worldwide knowledge gap about the rise of English as the lingua franca of science, collecting reliable diachronic data from different regions, such as all of South American biomedicine, for example, and comparing these results

with other countries/regions, either most or least affected by colonialism. Alternatively, more complete studies from within France and Germany would be useful, since they might be considered the most resistant, largely monolingual colonial rivals. Another possibility would be to collect such journal data according to language, e.g. the entire Lusophone world. A final model for this type of study could involve numerous disciplines within a single country, such as Brazil.

In light of the bilingual model proposed by Meneghini and Packer and the multi-abstract model developed in the *Bulletin of the World Health Organization*, a third project would be to observe how the challenge of multilingual access is being dealt with by journals in many areas, even within Translation Studies, determining whether there is currently any movement toward new solutions.

#### 5.4 POSTSCRIPT

Two recent current developments should not go without comment. First, the news of the UK's plebiscite to opt out of the European Union, regardless of how things may work out<sup>216</sup>, immediately raises the question of whether English would still remain the working language of the body. If, for example, the main working language were to shift to French or German, this would not be without effect on the scientific community, if the observations in this study are at all valid. Thus, although English as a lingua franca has been taken as an unshakable reality, its hold may be much more precarious than has been imagined and dramatic linguistic changes may lie ahead in the near future, when carefully considered language and translation policies will be necessary.

Secondly, the news coverage surrounding the Zika virus is too uncannily similar to the infamous global status of Rio as a health hazard at turn of the 20th century – the matrix from which the IOC began – to let pass without comment. The situation is poignant since the coverage gives the appearance that nothing much has transpired to improve Brazil over the last century, but it is also gratifying, as well as a relief, to see Brazilian coverage highlighting FIOCRUZ' pivotal role in current research and the race to create a viable vaccine. What the world will

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<sup>216</sup> Prior to the vote, it had been suggested that the UK should form a Commonwealth free trade zone, which due to the body's 53 nations covering 21% of the world's land mass and one-third of its population, would dwarf both the EU and the US.

experience in a few short weeks at the Rio Olympics, whether good or bad, will certainly serve as a landmark for the IOC's history, since without this institutewho knows what might have become of the city. This and other health developments, such as recent contamination of European blood banks by immigrants infected with Chagas disease, also show how precarious the world health situation is. The scientific literature can no longer afford to ignore and segregate research from the periphery or hide that which has been accumulated at the center behind paywalls, something that my personal story in the preface also demonstrates.



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## APPENDIX A. MEMÓRIAS LANGUAGE DATA 1909-1912

continued...

YEAR	TOT	TRANSLATIONS [%]				EN ABST.			MONOLINGUAL					
		TOTAL	EN	FR	GR	PT	SP	FR	TOT	PT	EN	FR	GR	SP
1909	16	16 [100]	2	3	11				0	0	0	0	0	0
1910	18	18 [100]	2	1	15				0	0	0	0	0	0
1911	18	18 [100]	0	3	15				0	0	0	0	0	0
1912	12	12 [100]	0	0	12				0	0	0	0	0	0
1913	18	18 [100]	0	0	18				0	0	0	0	0	0
1914	28	28 [100]	7	3	18				0	0	0	0	0	0
1915	8	1 [12.5]	0	0	1				7	7	0	0	0	0
1916	12	0	0	0	0				12	12	0	0	0	0
1917	6	0	0	0	0				6	6	0	0	0	0
1918	11	11 [100]	8	3	0				1	0	1	0	0	0
1919	6	6 [100]	3	3	0				0	0	0	0	0	0
1920	6	6 [100]	2	3	1				0	0	0	0	0	0

continuation...

1921	2	2 [100]	0	1	1				0	0	0	0	0	0
1922	25	22 [88]	14	4	4				3	3	0	0	0	0
1923	4	4 [100]	4	0	0				0	0	0	0	0	0
1924	8	7 [87.5]	4	2	1				1	1	0	0	0	0
1925	6	4 [66.6]	4	0	0				2	2	0	0	0	0
1926	6	4 [66.6]	4	0	0				2	1	0	1	0	0
1927	11	8 [72.7]	5	2	1				3	3	0	0	0	0
1928	28	16 [53.3]	11	3	2				12	12	0	0	0	0
1929	44	21 [46.6]	16	2	3				23	14	6	1	1	1
1930	37	11 [29.7]	7	2	2				26	26	0	0	0	0
1931	14	5 [35.7]	3	0	2				9	9	0	0	0	0
1932	13	4 [28.5]	4	0	0				9	9	0	0	0	0
1933	19	7 [36.8]	2	2	3				12	12	0	0	0	0
1934	35	12 [34.2]	8	2	2				23	22	0	0	1	0
1935	20	4 [20]	3	0	1				16	16	0	0	0	0
1936	27	4 [14.8]	4	0	0				23	23	0	0	0	0
1937	44	0	0	0	0				44	44	0	0	0	0



continuation...

1938	42	1 [2.3]	1	0	0				41	41	0	0	0	0
1939	26	6 [23]	5	1	0				20	20	0	0	0	0
1940	47	1 [2]	1	0	0				46	44	1	1	0	0
1941	29	0	0	0	0				29	29	0	0	0	0
1942	27	0	0	0	0				27	27	0	0	0	0
1943	68	3 [4.4]	3	0	0				65	65	0	0	0	0
1944	54	0	0	0	0				54	54	0	0	0	0
1945	58	0	0	0	0				58	58	0	0	0	0
1946	30	1 [3.3]	1	0	0				29	29	0	0	0	0
1947	53	0	0	0	0				53	53	0	0	0	0
1948	37	0	0	0	0				37	37	0	0	0	0
1949	25	20 [80]	19	1	0				5	5	0	0	0	0
1950	25	12 [48]	10	0	2				13	13	0	0	0	0
1951	17	3 [17.6]	2	0	1				14	14	0	0	0	0
1952	26	12 [46.1]	9	0	3				14	14	0	0	0	0
1953	23	7 [30.4]	1	0	6				16	16	0	0	0	0
1954	31	3 [9.6]	1	0	2				28	28	0	0	0	0

continuation...

1955	49	5 [10.2]	5	0	0				44	31	11	0	2	0
1956	28	3 [10.7]	0	0	3				25	24	1	0	0	0
1957	15	0	0	0	0				15	13	0	2	0	0
1958	27	0	0	0	0				27	27	0	0	0	0
1959	17	0	0	0	0				17	14	1	0	0	2
1960	15	0	0	0	0				15	12	1	0	2	0
1961	22	0	0	0	0				22	17	4	0	1	0
1962	31	0	0	0	0				31	28	2	0	1	0
1963	29	0	0	0	0				29	23	2	0	4	0
1964	15	0	0	0	0				15	13	1	0	1	0
1965	20	0	0	0	0				20	20	0	0	0	0
1966	9	0	0	0	0				9	7	2	0	0	0
1967	16	0	0	0	0				16	16	0	0	0	0
1968	14	0	0	0	0				14	12	0	0	2	0
1969	1	0	0	0	0				1	1	0	0	0	0
1970	6	0	0	0	0				6	4	1	1	0	0
1971	29	0	0	0	0				29	22	4	0	3	0

continuation...

1972	36	0	0	0	0				36	33	3	0	0	0
1973	31	0	0	0	0				31	26	5	0	0	0
1974	31	0	0	0	0				31	29	2	0	0	0
1975	15	0	0	0	0				15	15	0	0	0	0
1976	27	0	0	0	0				27	26	1	0	0	0
1977														
1978														
1979														
1980	32	0	0	0	0				32	22	10	0	0	0
1981	43	0	0	0	0	13			30	15	15	0	0	0
1982	43	0	0	0	0	21			22	5	16	0	0	1
1983	55	0	0	0	0	16			39	11	28	0	0	0
1984	99	0	0	0	0	27			72	15	56	0	0	1
1985	70	0	0	0	0	32	2		36	10	26	0	0	0
1986	124	0	0	0	0	26	1		97	20	76	0	0	1
1987	222	0	0	0	0	19	1	2	200	7	188	4	0	1
1988	175	0	0	0	0	14	6	0	155	14	137	1	0	3

continuation...

1989	224	0	0	0	0	75	8	1	140	13	125	0	0	2
1990	94	0	0	0	0	1	0	0	93	0	93	0	0	0
1991	168	0	0	0	0	0	0	0	168	1	167	0	0	0
1992	310	0	0	0	0	17	0	0	293	2	291	0	0	0
1993	103	0	0	0	0	1	0	0	102	0	102	0	0	0
1994	142	0	0	0	0	0	0	0	142	2	140	0	0	0
1995	144	0	0	0	0	0	0	0	144	0	144	0	0	0
1996	140	0	0	0	0	0	0	0	140	0	140	0	0	0
1997	153	0	0	0	0	0	0	0	153	1	152	0	0	0
1998	157	0	0	0	0	0	0	0	157	1	156	0	0	0
1999	158	0	0	0	0	0	0	0	158	0	158	0	0	0
2000	144	0	0	0	0	0	0	0	144	0	144	0	0	0
2001	194	0	0	0	0	0	0	0	194	0	194	0	0	0
2002	210	0	0	0	0	0	0	0	210	0	210	0	0	0
2003	163	0	0	0	0	0	0	0	163	0	163	0	0	0
2004	143	0	0	0	0	0	0	0	143	0	143	0	0	0
2005	137	0	0	0	0	0	0	0	137	0	137	0	0	0

conclusion...

2006	143	0	0	0	0	0	0	0	143	0	143	0	0	0
2007	158	0	0	0	0	0	0	0	158	0	158	0	0	0
2008	145	0	0	0	0	0	0	0	145	0	145	0	0	0
2009	192	0	0	0	0	0	0	0	192	0	192	0	0	0
2010	176	0	0	0	0	0	0	0	176	0	176	0	0	0
2011	174	0	0	0	0	0	0	0	174	0	174	0	0	0
2012	168	0	0	0	0	0	0	0	168	0	168	0	0	0
YEAR	TOT	TOTAL	EN	FR	GR	PT	SP	FR	TOT	PT	EN	FR	GR	SP

APPENDIX B - TRANSCRIPT OF INTERVIEW WITH DR. JOSÉ RODRIGUES COURA ON 8 JULY 2015

1) WFH: Entendo que o Instituto Oswaldo Cruz era distinto daquelas criadas em outros países no começo do século 20.

COURA: Destes institutos todos que foram criados na década de 1900, este é o único instituto que foi criado para o Brasil, porque todos os outros foram criados para as colônias. Você tem Hamburgo, você tem dois ou três institutos na Inglaterra, você tem na Holanda, mas tudo era para as colônias. E este foi criado para cá. Na realidade esse instituto foi criado para o controle da febre amarela e da febre bubônica, que eram endêmicas aqui no Rio de Janeiro. E o primeiro caso de peste bubônica que ocorreu aqui no Brasil em 1896 foi em Santos. Veio em um navio e tal. Aí o governo ficou alarmado, chamou Oswaldo Cruz, ele foi lá para São Paulo, e aí resolveram fundar um instituto para produzir vacina contra a peste bubônica. Oswaldo Cruz já tinha trabalhado no Instituto Pasteur em Paris e fez a vacina e aparentemente curou. Eu até não sei se foi isso ou se foi espontâneo, porque se desratizou a cidade e se fez um controle, aparentemente foram essas as medidas. E aí controlou a febre amarela e outras epidemias e tal, e hoje o instituto se avolumou e virou uma fundação. Essa fundação tem, como eu lhe disse, umas 15, 20 unidades por aí hoje no Brasil. Tem no Rio de Janeiro, Belo Horizonte, na Bahia, em Recife, no Ceará começou agora, Mato Grosso do Sul, Amazonas, em Rondônia, umas 10 unidades aí espalhadas pelo país. Eu era da universidade e vim para cá. Era professor de doenças infecciosas e vim para cá para ser vice-presidente de pesquisa e diretor do instituto, e fiquei por aqui.

2) WFH: Quando eu cheguei fiquei pensando sobre o fato de que iam fechar. Lembrei do seu artigo que diz que, quando chegou aqui em 70, a FIOCRUZ era uma ficção, e o instituto estava em péssimas condições.

COURA: É, porque ele teve uma fase áurea que foi até a década de 30, começo de 40. Depois entrou uma parte política aí, foi uma decadência muito grande.

3) WFH: Por causa de Vargas?

COURA: É, no governo militar, num período de ditadura longa no Brasil de 64 a 85. Mas essa ditadura fez algumas coisas boas. Uma delas foi criar a Fundação Oswaldo Cruz. Criou a fundação e juntou uma série de instituições que tinham tudo para não dar certo, mas deram certo. E aí ainda no governo militar, mas já numa fase de abertura como eles chamavam, eu fui convidado para sugerir uma organização, porque

era desorganizado. E aí eu pedi que me arranjasse um economista e um experto em pessoal, e aí fizemos um projeto para isso, e vim apresentar ao presidente da FIOCRUZ. Eu disse: “O senhor tem duas opções. Ou, primeiro, melhora os salários aqui, para fazer um projeto, ou fecha isso e vende as terras”. Porque eu era um maluco. (risos) Um pesquisador ganhava cem dólares por mês, ele vinha aqui, almoçava de graça e ia para o laboratório lá fora ganhar dinheiro. Então me convidaram para ser presidente da FIOCRUZ, aí eu disse não, não tenho nem experiência administrativa, aí colocaram um economista aqui para dirigir. E ele melhorou muitos os salários, mas o contexto científico não progrediu porque ele não tinha experiência. Em 79 eu fui convidado para ser vice-presidente de pesquisa, e o presidente era um outro administrador também. Mas foi bom porque ele me deu toda a liberdade para pesquisa. Nomearam um ministro da saúde, e o ministro me disse: “Professor, o que a gente faz para Manguinhos voltar a ser o que era?”. Eu disse: “É muito fácil ministro”. Eu tinha 40 anos naquela época, achava as coisas fáceis. “Vamos pegar 10 boas cabeças, contratar, e abrir os cursos de pós-graduação”.

4) WFH: Os cursos tinham fechado há muito tempo?

COURA: Os cursos tinham fechado acho que em 69 porque o diretor aqui, Rocha Lagoa, disse que tinha muitos comunistas ainda. (risos) Então o ministro disse: “Arranje as boas cabeças que eu contrato”. E eu consegui 17 indivíduos, uns que estavam se aposentando, e abri os cursos de pós-graduação.

5) WFH: Essa relação entre o governo e o instituto é longa, complicada, às vezes boa e às vezes ruim?

COURA: O Oswaldo Cruz tinha muito prestígio científico, político. Depois que o Oswaldo morreu, em 1917, entrou o Chagas, que também era um homem de muito prestígio, descobriu uma doença muito conhecida, eu estou escrevendo alguma coisa sobre isso. E foi bem. Depois entrou um outro antigo também que foi bem razoável. Depois entrou Henrique Aragão, que foi bem. Depois do Aragão a coisa começou a decair, porque se fechou muito. Aragão comemorou o cinquentenário do instituto. Para você ter uma ideia eu cheguei aqui em 79, no meu primeiro mandato – eu tive dois mandatos aqui, de 79 a 85 – e o governo militar não intervinha muito, teve a vantagem de criar a fundação, e a gente tinha muita liberdade de contratar pessoas. Em 85 eu saí, passei um período no NIH porque eu tinha me desatualizado, fiquei lá uns oito meses, e voltei. E como eu tinha gostado daqui e tinha um cargo de conciliador titular fiquei por aí. Depois de 97 me convidaram para dirigir o instituto de novo, e aí a coisa já estava bem estabelecida e

tal. Foi bom porque eu comemorei o centenário do instituto e fiquei por aqui.

6) WFH: O senhor foi diretor por quantos anos da segunda vez?

COURA: Fiquei quatro anos, até 2001. Depois eles me mantiveram aqui. Agora estou aposentado, mas aqui tem um sistema que se o pesquisador se aposenta por idade e está produzindo eles dão a ele cargos como chefe de laboratório, coisas assim. Então eu sou chefe do laboratório de doenças parasitárias. E a gente está indo, tem altos e baixos.

7) WFH: Isso vai ser parte da minha história, mas deixe-me explicar um pouco sobre meu estudo. Quando descobri no SciELO o primeiro tomo das Memórias com seu formato em duas colunas<sup>217</sup>, cada artigo em duas línguas, fiquei muito impressionado.

COURA: Teve duas épocas. O português é uma língua pouco falada no exterior, só em Portugal e em alguns países africanos. Então, para dar vulto a ele, as Memórias inicialmente eram escritas em português, francês (que predominava), alemão, ou ocasionalmente em inglês. Tanto que Carlos Chagas publicou em português e francês, português e alemão, e português e inglês. Ele publicou vários artigos assim. E agora ela passou a ser em inglês.

8) WFH: Quando o senhor se tornou editor-chefe<sup>218</sup>, a publicação da revista havia parado por três anos. O senhor poderia me explicar o que aconteceu?

COURA: Foi o seguinte: [a revista] estava em decadência, de muito má qualidade. Eu me lembro quando cheguei aqui que o presidente tinha brigado com o vice-presidente, porque ele queria imprimir a revista de qualquer maneira, sem revisão nem nada. Eu cheguei em 79 e tinha um monte de revista para distribuir, mas quando peguei, disse para jogar fora, estava tudo errado. Já tinha anos de interrupção. Aí eu criei um conselho científico, e um dos conselheiros disse: “Nem pense em colocar em dia anos de atraso. Se ela está no número 78, você começa no 79. Esqueça o atraso”. E assim eu fiz. Então começamos a ter quatro números por ano, passamos a seis, e há uma meta de a revista chegar a ser mensal, porque tem muito trabalho sendo submetido.

9) WFH: O senhor tem noção de quantos artigos são submetidos para a revista?

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<sup>217</sup> Memórias do Instituto Oswaldo Cruz 1(2) 1909. [todos os artigos das Memórias citados podem ser acessados através do seguinte portal: <http://memorias.ioc.fiocruz.br/>]

<sup>218</sup> Para uma breve, porém rica, contextualização acesse: <http://www.ioc.fiocruz.br/110anos/personalidades/coura/coura.html>



COURA: Varia muito, mas acho que são uns 30, 40 por número. E também estabelecemos um review, quase todos da revista têm um. Review dá muita citação e, portanto, o índice cresce muito.

10) WFH: No ano passado passei muitas horas na biblioteca do Instituto de Medicina Tropical da Antuérpia. E não encontrei nenhuma revista com tantas línguas, nem daquela época e nem de hoje em dia. Isso cativou a minha imaginação.

COURA: Isso hoje na verdade é praticamente impossível: a língua hoje é inglês. Hoje é muito caro produzir uma revista. Então estamos pensando em imprimir um pequeno número para as bibliotecas e colocar online, aberta. Isto baixa muito o custo das revistas, porque além de ter uma equipe que trabalha, tem a impressão, essa coisa toda. Hoje a maioria das revistas está trabalhando assim. O correio é caríssimo, e quando você entra no site já está lá o artigo. E geralmente sai mais rápido. Um a dois meses antes de imprimir o artigo já está disponível e você já pode até citar.

11) WFH: Mas o senhor poderia me dizer a quem foram dirigidas essas línguas estrangeiras? Os pesquisadores daquele momento tinham parceiros? Tinham uma audiência?

COURA: Havia uma ligação muito grande com Hamburgo. Hamburgo e o Instituto Pasteur eram as grandes ligações do instituto. O Instituto Pasteur porque o Oswaldo Cruz estudou lá. E Hamburgo porque tinha pessoas aqui que trabalharam em Hamburgo. Rocha Lima<sup>219</sup> foi diretor do Instituto de Hamburgo. Aí o instituto ganhou a medalha da exposição em Berlim [em 1907]. Quando eu fiz o centenário daqui do instituto eu convidei os diretores de todos estes institutos. Todos vieram, inclusive [o diretor do Instituto] Max Planck, que é um instituto forte. Ele não quis nem passagem, veio por conta própria porque queria conhecer.

12) WFH: Na história do Instituto que Aragão escreveu em 1950, ele disse que Oswaldo se incumbiu com a seleção de tradutores para os artigos. O senhor sabe de alguma coisa com respeito às práticas de tradução naquela época?

COURA: Não, muito pouco.

13) WFH: Eu li que Adolpho Lutz ficava responsável pelas traduções em alemão, e que era muito trabalhoso para ele.

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<sup>219</sup> Para mais informações, veja: CÂNDIDO DA SILVA, A.F. A trajetória de Henrique da Rocha Lima e as relações teuto-brasileiras (1901-1956). **História, Ciências, Saúde - Manguinhos**. Rio de Janeiro, n. 2, vol.17, abr./jun. 2010. Disponível em: <http://dx.doi.org/10.1590/S0104-59702010000200013>. Acesso: 28 jul. 2015.

COURA: É, ele escrevia e falava alemão [...] Nas quartas-feiras o Oswaldo Cruz se reunia com eles e olhavam revistas, e ele designava cada um para estudar os artigos e expor nas quartas-feiras à noite.

14) WFH: Essas mesas de quarta-feira duraram até quando?

COURA: Até a criação do curso de aplicação. O curso de aplicação foi criado em 1907, mas começou a funcionar regularmente em 1909. Era um curso de dois anos. Era um tipo de pós-graduação, mas se chamava curso de aplicação.

15) WFH: Será que essas mesas de quarta-feira eram parte de uma estratégia com relação à linguagem? Eu obtive um livreto em alemão que creio ter sido publicado para a exposição em Dresden, no qual havia uma lista de todas as assinaturas de revistas, mais de 600 revistas em línguas diferentes. Então pensei: será que esse formato de duas colunas na revista e também essas reuniões das mesas de quarta-feira eram uma maneira de Oswaldo estimular o multilinguismo nos integrantes do instituto?

COURA: O que ele queria mesmo era divulgar a ciência. O único que ele não escalava para as mesas de quarta-feira era o Lutz. Porém, em termos gerais eles estimulavam a questão da língua. O francês quase todo brasileiro intelectual falava.

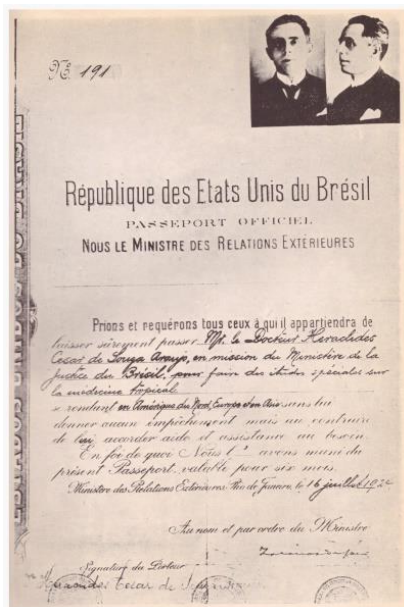


Figure 1. Souza-Araujo's French-language Brazilian passport, 1924. (Souza-Araujo 1929:8)

16) WFH: Eu inclusive vi no livro de Souza Araújo sobre a lepra, de 1929<sup>220</sup>, uma foto do passaporte brasileiro dele, emitido todo em francês.

COURA: A França teve um período de muita influência aqui. A Alemanha teve também, mas depois da Primeira Guerra Mundial perdeu um pouco, e aí entrou mais o inglês, o americano. Mas os pesquisadores falavam francês fluentemente; muitos falavam alemão e a maioria falava inglês.

17) WFH: Minha próxima pergunta seria: ser multilíngue era realmente parte da definição de um cientista naquela época? E hoje em dia, é diferente?

COURA: Era. Hoje em dia é completamente diferente. O cientista hoje sabe inglês. Se não souber inglês ele não vive. A língua mundial hoje é o inglês. O chinês escreve em inglês, porque senão ninguém vai ler. O japonês escreve em inglês. E é uma língua mais fácil. Talvez para falar não seja muito fácil por causa da pronúncia, mas para escrever é uma língua mais fácil, porque não tem acento. Português já tem acento, e já fizeram uma reforma. Eu hoje, por exemplo, não sei escrever mais português muito bem. Eu escrevo, mas dou para o revisor para ver os acentos, porque mudou. Gastaria muito tempo para me atualizar, a secretária aqui sabe mais português do que eu.

18) WFH: Eu gostaria que o senhor discorresse um pouco sobre as línguas que apareceram nas Memórias: como o senhor disse, havia mais ou menos um destino para todas as línguas. Se puder falar um pouco sobre o que aconteceu com o espanhol, o francês...

COURA: A tendência era para ser mais lida e exportável. Geralmente a língua era usada para destinar a revista a um país ou um grupo de pessoas com interesse.

19) WFH: Por exemplo, o texto de Chagas (1909)<sup>221</sup> foi escrito em alemão e português. Por que alemão e não francês, ou não inglês, ou não em todos os idiomas?

COURA: No caso de o Chagas ter publicado em alemão, ele não escrevia em alemão, mas o filho dele, o Evandro, conhecia bem o

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<sup>220</sup>SOUZA-ARAUJO, Heraclides de. **Leprosy: Survey Made in Fourty [sic] Countries (1924-1927)**. Rio de Janeiro: Instituto Oswaldo Cruz, 1929.

<sup>221</sup> CHAGAS, Carlos 1909. Nova tripanozomíase humana/Ueber eine neue Trypanosomiasis des Menschen. **Memórias do Instituto Oswaldo Cruz**. Rio de Janeiro, n. 1, v.2, p. 159-228, 1909. [ver ilustração na pergunta inicial desta entrevista]

alemão, escrevia bem. Ele foi educado na Alemanha. Então essa é uma suspeita minha, porque eu não conheci o Chagas. Mas suspeito que ele tenha escrito em português e o Evandro tenha passado para o alemão<sup>222</sup>. O Chagas falava francês, não sei se escrevia, mas devia escrever. O Evandro falava francês, inglês, alemão, era poliglota. Mas aí, com o passar do tempo, por questão de facilidade... você encontra ainda hoje muita gente aqui que fala francês e inglês. Alemão são pouquíssimos. E os que falam, falam alemão antigo. Tenho um ex-aluno que é neto de alemães. Um dia eu pedi a um alemão que trabalhava aqui para chamar esse aluno e falar com ele. O alemão riu quando o aluno falou, e disse: “ele fala igual ao meu avô”. Porque as línguas evoluem, não é? Só o latim é que fica meio amarrado. Mas é isso, não posso lhe responder com muita convicção, mas acho que é por interesse de quem está trabalhando mais nessa área. Se é o grupo da Alemanha, ou os franceses, é mais pelo país.

20) WFH: *Durante a Primeira Guerra as línguas estrangeiras desapareceram da revista por alguns anos. Então seria possível dizer que o uso das línguas estrangeiras certamente era voltado para a Europa, não é? Entrou-se em guerra e as línguas estrangeiras pararam. Ou não havia mais interesse?*

COURA: Eles pararam, porque com a guerra o Brasil sempre ficou do lado dos aliados, dos ingleses, dos franceses, e não quis o nazismo. Se bem que o presidente Getúlio Vargas era simpático ao nazismo. Ele, Perón na Argentina, eles foram forçados. A Argentina nunca declarou guerra, foi o Perón. Ele era fascista. O Getúlio era simpatizante, tanto que quando declarou guerra ele não disse “eu declaro guerra” ou “o presidente declara guerra”. Ele disse: “o povo brasileiro declara”. (risos) Ele foi a um clube de futebol, onde tinha muita gente, para declarar guerra à Alemanha, mas ele não declarou, o povo brasileiro que declarou. O povo é que estava declarando.

21) WFH: *Ele não tinha afiliação com os Estados Unidos?*

COURA: Não, e ele também não tinha uma afiliação com os nazistas. O Getúlio foi muito sábio porque quando os Estados Unidos entraram na guerra eles precisavam de uma base aqui no Brasil, por causa da África. Principalmente no nordeste.

21) WFH: *Em 1909, Oswaldo Cruz inclusive foi a Washington para conversar com o presidente Teddy Roosevelt e assegurar que as tropas poderiam usar os portos...*

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<sup>222</sup> That Evandro translated Chagas 1909, however, would appear to have been impossible, given that Evandro was four years old at the time this article was published.

COURA: É, e o Getúlio não estava muito propenso a deixar. Mas os americanos disseram: “se você não deixar, nós ocupamos”, porque eles não tinham saída. Do nordeste para a África são seis horas de voo, é pertinho, e os aviões tinham condição de ir. E Getúlio viu que os Estados Unidos eram uma potência militar, e aí ele negociou, era um bom negociador. Ele disse, muito bem, vou ceder a base do nordeste, que era Recife e Natal principalmente, as capitais que ficavam mais perto da África, mas vocês montam uma fábrica de aço para nós em Volta Redonda. E aí eles montaram a fábrica, que até hoje é grande. Depois veio a Vale do Rio Doce, e hoje o Brasil tem produção de aço porque tem muita matéria-prima, muito ferro, mas precisava da tecnologia que não tinha na época, então ele fez a troca da base por tecnologia.

22) WFH: *Eu li<sup>223</sup> que uma tradutora que traduziu Tom Sawyer, de Mark Twain, foi presa porque na época de Vargas o livro foi supostamente considerado político. Houve ameaças contra o instituto por ter muito material em língua estrangeira?*

COURA: Não houve, não. Getúlio não frequentou muito o instituto. Mas depois veio Einstein que já estava nos Estados Unidos e visitou o instituto [1925] e é isso. A política é um negócio complexo.

23) WFH: *Claro, mas fico sem explicação para o que aconteceu: na época de Vargas não havia publicações em língua estrangeira. Então isso aconteceu porque o Instituto não tinha mais elo com os outros institutos, ou foi por causa da guerra que abandonaram as publicações em outras línguas?*

COURA: Eu acho que isso foi mais pelo inglês, que passou a ter domínio.

24) WFH: *Certo, mas nessa época também não havia textos em inglês...*

COURA: Foi a questão de um desligamento político. Eu acredito que seja isso.

25) WFH: *Eu compilei o número de artigos por língua e por autor. Foram publicados muitos artigos em língua estrangeira, mas somente 19 autores foram responsáveis por mais de 70% destes artigos até 1956 [quando pararam de publicar artigos com suas respectivas traduções nas Memórias].<sup>224</sup>*

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<sup>223</sup> MILTON, John. **O Clube do Livro e a Tradução**. Bauru: EDUSC, 2002.

<sup>224</sup> Veja: HANES, William F. A Century of Foreign Language in Memórias do Instituto Oswaldo Cruz: Language Policy, Nationalism and Colonial Science. In: KHALIFA, Abdel (Ed.). **Translators Have Their Say?** Translation and the Power of Agency. Zurich & Berlin: LIT Verlag, 2014, p. 84-110.

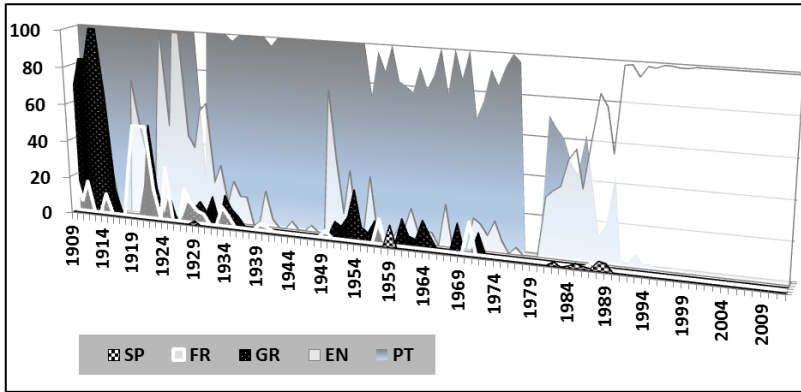


Figure 2. Language trajectories in *Memórias do Instituto Oswaldo Cruz* 1910-2012.

COURA: Qual foi o ano em que se deixou de publicar em alemão?

26) WFH: *[O último artigo em alemão apareceu em 1971]. Os artigos apareceram em duas colunas no início, e depois passou a ser dois artigos separados no mesmo número. Isso durou até 1956. Depois de 1957 não houve mais traduções. Foi a época monolíngue.*

COURA: Do português passou para o inglês?

27) WFH: *Imediatamente, não. Como o senhor sabe, a revista deixou de ser produzida [entre 1977 e 79], e o senhor assumiu em 1980. Então, olhe só o inglês e o português.*

COURA: Então nós entramos aqui e depois ficou totalmente em inglês.

28) WFH: *Depois de 1998 não teve nada em outra língua além de inglês. E, por coincidência, foi naquela época que a revista passou a ser publicada online.*

COURA: Um iraniano [Hooman Momen] foi editor das *Memórias*. Ele foi educado na Inglaterra, e colocou a revista em língua inglesa. Em seguida, quando assumi, continuei. Ele me convidou para o cargo porque ia para a organização Mundial de Saúde estava preocupado que a qualidade das *Memórias* poderia cair, então me chamou para o meu segundo mandato. Eu fiquei seis anos, ao mesmo tempo sendo o diretor e editor das *Memórias* porque as *Memórias* estavam muito em baixa, e eu como diretor tinha dinheiro, tinha as condições, e já tinha a experiência da Sociedade Brasileira de Medicina Tropical para recuperar a revista. Houve um período que ainda era inglês com resumo em português, mas depois achamos que era perda de tempo, porque quem lê

o texto não precisa de resumo. E o cientista hoje que não lê inglês não pode ser cientista, não é? A ciência toda está em inglês.

[...]

29) WFH: *O que teve maior influência: as coisas externas como guerra, anos de chumbo, ou as coisas mais internas, como as ditaduras e o tratamento pelo governo?*

COURA: A única influência da ditadura na realidade foi cassar dez pesquisadores importantes da época. Mas ela fez uma coisa boa que foi criar a fundação. O próprio Rocha Lagoa [diretor do IOC 1964-69, que cassou os dez cientistas] foi demitido pela própria ditadura. Ele demitiu os pesquisadores no começo da ditadura e foi cassado pela própria ditadura, foi demitido porque não queria ir para Brasília. Ele construiu um prédio aqui em frente. O Médici queria que fosse todo mundo para Brasília, toda a administração. E como o Rocha Lagoa tinha muitos generais simpáticos a ele, ele achou que tinha mais força que o presidente da república. Isso foi um erro. Eu conheci o ajudante de ordens do Médici que disse que ele passava ali, via o prédio e balançava a cabeça. E aí demitiu, até porque o Rocha Lagoa também não queria que construísse a Transamazônica. Achava que era uma loucura. Mas eu nunca cheguei a conhecê-lo.

30) WFH: *Estávamos falando sobre as mudanças na política editorial da revista. [Descreva um pouco desta trajetória]...*

COURA: Quando as *Memórias* foram criadas, foram criadas para publicar o trabalho dela própria. Só depois, não sei exatamente em que ano, começou a se publicar artigos...

31) WFH: *Eu vi nos originais que era proibida a presença de outros autores. [...] E foi só com o senhor, em 1980, que passou a haver uma política aberta para convidar pesquisadores de fora para publicar. [...] E depois vi que foi mudando ainda mais. As instruções para autores em 1992 diziam que era necessário que a submissão estivesse em inglês, ou era preciso combinar com o editor caso não estivesse.*

COURA: Você sabe mais da história disso do que eu.

32) WFH: *(risos) Eu vi no site em 2013 algo bem interessante para mim: começaram a terceirizar a revisão da revista para uma companhia na Carolina do Norte.*

COURA: Sim, o American Journal Experts. Eles fazem o seguinte: você tem que fazer o seu artigo em inglês. Eu por exemplo, tenho um revisor. Eu apresento o meu artigo, ele revê, eu mando, mas mesmo assim o editor manda para o American. O American faz uma coisa interessante: eles perguntam “o que você quer dizer com isso?”, e você tem que dizer.

33) WFH: *Sobre uma frase ou sobre o artigo todo?*

COURA: Sobre uma frase, sobre uma palavra, e isso ajuda muito a gente. Porque quem não é nativo da língua às vezes quer dizer uma coisa e diz outra.

34) WFH: *A revista não repassa o custo dessa revisão para os autores?*

COURA: O American Journal Experts não sei quanto cobra. Mas o meu revisor [particular] cobra acho que vinte centavos por palavra, não é barato. Um artigo desses de 10 páginas fica 500, 600 reais. Mas como tenho recursos do CNPq, eles pagam pela revisão para mim. E às vezes, para economizar tempo, se eu tenho um artigo para entregar em três ou quatro dias, eu mando em português para ser traduzido. Porque se eu gasto uma noite ou duas noites para escrever em português, em inglês eu gasto três, quatro.

35) WFH: *E às vezes há artigos nos quais fica mais difícil corrigir o inglês do que fazer uma tradução do original; eu entendo isso.*

COURA: Então eu faço isso. Quando eu tenho tempo, escrevo em inglês - até para treinar.

36) WFH: *Eu gostaria de ouvir do senhor sobre qual o impacto quando a revista passou a ser disponibilizada online? Houve algo perceptível? Foi óbvio?*

COURA: O impacto foi muito grande. Em 2006 eu deixei meu segundo período de editoração porque vi o número de consultas. Se você entrar online, você sabe quantas vezes o artigo foi consultado. Isso não quer dizer que quem consulta também cita. Mas, por exemplo, antes tínhamos 200 consultas por número. E aí passou a 2 mil, 3 mil.

37) WFH: *E isso deve ter tido um impacto importante para conduzir ao uso do inglês.*

COURA: Também tem algumas coisas que não se entende. Quem está administrando é o Momen que voltou, quer dizer, aposentou-se e, digamos assim, não quer mais trabalhar, mas auxilia a editora. E as *Memórias*, que estavam com fator de impacto de mais de 2, caíram muito há uns dois anos atrás. E não sabemos exatamente o que houve. Mas, na minha opinião é o tipo de artigo, de assunto, porque tem assunto que não é atrativo. É a questão do assunto da moda. Se você publicar alguma coisa sobre o ebola hoje, vai ter um monte de gente que vai querer saber, deve ser isso. Por exemplo, há um grande interesse pela doença de Chagas, e agora com a internacionalização... com relação à citação, o sujeito que criou o índice de impacto, um americano que já está com uns 90 anos, criou isso em 1946, e eu escrevi para ele. Fiz uma crítica ao fator de impacto. Aí ele respondeu: “O problema não é meu. Eu criei uma avenida e transformaram em uma vereda”. Ele me deu razão, só que os indivíduos que calculam o índice limitaram muito, e aí



cria-se um problema sério. Por exemplo, um ganhador do Prêmio Nobel esteve aqui ninguém lia meus trabalhos. Depois que eu ganhei, todo mundo cita os meus trabalhos, mesmo que não sejam bons”. Virou moda.

38) WFH: *Falando em Prêmio Nobel, o que aconteceu com as nomeações de Chagas? Houve intrigas? Por que Chagas não ganhou?*

COURA: Nós procuramos saber quando eu era diretor. Eu escrevi para o comitê e eles me responderam que é algo confidencial, mas houve uma briga dele com uma pessoa importante. O Chagas era um homem muito influente, casado com filha de senador, e foi nomeado diretor do Instituto e diretor da Saúde Pública. E o Afrânio Peixoto, que era um professor importante aqui, queria o cargo, e moveu uma campanha contra a doença de Chagas dizendo que aquilo era uma invenção e que não tinha problema. Também houve uma questão do Aragão com o Chagas, porque o Aragão descobriu um erro do Chagas. O Chagas descreveu um corpúsculo no pulmão que achou que a tripanosoma e não era, era um parasita que dá nos pulmões, e o Aragão fez muitas críticas a ele. Teve erro, naquela época o microscópio era muito ruim. Tanto que você olhava, fazia um desenho, e o desenhista refazia. Você olhava o trabalho de Chagas e tudo aquilo era desenho, o tripanosoma não é foto, é desenho. E houve críticas, possivelmente foi isso. Naquele ano, em 1921, não houve Prêmio Nobel para ninguém. Mas o comitê lá não quis dar satisfação.

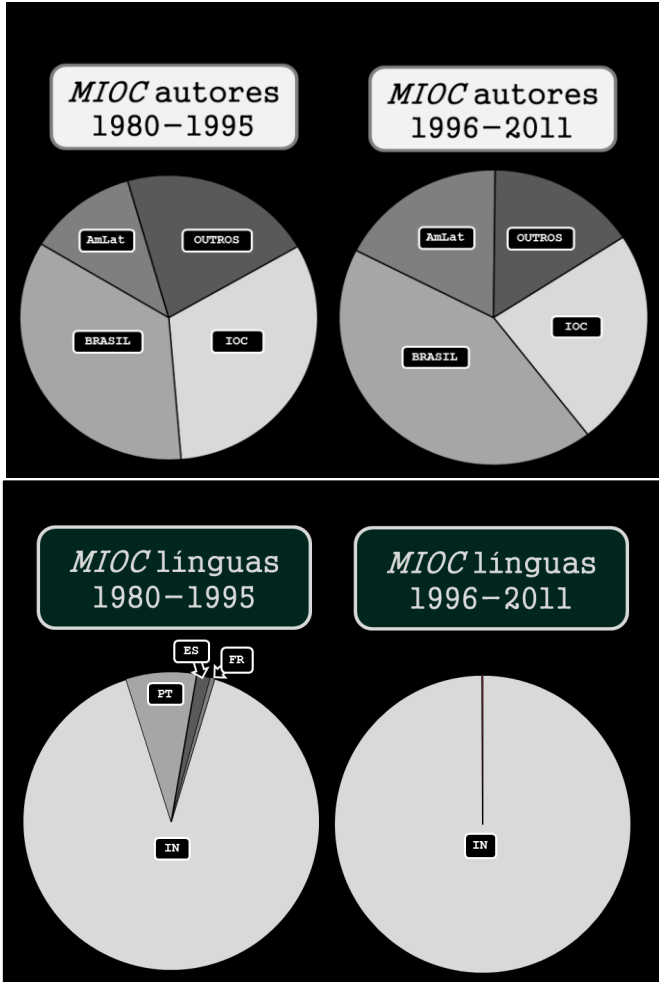


Figure 3. *Memórias do Instituto Oswaldo Cruz*: language of publication vs. lead author country for all articles published 1980-2011.

39) WFH: *unto com essas informações da internet eu compilei os dados, e tenho a língua cada artigo desde quando o senhor entrou como editor dividindo em dois períodos: de '80 até a internet [1996], e depois da internet. E aqui tenho a origem dos autores. Então em cada artigo eu compilei todos os autores e a origem de seu instituto [figuras abaixo]. Mas veja que quase nada mudou na proporção de contribuições de fora do Brasil, foi de 33% nos dois períodos. Achei muito interessante, pois*

*pensava que abriria muito mais para o restante do mundo, mas a mudança foi pequena, com um pouco mais para o Brasil e a América Latina, mas a proporção foi quase idêntica. Tem algum comentário sobre essas mudanças demográficas?*

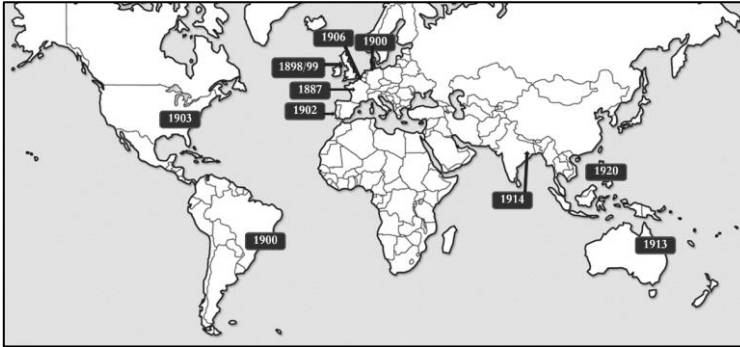
COURA: Não, eu acho que essa revista concorre. O problema é o assunto. Isso é um dos grandes problemas do fator de impacto. Se você publica um artigo de imunologia, por exemplo, tem muito mais abrangência do que um artigo de parasitologia, de microbiologia. O fator máximo de parasitologia é 4, o *Advanced Immunology* chega a 40. Então você não pode comparar, tem que comparar entre si. Eu acho que os fatores de impacto deviam ser agrupados em áreas. Por mais que essa revista progrida, ela dificilmente chegará a um fator de impacto de mais de 3. Você vê a *Acta Tropica*, que é uma revista da Elsevier, que é enorme. É uma revista boa e o fator de impacto é pouco mais de 2. Não sei qual é o fator de impacto do *American Journal of Tropical Medicine*, mas deve estar em torno disso<sup>225</sup>. A *Transactions of the Royal Society* já tem um impacto um pouquinho maior, é mais antiga. Mas todas são revistas limitadas. Agora estou escrevendo um artigo para a revista *FEBS Letters*.

40) WFH: *Eu nunca ouvi falar.*

COURA: Eu também não, mas o impacto é 3. Quer dizer, eu já tinha ouvido falar, mas não sei de onde é. Esse artigo foi por encomenda. Convidaram outra pessoa aqui dentro do Instituto que vai escrever a parte de imunologia, e eu estou escrevendo a parte de *Chagas and Chagas disease in South America*.

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<sup>225</sup> De acordo com o site da revista, o fator de impacto da mesma em 2014 foi 2.699. Informação disponível em: <<http://www.ajtmh.org/site/misc/about.xhtml>>. Acesso em: 26 jul. 2015.



41) WFH: *Esse é um mapa que fiz do nascimento da Medicina Tropical no mundo. Esses são os vários centros de que estávamos falando, e a*

Figure 4. Birth of Tropical Medicine: location and date of initial centers.

*data em que surgiram. É bem interessante porque a FIOCRUZ é um de somente três institutos dentro dos trópicos, e o único que não foi [mais] colônia nem colonizador, o que é maravilhoso, creio que seja uma situação única em todo o mundo.*

COURA: Nós nunca exploramos isso direito no sentido de divulgar essas informações, até por uma questão de ética, para não falar mal dos países que foram colonizadores, porque aí se cria um mal-estar.

[...]

COURA: Eu me lembro que quando saí do Brasil pela primeira vez fui para a London School [of Hygiene and Tropical Medicine] porque aqui não havia pós-graduação, e eu precisava fazer docência livre. Docência livre é um título de origem alemã. Você fazia um concurso de uma semana com prova escrita, prova prática, fazia uma tese, a defesa da tese, um currículo, e era submetido a uma comissão. Então você recebia um título com o qual podia dar cursos na área da sua especialidade. Podia ser professor e ser candidato a professor catedrático, que é o titular hoje. Isso foi em '64, '65. Aí eu estava em Londres e um londrino me perguntou: “Vocês ainda têm índios lá no Rio de Janeiro?”

42) WFH: *Era uma pessoa educada?*

COURA: Era meu colega, mas mostrou que não tinha nenhuma visão. Aí eu disse para ele: “Não, o último índio que tinha lá eu comi”. (risos) Antropófago. Ele ficou meio encabulado, meio constrangido. Ele confundiu Rio de Janeiro com Buenos Aires, e aí é uma ofensa. (risos)

43) WFH: *Falando nesse contexto mundial, vamos comparar o famoso ditado de Pasteur, que disse que ‘a ciência não conhece país’,<sup>226</sup> e uma frase de Aragão, retirada da história escrita por ele e publicada em 1950<sup>227</sup>. Então a ciência é nacional ou internacional? Essas duas visões podem ser conciliadas? Aragão fala sobre como Oswaldo foi um grande patriota, e tudo era pela pátria.*

COURA: Acho que isso não tem limite. Por exemplo, hoje eu disse para você que saí daqui em 1964/65 para ir fazer um tipo de aprendizado na Inglaterra, com um *fellowship* do CNPq. Hoje eles não dão mais isso porque você não precisa sair do Brasil, você tem tudo aqui. Você nem precisa mais aprender Medicina Tropical na Inglaterra porque nós sabemos mais do que eles. Então você vai para fazer um o que chamam de bolsa-sanduíche. Você pode fazer lá fora um aspecto da sua tese de doutorado, porque eles têm um sujeito muito bom lá, então você pode ir lá e passar alguns meses. Então alguns alunos vão de acordo com o tipo de atividade que estejam fazendo. [...]

44) WFH: *O senhor escreveu em '80 que “não existe nada mais incoerente e antipatriótico” do que publicar no exterior. Isso está no editorial que escreveu em '80.<sup>228</sup> Ainda acredita nisso? É a mesma situação ou as coisas mudaram?*

COURA: Talvez eu tenha sido um pouco arrogante com aquilo.

45) WFH: *Eu não sei... só estou curioso.*

COURA: Eu acho que você deve publicar onde vai ser lido. Se você vai ser mais lido aqui, você publica aqui. Se não, você publica no *Lancet*...se conseguir. Eu criticava muito, era muito crítico nisso, dizia o seguinte: “O indivíduo que fica vendo fator de impacto, um dia poderá ganhar o Prêmio Nobel do terceiro mundo, que é... publicar um artigo no *Nature*”. (risos) Aí um dia eu recebi um convite e já não posso mais falar, fui desmoralizado, porque o *Nature* me convidou para publicar um artigo pequeno, de duas páginas, sobre esse problema de Chagas no mundo, a migração e tal. E puxa, em um artigo de duas páginas, como fui citado, eu e o Pedro Abajar, um aluno meu que hoje é coordenador do programa de Chagas na OMS. Nós publicamos esse artigo e tem

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<sup>226</sup> “La science ne connaît pas de frontière parce que la connaissance appartient à l’humanité...” [falado no brinde do banquete do Congresso Internacional de Sericicultura em Milão, em 1876]

<sup>227</sup> ARAGÃO 1950:19: “Oswaldo estava edificando, não para si próprio [...] mas [...] com o único objetivo de aumentar o prestígio científico do Brasil e elevar sua cultura.”

<sup>228</sup> COURA, José R. Editorial. **Memórias do Instituto Oswaldo Cruz**. Rio de Janeiro, n. 75, p.1-2, 5, 1980. [documento completo disponível como Apêndice desta entrevista]

centenas de citações porque é no *Nature*, não é? O artigo em si não tem novidade nenhuma. (risos)

46) WFH: *É só a localização, como se diz nas imobiliárias. (risos) Imagino que o senhor já deve conhecer muito bem o artigo de Meneghini & Packer[“Is there Science beyond English?”<sup>229</sup>]. Eu gostaria de ouvir sobre a fundação do SciELO, o seu valor, o que o SciELO fez pelas Memórias e o contrário, e também sobre esse assunto que eles debatem. Já falamos sobre a necessidade do inglês, mas será que é uma armadilha...uma manobra? Tem uma saída ou vai-se ficar preso ao inglês para sempre? Será que vai mudar algum dia para outros modelos?*

COURA: Não sei, porque eu acho que vai ser longo. Dizer que nunca vai sair do inglês é muito difícil de prever. Eu sou muito simpático ao inglês. Não é que eu seja muito esperto, porque eu aprendi inglês já maduro. Na escola a gente tinha inglês, mas era muito fraquinho. Tanto que quando eu cheguei em Londres, eu fiz um curso rápido aqui e o Conselho Britânico me deu um curso lá. Aí eu fui comprar um envelope. Cheguei lá e disse: “*I want to buy a box to put a letter*”. E o rapaz disse: “*Oh, you need an envelope!*”. (risos) Só se aprende uma língua bem quando se aprende enquanto criança. E também depende da pessoa. Eu tinha um colega que trabalhava aqui comigo que trabalhou nos Estados Unidos e publicamos um artigo com um colega da Califórnia, e ele escreveu o artigo. Eu li e achei o inglês ruim. Aí eu chamei o colega e disse: “Eu posso dizer que o inglês dele está ruim?”. Ele disse: “Pode, ele não se incomoda não”. “Então você diz que eu li o artigo dele e achei muito ruim, que ele deve mandar a um revisor”. Ele respondeu: “Você tem razão, eu escrevo mal em inglês”. Um americano, professor.

47) WFH: *Há muitos cientistas que não sabem escrever, não é?*

COURA: Assim como tem brasileiro que escreve mal em português, que estudou e escreve mal, também tem americano que escreve mal.

48) WFH: *Isso leva à minha próxima pergunta. Falando em escrita, eis essa imagem que o senhor já conhece. Dois integrantes do Instituto Oswaldo Cruz foram membros da Academia Brasileira de Letras. Oswaldo e creio que Chagas Filho, certo?*

COURA: Não, Chagas Filho e Chagas Pai também.

49) WFH: *Chagas também? ...então foram três. Fale um pouco sobre como a literatura científica se encaixa na “literatura, com L maiúsculo”.*

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<sup>229</sup> MENEGHINI, Rogerio; PACKER, Abel. Is there Science beyond English? **EMBO Reports**, n.8, p. 112-116, 2007.

COURA: Você diz literatura...

50) WFH: *Literatura artística. Porque é raro se fazer um curso na área de literatura e alguma coisa sobre literatura científica ser mencionada; porém, a área envolve coisas muito interessantes. Eu me delicieei muito em ler Chagas e também Aragão, a forma como contam a história, o jeito, o estilo, e parece-me que a literatura científica não ganha reconhecimento como uma forma de literatura, como se não fizesse uma contribuição à cultura nacional. Pense, por exemplo, nos relatos de expedições científicas...*<sup>230</sup> *Mas Oswaldo e os outros foram reconhecidos como 'imortais' da literatura. Como o senhor vê a integração desses dois tipos de literatura?*

COURA: Isso é um pouco de falácia. Você tem escritores, e também tem... tem um escritor do qual você já ouviu falar: Paulo Coelho. É famoso. Ele não é um grande escritor, mas vende todos os livros que faz no exterior. Ele foi traduzido em 67 países diferentes. Quer dizer, então é um pouco de ficção.

51) WFH: *Ele é mais conhecido do que Machado de Assis.*

COURA: Muito mais, muito mais do que Machado de Assis. Esse sim é indiscutível, criador da Academia de Letras e tal. De modo que se tem muita ficção nessa coisa, depende um pouco do assunto que você aborda, da forma como você aborda. Esse Paulo Coelho está riquíssimo hoje, mora em Paris. Outro dia eu vi um retrato dele. Ele mora em um apartamento em Paris em que treina flecha... imagino que a sala desse apartamento deve ter mais de 100 metros. Em Paris. (risos) Ele vem ao Brasil duas vezes por ano. E é da Academia de Letras. Entrou com dificuldades porque o pessoal acha que ele é um mau escritor, que não é um intelectual, é um escritor de livros de segunda categoria. Aqui no Brasil ele é considerado assim, e é o mais lido do mundo.

52) WFH: *Por isso ele não mora mais aqui! (risos)*

COURA: É exatamente isso. É como aquela coisa do Prêmio Nobel. Ele se tornou conhecido, e cada dia mais conhecido, mais conhecido...

53) WFH: *Mas o senhor acha que, por exemplo, o artigo que está escrevendo [aqui na escrivainha] é arte? O senhor está fazendo arte?*

COURA: De certo modo é. Eu costumo brincar com o pessoal: nós todos pesquisadores somos artistas. O professor então é um artista. Se ele não for artista ele não é um bom professor. Artista na forma de ser, de se apresentar. Eu fui professor por 36 anos na universidade. Inclusive

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<sup>230</sup> Como um dos vários exemplos, veja: Lutz, Adolpho; Machado, Astrogildo. - Viajem pelo rio S. Francisco e por alguns dos seus afluentes entre Pirapora e Joazeiro. Mem. Inst. Oswaldo Cruz; 7(1):5-50, 1915.

coincidiu um período em que era de lá [UFRJ] e daqui [na FIOCRUZ]. E me lembro que, quando comecei como professor auxiliar, eu dava aula para mim, não para os alunos. Então eu preparava uma aula intelectualizada para o aluno. E o aluno não aprendia. (risos) Porque eu dava uma aula muito complicada. Então uma vez dei uma aula sobre antibióticos; e quando acabei a aula disse: “Alguma pergunta?”. Aí um aluno disse: “Não, não tenho pergunta, tenho uma observação para fazer. O senhor disse tudo isso, mecanismo, a molécula que atingia, onde que atingia, a membrana do parasita que ia atingir, um bocado de coisas. Mas eu não sei receitar um antibiótico. O senhor não ensinou”. (risos) Eu fiquei chateado, mas depois pensei: “Ele tem razão”. E ele era estudante de medicina. Eu tenho que dar uma aula para a plateia. Então hoje quando me chamam para fazer uma conferência, uma fala, eu pergunto: quem é a plateia? É a primeira coisa que se tem que saber. E de acordo com a plateia você dá o nível. Não adiante eu chegar para uma plateia que não sabe nada... talvez eu devesse ter dado as duas coisas, não é? Primeiro uma aula dizendo esse mecanismo age com tal antibiótico, funciona com isso, e tal, fazer uma coisa mista que ele entendesse, ele tinha razão. Então nós somos artistas. Se você não é artista, você é criticado com razão.

54) WFH: *Eu estava olhando [antes da entrevista] a beleza do Palácio Mourisco. Então era arte, estética, uma semiótica que o Oswaldo estava construindo. Mas era uma coisa totalmente voltada à prática... para o Brasil. Monteiro Lobato falou que ‘a salvação está lá’ em Manguinhos<sup>231</sup>, a redenção do país. O Instituto Soroterápico começou com produção.*

COURA: Uma vez perguntaram para o Oswaldo: “Por que você fez esse prédio desse jeito?”. Ele disse: “Porque achei mais bonito”. (risos) Mas não era. O problema é que no Brasil, naquela época, os navios não paravam aqui, por causa da febre amarela, da cólera... Paravam ao largo do mar e se ia apanhar mercadoria lá, porque eles tinham medo da doença... Aí passavam direto para Buenos Aires, que era muito mais elevado. E o Oswaldo, quer dizer, isso é interpretação falsa, construiu uma coisa que ninguém poderia ver do mar sem prestar atenção. Então a pessoa passa na avenida e diz: o que é isso? Mas na explicação ele disse “porque achei mais bonito”. Mas ele foi a Hamburgo, ele foi aos

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<sup>231</sup> “Manguinhos já fez mais pelo Brasil do que um século inteiro de bacharelise onipotente. A salvação está lá. De lá tem vindo, vem e virá a verdade que salva – essa verdade científica que sai nua de arrebiques do campo do microscópio, como a verdade antiga saía do poço” (LOBATO, 1957, p. 244).



Estados Unidos, pegar inspiração, ver prédios, e escolheu esse estilo, e aquelas cúpulas que têm lá eram um observatório. Porém os arquitetos modernos não gostam desse estilo.

Niemeyer veio fazer uma conferência aqui e eu perguntei: “O que o senhor acha desse prédio aí?”. Eu sabia que ele não gostava. Ele disse: “Eu não sou contra obras antigas”. (risos) Mas o português que construiu isso [o arquiteto Luiz de Moraes] não tinha posto aqueles observatórios, ele tinha feito um estilo mais reto, o Oswaldo foi quem quis colocar para chamar a atenção. Então aquilo foi um simbolismo. Não era para mostrar a arquitetura, era para mostrar uma coisa diferente, para que as pessoas prestassem atenção. Essa é a minha interpretação.

55) WFH: *Eu gostaria de saber um pouco sobre a interação entre Manguinhos e organizações mundiais tais como PAHO, OMS, Rockefeller, e também nacionais como NIH e o Bernard Nocht Institute of Tropical Medicine, de Hamburgo.*

COURA: Nós temos uma interação, se eu não me engano, com maior ou menor ligação, com 63 instituições no mundo todo. Agora mesmo nós fizemos um acordo com o Pasteur de Paris, a Universidade de São Paulo e o Instituto. O diretor do Pasteur veio aqui...

56) WFH: *O Ricardo Lourenço-de-Oliveira estava em Paris no ano passado, não é?*

COURA: Sim. Aliás, o Ricardo foi o último editor das *Memórias*, agora é um novo. Pois é, então tem muita ligação. Tem ligação com Hamburgo, tem ligação...

57) WFH: *Mas o que quer dizer isso na realidade, na real interação? Vocês têm reuniões juntos?*

COURA: Temos reuniões juntos, e temos troca de pesquisadores. O Ricardo Lourenço passou um período no Pasteur agora há pouco tempo. E tem franceses que vêm para cá. Com os Estados Unidos eu não sei exatamente qual a ligação, mas tem com a Inglaterra, tem com vários países.

58) WFH: *Eu acho que o senhor já foi muito paciente comigo. Já tivemos quase duas horas de entrevista ,muito trabalho. Muito obrigado!*

APPENDIX C. *MEMÓRIAS DO INSTITUTO OSWALDO CRUZ*: CONTRIBUTING AUTHORS FROM FOREIGN INSTITUTIONS, 1909-1979

continued...

YEAR	LANGUAGE	AUTHOR/S	INSTITUTIONAL ORIGIN
1909	PT/GR	GIEMSA & GODOY	GERMANY & IOC
1909	PT/GR	PROWAZEK	GERMANY
1909	PT/GR	PROWAZEK	GERMANY
1909	PT/GR	PROWAZEK & ARAGÃO	GERMANY & IOC
1910	PT/GR	HARTMANN	GERMANY
1910	PT/GR	HARTMANN & CHAGAS	GERMANY & IOC
1910	PT/GR	PROWAZEK	GERMANY
1910	PT/GR	HARTMANN & CHAGAS	GERMANY & IOC
1926	PT	MICHAELSEN	GERMANY
1929	FR	VELLARD & M. VIANNA	FRANCE/MIB*
1929	FR	VELLARD	FRANCE/MIB*
1938	PT/EN	PHILIP & DIAS	USA & IOC
1939	PT	COLE & CARDOSO	BRAZIL <sup>17</sup> & IOC
1940	PT/EN	ADLER	ISRAEL
1943	PT	LENETTE & FOX	USA/BRAZIL#
1943	PT	CERQUEIRA	BOLIVIA/BRAZIL/USA#
1943	PT	CERQUEIRA	BOLIVIA/BRAZIL/USA#
1943	PT	CERQUEIRA	BOLIVIA/BRAZIL/USA#
1945	PT	LENT & WYGODZINSKY	IOC & ARGENTINA/BRAZIL
1951	PT	LENT & WYGODZINSKY	IOC & ARGENTINA

continuation...

1952	PT/EN	WILSON	USA
1952	FR	BOUVIER	SWITZERLAND
1954	FR	MELLO	FRANCE*
1955	PT	LENT & WYGODZINSKY	IOC & ARGENTINA
1955	PT	LIBERMANN	ARGENTINA
1956	EN	FENNER	AUSTRALIA
1956	PT	SCORZA, DAGERT & AROCHA	VENEZUELA
1957	PT	UNITED NATIONS	USA
1957	PT	DOBBIN	IOC <sup>?</sup>
1957	FR	CIUCA & COMBIESCU	ROMANIA
1957	FR	CIUCA	ROMANIA
1958	PT	SMITH	USA
1958	PT	DOBBIN	IOC <sup>?</sup>
1959	FR	BATISTE	ALGERIA
1961	EN	KIRNER & LOPES	USA & IOC
1961	EN	FAIRCHILD	PANAMA
1961	EN	FAIRCHILD	PANAMA
1961	SP	FREITAS & IBÁÑEZ	IOC & PERU
1965	PT	FREITAS & IBÁÑEZ	IOC & PERU
1965	PT	RÊGO & IBÁÑEZ	IOC & PERU
1965	EN	SWALLEN	USA
1967	PT	FREITAS, KOHN & IBÁÑEZ	IOC & PERU
1968	PT	RÊGO, VICENTE & IBÁÑEZ	IOC & PERU

continuation...

1970	FR	DUBOIS	SWITZERLAND
1971	EN	PERAZA & ROCA	VENEZUELA
1971	EN	LAINSON, GARNAM & SHAW	UK/BRAZIL
1971	PT	FRAIAH, SHAW & LAINSON	UK/BRAZIL
1972	EN	WARD	UK/BRAZIL
1973	EN	SMITH	USA
1973	EN	SMITH	USA
1973	EN	CRISP & KLEIN	UK/BRAZIL
1976	SP	IBÁÑEZ & CÓRDOVA	PERU
<b>52 TOT</b>	<b>TOT LANG</b>	<b>TOTALS BY REGION</b>	<b>15 TOTAL COUNTRIES</b>
<b>ARTICLES</b>	PT 20	EUROPE = 20	GERMANY 9
	EN 11[3]	LATIN AMERICA = 17	USA 8
	FR 8	NORTH AMERICA = 8	PERU 6
	GR [8]	OTHER = 3	ARGENTINA 4
	SP 2	UNDETERMINED = 3	UK 4
			BOLIVIA 3
			FRANCE 3

conclusion...

	OTHER 3
	UNDETERMINED/IOC 3
	PANAMA 2
	ROMANIA 2
	SWITZERLAND 2
	VENEZUELA 2

*LEGEND: EN = English; FR= French; GR = German; PT = Portuguese; SP = Spanish; IOC = Instituto Oswaldo Cruz [ ] = Translated to PT; \*Deduced; #Rockefeller Foundation; †Centro Internacional de Leprologia, RJ; ?Undetermined*









conclusion...

1934	1[2]	2		1			3		1								
1935	[1]	2		1			2		1								
1936	1	6	[3]				7										
1937			1				1										
1939		1	3[1]				3										1
	GR	PT	EN	FR	SP	IT	BR	GR	F R	S W	US A	U R	IT	AR G	U K	J P	
Tot.	55[3 3]	118[2 ]	10[20 ]	16[2 ]	2	[2]	128[2 ]	44[1 ]	18	5	5	2	[2 ]	1	1	1	

*\*Date corrected in Benchimol & Sá 2006*

*Legnd. Languages: GR = German , PT= Portuguese, EN= English, FR= French, SP= Spanish, IT= Italian; Countries: BR= Brazil, DE= Germany, FR= France, CH= Switzerland, USA= United States, UR= Uruguay, IT= Italy, AR= Argentina, UK= United Kingdom, JP= Japan.*

APPENDIX E - SCIENTIFIC PRODUCTION OF LAURO TRAVASSOS (1890-1971)<sup>232</sup>

A. Overall totals

Total Articles: 420

Total unique journals: 45, of which 9 were non-Brazilian<sup>233</sup>.

B. Summary of foreign language works

Total FL articles	49	
in Brazilian journals	9	All in <i>Memórias</i>
in foreign journals	40	
PT arts. in foreign journals	4	including IN,AR,MX
French articles	39	
German articles	8	4 early in <i>Memórias</i>
Italian Articles	1	
English articles	1	
Total monographs	19	
Portuguese mono.	17	
French mono.	2	

C. Summary of most significant journals

Title	Span	Tot.	
<i>Memórias do IOC</i> (RJ)	1913-69	73	
<i>Archivos do Museu Nacional</i> (PT)	1919-65	5	second longest span
<i>Anais da Acad. Bras. Ciências</i> (PT)	1929-64	11	third longest span
<i>Revista Bras. de Biologia</i> (RJ)	1941-59	54	
<i>Comptes Rendus des Séances et Mémoires de la Société de Biologie</i> (Paris)	1923-33	33	only steady foreign journal
<i>Atas da Sociedade de Biologia do RJ</i>	1957-71	93	final emphasis

D. (Below) Timeline of articles

<sup>232</sup> Based on data from the *Memórias do Instituto Oswaldo Cruz* corpus and Dias et al.1990.

<sup>233</sup> Journal origins: France 1; Germany 3, UK 1; Italy 1; Spain 1; Uruguay 1; Mexico 1



APPENDIX F.- KEY EDITORIALS FROM THE REVISTA BRASILEIRA DE PESQUISAS MÉDICAS E BIOLÓGICAS / BRAZILIAN JOURNAL OF MEDICAL AND BIOLOGICAL RESEARCH

This document contains complete transcriptions of three important editorials which denote the journals' language policy and aims. In the first, from issue 1 of volume 1 (1968), editor Michel Jamra lays out the journal's purpose and its call for collaboration. The second, from 1980, is Jamra's farewell address, as he prepares to close the journal due to financial hardship. These two editorials were published in Portuguese only and have been translated here in a two-column format for comparison. The final editorial is from the first issue of 1981, in which the new Editorial Board of the renamed, English-only journal prepares to continue operations.

ORIGINAL

I. RBPMB 1(1) 1968

EDITORIAL

*Há algum tempo enviamos carta convidando vários cientistas brasileiros dedicados à pesquisa no campo da medicina e da Biologia, para fundarmos Revista nova, a ser redigida em línguas de penetração internacional e também em português. A carta convite era do seguinte teor:*

*“À vista de a produção científica brasileira, no campo médico-biológico, já ter alcançado bom nível de qualidade e mesmo razoável densidade:*

*à vista de que já se tornou bem aceita a idéia de se publicar em inglês, francês, espanhol, além do português, a produção científica brasileira;*

*à vista da circunstância de as revistas científicas norte-*

TRANSLATION

I. RBPMB 1(1) 1968

EDITORIAL

*It has been some time since we sent out a letter inviting Brazilian scientists dedicated to research in the fields of Medicine and Biology to found a new journal written in languages with international reach, as well as in Portuguese. The letter was as follows:*

*“Given that Brazilian scientific production in the biomedical field has reached a good level of both quality and density:*

*given that the idea of publishing in English, French and Spanish, as well as in Portuguese, has become acceptable for Brazilian scientific production;*

*given that North American and European scientific journals have been overloaded with an excess of submitted articles in the last two*

*americanas e européias estarem, nos últimos 2 anos, sobrecarregadas com excesso de trabalhos a publicar, circunstância que leva a postergar a publicação de trabalhos enviados de outros países, inclusive do Brasil;*

*à vista de que a boa produção dos bons laboratórios e Centros de estudo e pesquisa do Brasil se dispersa por centenas de publicações especializadas do estrangeiro, com o inconveniente de não termos um órgão drenador e coletor do melhor da produção nacional no campo médico-biológico;*

*à vista de que a circunstância acima impede o conhecimento pronto do campo de atividades de cada Centro científico do país e o levantamento fácil do acervo científico do País no campo das ciências médico-biológicas;*

*um grupo de pesquisadores e professores de medicina e biologia idealizou e levou a cabo a organização de uma editôra que se encarregará, desde 1968, da publicação da "REVISTA BRASILEIRA DE PESQUISAS MÉDICAS E BIOLÓGICAS", de padrões gráficos e editoriais de bom nível; esta receberá originais em português, inglês, francês, espanhol ou alemão, preferivelmente em português ou inglês;*

*o Corpo Editorial, responsável, será o seguinte: Michel Jamra,*

*years, a circumstance which has led to the postponement of papers sent from other countries, including Brazil;*

*given that the good production of good Brazilian laboratories and research centers is dispersed in hundreds of specialized foreign publications due to the inconvenient fact that we have no organ to showcase the best of national production in the biomedical field;*

*given that the above circumstance impedes awareness of the field of activity of every scientific center in the country and an easy assessment of the country's scientific production in the biomedical field;*

*a group of researchers and professors of medicine and biology determined to organize a publisher charged with, beginning in 1968, the publication of the "REVISTA BRASILEIRA DE PESQUISAS MÉDICAS E BIOLÓGICAS" (Brazilian Journal of Medical and Biological Research) with high graphic and editorial standards;*

*said journal will receive original articles in Portuguese, English, French, Spanish or German, preferably in Portuguese or English;*

*the Executive Editors will be Michel Jamra, editor-in-chief; Carlos da Silva Lacaz and Waldemar Ferriera de Almeida, associate editors;*

editor; Carlos da Silva Lacaz, e Waldemar Ferrieira de Almeida, editores-associados;

o Conselho Científico será constituído dos professôres Antonio Barros Ulhôa Cintra, Carlos Chagas Filho e Otto Bier;

o Corpo de Redatores será constituído de cientistas professôres, entre os mais destacados e respeitados do País, do Amazonas ao Rio Grande do Sul;

a "REVISTA BRASILEIRA DE PESQUISAS MÉDICAS E BIOLÓGICAS", terá tiragem de 10.000 (déz mil) exemplares, que serão distribuidos e assinados pelos médicos, biólogos e cientistas afins dos centros atuantes do País, a partir de Janeiro de 1968;

a Revista será distribuida pelas principais Escolas médicas e Centros de pesquisas médicas e de pesquisas médico-biológicas das Américas, Europa e alguns Centros da Ásia e África, para o que esperamos contar com a colaboração de órgãos governamentais;

certos de que bem compreenderá a motivação que nos levou a fundar esta nova Revista Científica que terá o mérito de abrigar dentro das nossas fronteiras o que aqui se faz, dando a conhecer a uns e outros a atividade científica de cada um, confiantes nesta nossa demonstração de capacidade e

the Scientific Committee will consist of Antonio Barros Ulhôa Cintra, Carlos Chagas Jr. and Otto Bier;

the Editorial Board will be drawn from among the most respected and visible science professors in the country, from the Amazon to Rio Grande do Sul;

Ten thousand copies of each issue of the "REVISTA BRASILEIRA DE PESQUISAS MÉDICAS E BIOLÓGICAS" will be printed for distribution to, and subsequent subscription by, physicians and biologists at active centers within the country, beginning in January 1968;

the Journal will be distributed to the principal schools of medicine and medical and biomedical research centers of the Americas, Europe and some centers in Asia and Africa, with which we count on the collaboration of government agencies;

Certain that you will clearly understand the motivation that has led us to found this new scientific journal, which will have the honor of harboring within our own borders research that has been undertaken here, displaying our scientific activity to one other. Confident in this demonstration of our capacity and certain that we will receive your support, we are Sincerely yours..."

The list of collaborators on the back cover shows the level of qualification and responsibility of

*certos de que encontraremos apoio de sua parte, firmamo-nos.”*

*O corpo de colaboradores que está indicado na contra-capa mostra a qualificação e a responsabilidade dos que nos honrarem e houveram por bem anuir em levar a cabo o empreendimento. Tal apoio nos indicou que estávamos no caminho certo. A nós cabe agora agradecer a boa vontade, o empenho e a confiança de todos.*

*Sai este primeiro número depois de vencidas algumas dificuldades e até com certo sacrifício. Conterá certamente omissões e enganos. Nos números seguintes faremos todo o esforço para o aprimoramento cada vez maior da Revista que seria, primordialmente, dos que se dedicam à pesquisa no nosso País. Pedimos agora, ao ensejo deste primeiro número, sugestões e conselhos aos que tiveram interesse em fazer com que vá melhorando pouco a pouco o padrão da “REVISTA BRASILEIRA DE PESQUISAS MÉDICAS E BIOLÓGICAS”.*

*Reagradecendo a confiança, cumprimos os nossos colaboradores, esperando deles participação, ativa e atuante, neste novo órgão de divulgação da nossa produção científica.*

*MICHEL JAMRA, Editor*

*those who have honored us with their help in producing this issue. Such support tells us that we are on the right track. We would like to thank everyone involved for their good will, hard work and trust.*

*For this issue to be produced, a number of difficulties have had to be overcome, involving a certain amount of personal sacrifice. It will certainly include omissions and errors. In future issues we will make every effort to better the Journal, which should belong, fundamentally, to those who have dedicated themselves to research in our country. We would like to take the opportunity of this first issue to ask for your suggestions and advice, that little by little we can raise the standards of the “REVISTA BRASILEIRA DE PESQUISAS MÉDICAS E BIOLÓGICAS”.*

*With thanks again for their trust, we salute our collaborators, hoping for their continued active participation in this new organ of communication for our scientific production.*

*MICHEL  
JAMRA, Editor*

II. RBPMB 13(1-3)  
1980

EDITORIAL  
*AGRADECIMENTO –  
EXPLICAÇÃO – DESPEDIDA*

Este editorial é destinado a agradecer aos nossos autores e colaboradores o enorme esforço feito por eles, que não só elaboraram os estudos e investigações que vieram a ser publicados na Revista Brasileira de Pesquisas Médicas e Biológicas, como também conseguiram, nestes últimos 4-5 anos, os fundos necessários para a impressão dos seus trabalhos. Foi passo pioneiro no nosso País o de os autores cuidarem, além de todos os encargos da investigação feita, também o custo da impressão. Contaram para isso, muitas vezes, com o auxílio das próprias instituições onde trabalham, como também da Fundação de Amparo à Pesquisa do Estado de São Paulo e do Conselho Nacional de Desenvolvimento Tecnológico e Científico, CNPq.

Este esforço, a esta cooperação dos autores, em vista da inflação que se faz sentir mês a mês, não foi suficiente. A liberação de verbas, sempre tardia e o vencimento regular, a intervalos curtos, dos compromissos da Revista, reajustados à inflação, levaram-nos a diminuir o ritmo da

II. RBPMB 13(1-3) 1980

EDITORIAL  
*GRATITUDE – EXPLANATION –  
FAREWELL*

The purpose of this editorial is to thank our authors and collaborators for their enormous efforts, having not only developed studies for publication in the *Revista Brasileira de Pesquisas Médicas e Biológicas* (*Brazilian Journal of Medical and Biological Research*) but also, in these last 4-5 years, having provided the funds for their publication. It has been a first in our country that authors should have to, beside all the work involved in their investigations, have to bear the cost of their printing. For this they have often been helped by the very institutions that employ them, as well as by government agencies such as FAPESP and CNPq.

This effort, this cooperation by our authors, in view of the inflation that makes itself felt month by month, has not been sufficient. The receipt of funding – always late – and the unrelenting regular expenses of the Journal, readjusted for inflation, have forced us to reduce the frequency of publication and, finally, to decide to cease operations by the end of this year, 1980.

We would, nevertheless,



publicação e a decidir encerrá-la no correr deste ano de 1980.

Queremos ainda agradecer especialmente nossos “referees” de São Paulo, Rio, Belo Horizonte, Recife que muito nos ajudaram a corrigir e a reorientar a confecção e a redação dos textos. Este trabalho do Editor e dos “referees” é que deu certo nível à Revista, permitindo que fosse incluída no “Current Contents” e outros índices bibliográficos. O trabalho de editoração da Revista Científica passa despercebido. Só se vê o resultado final, o fascículo pronto e em circulação.

Exige ampla cooperação de toda uma comunidade científica. Com alguns companheiros fizemos equipe que batalhou conosco. Por 13 anos se publica a Revista sob nossa responsabilidade pessoal. É chegado o momento de passá-la a instituição idônea, que tenha tradição em pesquisa médica e biológica e que contenha, nos seus quadros, grupo devotado e com amor à publicação científica. Conseguimos interessar e atrair muitos e muitos pesquisadores das Universidades Federais e Estaduais e Institutos de Pesquisa. Muitos, entretanto, ainda se mantêm ligados aos velhos laços que tenham e têm com os EEUU e Europa. E a atitude de barretada aos países chamados da liderança científica não é fácil de modificar. Peculiaridades das características de nossa formação histórica e

like to especially thank our referees from São Paulo, Rio, Belo Horizonte and Recife, who have helped us correct, reorient, produce and revise our texts. Such work by the Editor and referees has resulted in the Journal reaching a sufficient level to be included in [the ISI’s] Current Contents and other bibliographic indexes. The work of editing a scientific journal goes by unnoticed. Only the final result is seen, the printed issue in circulation.

It demands the broad cooperation of an entire scientific community. Gathering a few partners, we put together a team that battled by our side. For 13 years the Journal has been published under our own personal responsibility. The time has now come to pass it on to a fitting institution with a tradition in medical and biological research that has, within its walls, a devoted group with a love for scientific publishing. We have succeeded in attracting many researchers from the federal and state universities and research institutes. Many, however, still remain connected to the old ties they have with the USA and Europe. This hat-tipping attitude to the so-called scientific leadership is not easy to modify – a peculiar characteristic held over from our historical and social formation as a colony.

There must be, however, a continuing opportunity to publish good biomedical scientific studies

social, desde o Brasil colônia.

Há, entretanto, que continuar oferecendo uma oportunidade brasileira para a publicação de bons trabalhos científicos na área médico-biológica. Daí a preocupação que temos em oferecer a continuidade da Revista a grupos idôneo, integrante de instituição tradicional e que possa assumir os encargos de publicação, distribuição e divulgação da Revista Brasileira de Pesquisas Médicas e Biológicas e, é claro, contando com o apoio decidido e continuando de órgão governamental competente. Só órgão que tenha fundos próprios, públicos, poderá manter a independência da indústria farmacêutica e de outras influências que a R.B.P.M.B. conseguiu.

No Brasil há que contar com recursos governamentais, públicos, em razão de quase ausência de subscrições. O apoio de entidade associativa com centenas e centenas de sócios que estivesse disposta a destinar parte da contribuição dos seus membros à publicação de órgão de veiculação de trabalhos científicos, poderia ser solução. Mas haveria que ir trilhando desde já este caminho para se alcançar o objetivo: produzir e manter, com independência, publicação científica de nível.

Nos países desenvolvidos a

in Brazil. Thus, our concern in establishing continuity for the Journal through an apt group within a traditional institution that can assume the burden of publication, distribution and promulgation of the *Revista Brasileira de Pesquisas Médicas e Biológicas* and, of course, counting on the firm continued support of a competent government agency. Only an agency with secure public funding can maintain its independence from the pharmaceutical industry and the other influences in the manner that the R.B.P.M.B. has been able to do.

In Brazil, public funds must be counted on due to an almost complete lack of individual subscriptions. The support of an entity with hundreds of members that is willing to designate part of their contributions to the publication of journal promoting scientific studies could be a solution. However, such negotiations must begin right away if the objective is to produce and maintain an independent, high-level scientific publication.

In developed countries, a simple subscription by 5000-6000 libraries (of universities or other institutions) is sufficient to maintain a scientific journal. In the US alone, there are 3000 libraries that subscribe, almost automatically, to scientific periodicals.

simples subscrição de assinaturas por 5.000-6.000 bibliotecas (universitárias e de instituições diversas) mantém as Revistas Científicas. Só nos EEUU contam-se cerca de 3.000 bibliotecas que subscrevem, quase que automaticamente, os periódicos científicos. Isto explica o jorro de revistas novas, publicadas a cada ano, pelas várias casas editoras dos EEUU e da Europa lançando nomes e nomes novos de editores, redatores e colaboradores diversos.

Estamos em busca de grupo que, através de liderança editorial responsável, possa receber e continuar a R.B.P.M.B. Neste fascículo como que nos despedimos dos pesquisadores brasileiros. No próximo, voltaremos ao assunto, eventualmente anunciando como e com que grupo continuará a R.B.P.M.B.

MICHEL  
JAMRA, EDITOR

This explains the rash of new journals appearing each year by various publishers in the US and Europe featuring so many new names of editors and collaborators of all sorts.

We are in search of a group that, through responsible editorial leadership, can take over and continue the R.B.P.M.B. In this issue, we bid our farewell to Brazilian researchers; in the next, we will return to this subject, hopefully announcing that a group has come forth to continue the R.B.P.M.B.

MICHEL JAMRA,  
EDITOR

*Brazilian J Med Biol Res (1981) 14*

#### EDITORIAL

The idea of creating a Journal for the international promulgation of Brazilian biomedical research is not new, and has been the subject of frequent discussions by the scientific societies active in the area. The idea actually became a fact when representatives of the Societies of Biochemistry, Biophysics, Clinical Investigation, Pharmacology and Experimental Therapeutics and Physiology met in early 1980 and reached the conclusion that the best way to carry out the project was to create the Associação Brasileira de Divulgação Científica (ABDC)(Brazilian Association of Scientific Divulagation). The

federation of five societies was charged with creating and publishing a new Journal, with the possibility of undertaking other editorial activities in the future. At the same time, Professor Michel Jamra published an Editorial in the *Revista Brasileira de Pesquisas Médicas e Biológicas* (Brazilian Journal of Medical and Biological Research) announcing that the Journal would stop its activities unless it could be transferred to some scientific body that could ensure continuity. After a meeting of the provisional board of ABDC with Professor Jamra, it was concluded that it would be advantageous to replace the idea of creating a new Journal with that of continuing the existing Journal. This decision was also made partially on the basis of the willingness shown by the Directors of the Conselho Nacional de Desenvolvimento Científico e Tecnológico (National Council for Scientific Development and Technology) to support the continuity of a national pioneering initiative in the biomedical area maintained for many years through the great effort and dedication of Professor Michel Jamra.

The publication and distribution of the Journal is supported by the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), and Biblioteca Regional de Medicina (BIREME). The Journal is edited at the Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo, in an office kindly provided by the Director, Professor J.E. Dutra de Oliveira. We are indebted to Professor F. Moura Duarte, Editor of *Revista Brasileira de Genética* (Brazilian Journal of Genetics) for his expert advice and assistance in the preparation of our Journal.

The Editors

APPENDIX G. WORLD MILIEU OF TROPICAL MEDICINE AND RELATED JOURNALS ESTABLISHED BEFORE 1945

continued...

	Data based on the most relevant content from the Institute of Tropical Medicine Antwerp (ITMA) library catalog, worldcat.org, hathitrust.org., gallica.bnf.fr / biusante.parisdescartes.fr (supplemented by web and wikipedia.org searches). “Related” may include early generalized medical journals for historical context. <b>Purple</b> = not in ITMA collection; <b>red</b> = best guess for date of volume 1. A“/” indicates either a name change (date provided when found) or a multilingual title. Terminal dates given when found. Language data given where specified.
<b>REGION: AMERICAS</b>	
<b>ARGENTINA</b>	
1924	<i>Reunión de la Sociedad Argentina de Patología Regional Del Norte.</i> Buenos Aires
1928	<i>Publicación. Misión de Studios de Patología Regional Argentina.</i> Buenos Aires
1937	<i>Boletín Sanitário del Departamento Nacional De Higiene.</i> Buenos Aires
1940	<i>Medicina.</i> Buenos Aires
1943	<i>Revista de la Facultad De Ciencias Medicas.</i> Universidad Nacional De Córdoba
<b>BRAZIL</b>	
1852	<i>Gazeta Medica do Rio.</i> Rio de Janeiro
1866	<i>Gazeta Medica de Bahia.</i> Salvador: Faculdade de Medicina da Universidade Federal da Bahia
1888	<i>Brasil-Medico: Revista Semanal de Medicina e Cirurgia.</i> Rio de Janeiro, 1888-1971
1898	<i>Revista Médica de São Paulo: Jornal Prático de Medicina Cirurgia e Higiene.</i> 1898-1914
1900	<i>Annaes Paulistas de Medicina e Cirurgia.</i> São Paulo
1903	<i>Gazeta Clínica de São Paulo.</i> São Paulo 1903-1915
1905	<i>Instituto Pasteur de São Paulo: Relatórios.</i> São Paulo 1905-1912

continuation...

1909	<i>Memórias Do Instituto Oswaldo Cruz.</i> Rio de Janeiro
1911	<i>Archivos Brasileiros de Medicina / (1945-) Arquivos De Clinica .</i> Rio de Janeiro
1912	<i>Instituto Pasteur de Porto Alegre.</i> Porto Alegre
1916	<i>Archivos/Arquivos de Biologia.</i> São Paulo 1916-1936
1918	<i>Memórias Do Instituto Butantan.</i> São Paulo 1918-2006
1921	<i>Anais da Faculdade de Medicina da Univ. Fed. de Minas Gerais.</i> Belo Horizonte
1926	<i>Anais da Faculdade de Medicina da Universidade de São Paulo.</i> São Paulo
1927	<i>Archivos de Higiene/Higiene.</i> Rio de Janeiro
1929	<i>Anaes/Anais da Academia Brasileira De Ciência.</i> Rio de Janeiro
1933	<i>Revista de Leprologia de São Paulo / Revista Brasileira de Leprologia.</i> São Paulo
1935	<i>Arquivos de Higiene e Saúde Publica.</i> São Paulo
1940	<i>Anais da Faculdade de Medicina da Universidade Federal de Pernambuco.</i> Recife
1940	<i>Anais da Faculdade de Medicina de Porto Alegre.</i> Porto Alegre
1941	<i>Arquivos Mineiros de Leprologia.</i> Belo Horizonte
1941	<i>Boletim do Serviço Nacional De Lepra.</i> Rio de Janeiro
1941	<i>Revista do Instituto Adolfo Lutz.</i> São Paulo
<b>CHILE</b>	
1929	<i>Revista del Instituto Bacteriológico De Chile.</i> Santiago
1945	<i>Boletín Chileno de Parasitologia.</i> Santiago
<b>COLOMBIA</b>	
1926	<i>Revista de la Facultad De Medicina De Bogotá.</i> Bogotá
<b>CUBA</b>	
1908	<i>Vida Nueva.</i> Havana
1909	<i>Sanidad y Beneficencia /Salubridad y Asistencia Social.</i> Havana. Language: SP, EN, FR

continuation...

1935	<i>Revista De Parasitología Clínica y Laboratorio/ Rev. de Med. Trop. y Paras., Bacteriología. Clin. y Lab.</i> Havana
1944	<i>Boletín de la Soc. Cubana de Dermatología y Sifilografía/Revista de Sif., Leprologia y Derm.</i> Havana
1945	<i>Revista Kuba de Med. Trop. y Parasitología/ Rev. Cubana de Med. Trop.</i> Havana: Inst. de Med. Trop. "Pedro Kourí"
<b>ECUADOR</b>	
1943	<i>Revista Ecuatoriana de Higiene y Medicina Tropical.</i> Guayaquil
<b>FRENCH GUIANA</b>	
1940	<i>Publication. Institut Pasteur de la Guyane et du Territoire de L'inini.</i> Cayenne
<b>GUATEMALA</b>	
1929	<i>Boletín Sanitario de Guatemala.</i> Guatemala
<b>MEXICO</b>	
1864	<i>Gaceta Medica de México.</i> Mexico City: Academia Nacional de Medicina de México
1936	<i>Boletín Epidemiológico.</i> Mexico City
1939	<i>Revista de Investigación en Salud Publica.</i> Mexico City: Instituto de Salubridad y Enfermedades Tropicales
1939	<i>Revista del Instituto de Salubridad y Enfermedades Tropicales.</i> Mexico City
<b>PUERTO RICO</b>	
1903	<i>Boletín de la Asociación Medica de Puerto Rico.</i> San Juan
1924	<i>Porto/Puerto Rico Journal of Pub. Health And Trop.Med.</i> New York / (1932-) San Juan: School of Trop Med UPR
<b>VENEZUELA</b>	
1935	<i>Revista de Sanidad Y Asistencia Social / Rev. Venezolana de Sanidad y Asistencia Social.</i> Caracas
1938	<i>Publicaciones de la Division de Malariologia.</i> Caracas

continuation...

UNITED STATES	
1812	<i>New England Journal of Medicine</i> . Boston
1878	<i>Public Health Reports</i> . Washington
1879	<i>Quarterly Cumulative Index Medicus</i> . Chicago: Carnegie Institution
1883	<i>Journal of the American Medical Association</i> . Chicago
1884	<i>Proceedings Of The Entomological Society Of Washington</i> . Washington
1891	<i>Johns Hopkins Medical Journal</i> . Baltimore
1904	<i>Proceedings of the Society for Experimental Biology and Medicine</i> . New York
1906	<i>Report of the Department of Health of the Isthmian Canal Commission</i> . Washington
1911	<i>American Journal of Public Health</i> . New York
1914	<i>Journal of Parasitology</i> . Lawrence (KS)
1916	<i>Journal of Immunology</i> . Baltimore
1921	<i>American Journal of Tropical Medicine and Hygiene</i> . Baltimore
1934	<i>Proceedings of the Helminthological Society Of Washington / Journal Of...</i> Washington
REGION: AFRICA	
ANGOLA	
1921	<i>Revista Medica de Angola</i> . Lisboa
CONGO	
1924	<i>Bulletin Medical du Katanga</i> . Elisabethville(Lubumbashi)
1940	<i>Bulletin du Centre D'étude des Problèmes Sociaux Indigènes /(1958-) Problèmes Sociaux Zairois</i> . Lubumbashi
EGYPT	
1917	<i>Journal of the (Royal) Egyptian Medical Association</i> . Cairo. Language: EN, AR, FR
1925	<i>Journal of the Egyptian Public Health Association</i> . Cairo



continuation...

KENYA	
1924	<i>Kenya Medical Journal/(1927-) Kenya And East African Med. Journal/ (1933-) E. Afr.Med. Journal.</i> Nairobi
MADAGASCAR	
1932	<i>Archives de L'institut Pasteur de Madagascar.</i> Tananarive 1935-1953; 1955-1993,23-60
MOROCCO	
1932	<i>Archives de l'Institut Pasteur du Maroc.</i> Casablanca
1941	<i>Bulletin de l'Institut d'Hygiène du Maroc.</i> Rabat
NIGERIA	
1927	<i>West African Medical Journal.</i> Lagos
SOUTH AFRICA	
1913	<i>Publications of the South African Institute for Medical Research.</i> Johannesburg
1926	<i>South African Medical Journal/ Suid-Afrikaanse Tydskrif Vir Geneeskunde.</i> Cape Town; Language: EN, AF
1935	<i>South African Journal of Med. Sciences.</i> Johannesburg 1964-1976,29-41; Language: English
1939	<i>Journal of the Entomological Society of Southern Africa.</i> Pretoria
TUNISIA	
1906	<i>Archives de l'Institut Pasteur de Tunis.</i> Tunis
REGION: ASIA/OCEANIA	
AUSTRALIA	
1913	<i>Collected Papers - Australian Institute of Tropical Medicine.</i> Townsville

continuation...

<b>CHINA</b>	
1908	<i>Chinese Medical Journal</i> . Beijing
<b>INDIA</b>	
1880	<i>Indian Medical Record</i> . Calcutta
1884	<i>Scientific Memoirs by Medical Officers of the Army of India</i> . Calcutta
1902	<i>Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Gov. of India</i> . Calcutta
1910	<i>Paludism</i> . Simla
1928	<i>Leprosy in India/ Indian Journal of Leprosy</i> . New Delhi
1938	<i>Journal of the Malaria Institute of India/ Indian Journal of Malariology</i> . Calcutta
<b>IRAN</b>	
1939	<i>Archives de l'Institut d'Hessarek / Archives De L'institute Razi</i> . Teheran. Language: EN, FR
<b>JAPAN</b>	
1931	<i>Japanese Journal of Leprosy</i> . Tokyo
<b>LEBANON</b>	
1943	<i>Revue Medicale du Moyen-Orient</i> . Beirut
<b>MALAYSIA</b>	
1934	<i>Bulletin from the Inst. for Med. Research Fed. Malay States/ (1949-) Malaysia</i> Kuala Lumpur. Language: EN
<b>PHILIPPINES</b>	
1906	<i>Philippine Journal of Science: Section B. Tropical Medicine</i> . Manila. Language: EN
<b>VIETNAM</b>	

continuation...

1909	<i>Bull. de la Soc. Medico-Chirurgicale de l'Indochine. / (1938-) Revue Med. Française d'Extrême-Orient.</i> Hanoi
1925	<i>Archives des Instituts Pasteur de l'Indochine.</i> Saigon
1935	<i>Annales de l'Ecole Supérieure de Médecine et de Pharmacie de l'Indochine / Travaux de...</i> Hanoi
<b>REGION: EUROPE</b>	
<b>BELGIUM</b>	
1882	<i>Jour. des Sciences Méd.de Louvain / Revue Med. de Louvain.</i> Louvain / (1967-) <i>Louvain Medical.</i> Leuven. FR.
1908	<i>Scalpel/ Le Scalpel et Liège Médical.</i> Bruxelles. Some summaries in DU and EN.
1911	<i>Renseignements de l'Office Colonial.</i> Bruxelles 1911.
1928	<i>Koninklijke Acad.voor Overzeese Wetenschappen / 1938 Mem.Acad. Royale des Sciences D'outre-Mer.</i> Brussels
1930	<i>Bulletin des Seances. Institut Royal Colonial Belge.</i> Brussels
<b>FRANCE</b>	
1743	<i>Mémoires de l'Académie de Chirurgie.</i> Paris
1836	<i>Bulletin de l'Académie Nationale de Médecine / (1911-) Les Mémoires de l'Académie de Médecine.</i> Paris
849	<i>Societe de Biologie. Comptes Rendus des Seances.</i> Paris
1864	<i>Arch.de Méd. Navale / (1890-) Arch.de Méd. Nav.et Colon. / (1910-1945) Arch.de Méd. et de Pharm. Nav.</i> Paris
1887	<i>Annales de l'Institut Pasteur: Journal De Microbiologie.</i> Paris [see special section at the end for affiliate journals]
1893	<i>Médecine Internationale. une revue de "décentralisation scientifique".</i> Paris
1893	<i>Presse Medicale.</i> Paris (1893-1945)
1898	<i>Archives de Parasitologie.</i> Paris
1903	<i>Bulletin de l'Institut Pasteur.</i> Paris
1904	<i>Revue de Medecine et d'Hygiene Tropicales.</i> Paris
1908	<i>Bulletin de la Societe de Pathologie Exotique [et de ses Filiales].</i> Paris

continuation...

1909	<i>Bulletin Mensuel. Office International d'Hygiene Publique. Paris</i>
1924	<i>Bulletin de l'Union Internationale Contre la Tuberculose. Paris 1924-1955.</i>
1929	<i>Archives de l'Institut Prophylactique. Paris</i>
1935	<i>Revue d'Immunologie et de Therapie Antimicrobienne. Paris</i>
1941	<i>Cahiers Santé / Médecine Tropicales /Medecine Et Sante Tropicales. Marseille.</i>
<b>GERMANY</b>	
1831	<i>Zeitschrift für Parasitenkunde Jena / Heidelberg. Language: GR, EN</i>
1895	<i>Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Stuttgart / Jena.</i>
1897	<i>Archiv für Schiffs- und Tropenhygiene. Leipzig</i>
1897	<i>Deutsche Tropenmedizinische Zeitschrift. Leipzig / (1907-) Institut für Schiffs-und Tropenkrankheiten zu Hamburg.</i>
1902	<i>Archiv für Protistenkunde. Jena</i>
1909	<i>Malaria International Archives. Leipzig</i>
1928	<i>Zeitschrift für Parasitenkunde / Parasitologic Research. Berlin. Language: German ; English ; French</i>
<b>ITALY</b>	
1895	<i>Annali Di Medicina Navale E Coloniale / (1960-) Ann.di Med. Nav. e Tropicale. Rome. Some abs. in EN and FR</i>
1909	<i>Malaria e Malattie dei Paesi Caldi. Roma</i>
1917	<i>Bollettino dell'Istituto Sieroterapico Milanese. Milano</i>
1920	<i>Arch. Italiano di Scienze Med. Coloniali/ (1950-) Arc. It.di Scienze Med. Trop.e di Parassitologia. Roma</i>
1922	<i>Rivista di Malariologia. Roma</i>
1926	<i>Indice Bibliografico della Malaria. Roma</i>
1929	<i>Bollettino della Sezione Italiana Societa Internazionale di Microbiologia. Milano</i>
1937	<i>Rivista di Parassitologia. Messina. Language: IT, EN</i>
<b>NETHERLANDS</b>	

continuation...

1937	<i>Bulletin of the Colonial Inst. of Amsterdam / Bulletin van het Koloniaal Inst. te Amsterdam</i>
<b>PORTUGAL</b>	
1905	<i>Arquivos de Higiene e Patologia Exoticas. Lisboa: Instituto de Medicina Tropical. Language: Portuguese. 1905-1926</i>
1907	<i>Archivos do (Real) Instituto Bacteriologico Camara Pestana. Lisboa</i>
<b>RUSSIA</b>	
1928	<i>(Russian title) / Ann. de L'inst. Sci. de Microbiologie et d'Epidémiologie Rostov-sur-Don. Rostov na Donu</i>
1930	<i>Parazitologicheskii Sbornik. Moskow / (1941-) Parazitologicheskii Sbornik. Leningrad</i>
1931	<i>Medicinskaya Parazitologija i Parazitarnye Bolesni. Moskow</i>
<b>SPAIN</b>	
1932	<i>Revista De Sanidad y Higiene Publica / Revista Espanola de Salud Publica. Madrid</i>
1940	<i>Research and Reviews in Parasitology. Barcelona</i>
1943	<i>Medicina Colonial / (1957-) Medicina Tropical. Madrid</i>
1944	<i>Revista De Leprologia Fontilles. Fontilles</i>
<b>SWITZERLAND</b>	
1903	<i>Bull. des Eidgenössischen Gesund. / Bull. Serv. Féd. de l'Hyg. Pub. / Bull. Serv. Fed. dell'Igiene Pub. Geneva</i>
1921	<i>Rapport (Mensuel) Epidemiologique de la Section d'Hygiene du Secretariat. Geneva</i>
1932	<i>Bulletin Trimestriel de l'Organisation d'Hygiene. Genève 1932-1936,1-5</i>
<b>UNITED KINGDOM</b>	
1823	<i>LANCET. London</i>
1834	<i>The Transactions of the Entomological Society of London / (1925-) Journal of Proceedings of...</i>
1849	<i>London Journal Of Medicine / (1853-) British Medical Journal. London</i>

continuation...

1853	<i>Quarterly Journal of Microscopical Science</i> / (1966-) <i>Journal Of Cell Science</i> . London
1888	<i>Journal Of Comparative Pathology And Therapeutics</i> . Edinburgh
1888	<i>Public Health</i> . London
1892	<i>Journal of Pathology and Bacteriology</i> . London
1898	<i>Journal Of Tropical Medicine</i> / (1907-) <i>Journal Of Tropical Medicine And Hygiene</i> . London
1899	<i>Liverpool School Of Tropical Medicine. Memoirs</i> . Liverpool
1907	<i>Annals Of Tropical Medicine And Parasitology / Pathogens And Global Health</i> . London
1907	<i>Proceedings Of The Royal Society Of Medicine/ Journal Of...</i> London
1907	<i>Transactions Of The (Royal) Society Of Tropical Medicine And Hygiene</i> . London
1908	<i>Bulletin of the Sleeping Sickness Bureau</i> . London
1908	<i>Parasitology</i> . London
1910	<i>Bulletin of Entomological Research</i> / (1926-) <i>Bulletin of Hygiene</i> . London
1911	<i>Yellow Fever Bureau Bulletin</i> . Liverpool
1912	<i>Tropical Diseases Bulletin</i> . London
1920	<i>British Journal Of Experimental Pathology</i> . London
1923	<i>Journal Of Helminthology</i> . London: London School of Hygiene and Tropical Medicine.
<b>INSTITUT PASTEUR</b>	
1887	<i>Annales de l'Institut Pasteur: Journal de Microbiologie</i> . Paris
1903	<i>Bulletin de l'Institut Pasteur</i> . Paris
1912	<i>Instituto Pasteur de Porto Alegre. Relatório</i> .
1906	<i>Archives de l'Institut Pasteur de Tunis</i> . Tunis
1921	<i>Arch Inst Past l'Afrique Du Nord</i> . Tunis
1923	<i>Archives de l'Institut Pasteur D'algerie</i>
1925	<i>Archives des Instituts Pasteur de l'Indochine</i> . Saigon
1932	<i>Archives de l'Institut Pasteur de Madagascar</i> . Tananarive
1932	<i>Archives de l'Institut Pasteur du Maroc</i> . Casablanca

conclusion...

1940	<i>Archives de l'Institut Pasteur de la Guyane Francaise et de l'Inini. Cayenne</i>
<b>INTERNATIONAL ORGANIZATIONS</b>	
1921	<i>Epid. Report Health Section of The Secretariat/ Rapport Epid. de la Section d'Hygiene du Sec.. Geneva (League of Nations)</i>
1920	<i>International journal of public health /Revue Internationale d'Hygiene Publique. Geneva (Red Cross)</i>
1932	<i>Bulletin Trimestriel de l'Organisation d'Hygiene. Geneva (League of Nations)</i>
1939	<i>Revue CIBA. Basel</i>

## APPENDIX H -BULLETIN OF THE WORLD HEALTH ORGANIZATION LANGUAGE POLICY 1948-2014

This table details the paratext and pertinent notes from the years examined in Table 3.10 (1948-1999) and continuing until 2014. Only years in which a change was observed have been included. The paratext indicates that what has been archived at [www.nih.gov](http://www.nih.gov) and [www.who.int](http://www.who.int) is not a complete record of the various versions of this journal: e.g. see notes from 1948, 1949 (French) and 1990 (Russian, as well as Chinese and Arabic). Data obtained from the US National Library of Medicine/National Institutes of Health website<sup>234</sup> and *Bulletin* site<sup>235</sup> and archive.org<sup>236</sup>

continued...

YEAR[v ol]	<i>BULLETIN OF THE WORLD HEALTH ORGANIZATION</i> PARATEXT, LANGUAGE DATA AND NOTES
1948[1]	All English only
	“...the many tasks assigned to the World Health Organization by the International Conference which was <b>convened at New York</b> on 19 June 1946 by the Economic and Social Council of the United Nations to lay the foundations for a single international health organization.” Anonymous Editorial 1948 1(1):5 (Emphasis added). Dual address on front cover New York/Geneva, while in the title page it is only Geneva. Advertisement for parallel WHO publications in various languages (see Figure 1, below).
1949[2]	All English only.
	“The Bulletin of the World Health Organization, <b>published quarterly in separate editions in English and in French</b> , is the principal scientific organ of WHO, and is a successor to the <i>Bulletin Mensuel de l'Office International d'Hygiène Publique</i> and the <i>Bulletin of the Health Organization of the League of Nations</i> . [...] Orders and subscriptions should be sent to the booksellers listed on the back cover or direct to: World Health Organization, Sales Section, Palais des Nations, Geneva, Switzerland.” Front matter 2(1) (Emphasis added). Address on cover is Geneva only.
1950[3]	English only cover and table of contents; Bilingual (i.e. English/French) bibliography section.

<sup>234</sup><http://www.ncbi.nlm.nih.gov/pmc/journals/522/> Last accessed on 30 June 2016

<sup>235</sup><http://www.who.int/bulletin/volumes/en/> Last accessed on 30 June 2016

<sup>236</sup><https://web.archive.org/web/20030619165240/http://www.who.int/bulletin/contributors/submit/en/> Last accessed on 30 June 2016



continuation...

1951[4]	All bilingual. Novelties: advertisement for monograph series and a full page two-column mission statement (see Figure 2, below).
1953[8]	All bilingual. Novelties: First mention of printing location (always in English only), "Switzerland". Final two-column mission statement.
1954[10]	All bilingual. New consecutive mission statement (English then French) begins, remaining in this format until 1977.
1957[16]	All bilingual except for an English-only monograph advertisement.
1959[20]	All bilingual except for first appearance of Instructions to Authors (in French only)
	"Directives pour les Auteurs 1. Les articles seront rediges en franqais, en anglais ou en espagnol; s'il s'agit de traduction d'articles ecrits en une autre langue, une copie du texte original sera jointe [...]" Instructions to Authors 1959(20)1
1960[22]	All bilingual, including Instructions to Authors
1975[52]	All bilingual except for new (extensive) French-only Instructions to Authors
1978[55]	All bilingual. Henceforth no mission statement.
1979[56]	All bilingual. New printing location: "England".
1980[58]	All bilingual, including two-column editorial, except English-only Instructions to Authors
1990[68]	All bilingual except English-only Instructions to Authors and ad for parallel publication. New printing location: "Belgium"
	"A complete translation of the Bulletin into Russian is also published. Selected articles are translated into Arabic and Chinese." Front matter 1990(68)1
1995[73]	All English only, except bilingual cover, table of contents and copyright statement. New statement: "Typeset in France Printed in Belgium" under ISSN number
1998[76]	All English only, except bilingual cover, copyright statement and sales information "Directions to Authors 1. Papers should be written in English or French. As far as possible, the number of authors of any article should not exceed five [...]" Instructions to Authors 1998(76)1

conclusion...

1999[77]	Henceforth, only online format available on <i>Bulletin</i> site and NIH – i.e. no scans, no paratext. French then Spanish abstract appear after the end of the text and before the references.
	Parallel French and Spanish digests begin (e.g. <a href="http://www.who.int/docstore/bulletin/digests/french/resume.html">http://www.who.int/docstore/bulletin/digests/french/resume.html</a> ): “ <b>Recueil</b> d'articles No.1, 1999 <b>Choix</b> d'articles publiés en anglais dans Bulletin of the World Health Organization, 1999, 77 (1-6)” (Emphasis added). This digest of issues 1-6 included only 32 items, which was considerably less than the number of items in the English issues (approximately 100 items)
2001[79]	French and Spanish Keywords are supplied under the headlining English abstract
2002[80]	Final separate French and Spanish digests at the end of this year
2003[81]	Earliest snapshot of the <i>Bulletin</i> site in the Internet Archives. Site offers text in English, Spanish or French. ( <a href="https://web.archive.org/web/20030608061232/http://www.who.int/bulletin/en/">https://web.archive.org/web/20030608061232/http://www.who.int/bulletin/en/</a> )
	From ‘Guidelines for Authors’ pdf obtained at the address above: “2.3 Languages. Papers should be submitted in English. The Bulletin is published in English; the abstracts and keywords of main articles will be translated into French and Spanish. Authors who have difficulty in preparing their manuscript in English should contact the editorial office for advice; 2.8 Abstracts. The abstract, which should not exceed 250 words, is printed at beginning of the paper in English and is translated into French and Spanish for publication at the end of the article; 2.10 Bibliographic references.[...]– titles of articles not in English are followed by a translation in square brackets; the reference is followed by “In [original language]”.
2004[82]	Arabic abstracts and Keywords begin (after French and Spanish keywords/abstracts); separate weblinks for documents with Arabic
2005[83]	Beginning on May 6 2005, site text options are expanded to include Arabic, Chinese, English, French, Russian and Spanish (i.e. the six official languages of the United Nations), alphabetically according to English name (see Figure 3, below).
2007[85]	Henceforth keywords eliminated and no separate documents with Arabic text
2011[89]	Chinese and Russian abstracts begin, bringing the total to six abstracts for each article (all – except English – still positioned after the article before the references)

APPENDIX I. - *MEMÓRIAS* DIACHRONIC EDITORIAL POLICY ORIGINALS

1909

**AVIZO** As «MEMORIAS» serão publicadas em fascículos, que não aparecerão em datas fixas e que formarão volumes de mais ou menos 200 páginas. No mínimo, aparecerá um volume por ano.

Na parte escrita em portuguez foi adotada a grafia aconselhada pela Academia de Letras do Rio de Janeiro.

Toda correspondencia relativa ás «MEMORIAS» deverá ser dirigida ao “Diretor do Instituto Oswaldo Cruz - Caixa postal 926 - Manguinhos - Rio de Janeiro”.

**AVIS** Les «MEMOIRES» seront publiés par fascicules qui ne paraîtront pas en époques déterminées et qui formeront des volumes d'à peu près 200 pages. Il paraîtra chaque année, au moins, un volume.

La partie portugaise est écrite selon la graphie adoptée par l'Académie de Lettres de Rio de Janeiro.

Toute correspondance doit être adressée au “Directeur de l'Institut Oswaldo Cruz - Caisse postale 926 - Manguinhos - Rio de Janeiro”.

1923

**AS MEMORIAS**, órgão oficial e exclusivamente realizados.

Apparecerão em fascículos, sem data fixa.

Toda a correspondencia deverá ser dirigida ao “Diretor do Instituto Oswaldo Cruz - Caixa postal 926 - Manguinhos”.

1952

As MEMÓRIAS, editadas pela diretoria e pelo corpo de pesquisadores do Instituto Oswaldo Cruz, destinam-se precipuamente à publicação de trabalhos realizados nessa instituição.

Além das MEMÓRIAS, são publicações oficiais do Instituto Oswaldo Cruz a série de MONOGRAFIAS e o boletim intitulado MANGUINHOS.

Toda a correspondência deverá ser dirigida à

REDAÇÃO DAS MEMÓRIAS DO INSTITUTO OSWALDO CRUZ  
CAIXA POSTAL 926  
ENDEREÇO TELEGRÁFICO: "MANGUINHOS"  
RIO DE JANEIRO. D. F. - BRASIL

N. B.—Com este volume termina a gestão do Dr. H. C. de Souza-Araújo, que, de Janeiro de 1941 a Março 1952 editou 15 tomos das Memórias (do N.º 36 ao N.º 50).

S. A.

1957

As MEMÓRIAS, órgão oficial do Instituto Oswaldo Cruz destinam-se, precipuamente, à publicação de trabalhos originais nêles realizados. Aparecerão em fascículos distintos, ou em tomo completo, conforme as conveniências editorais.

Tôda correspondência deverá ser dirigida à:

MEMÓRIAS DO INSTITUTO OSWALDO CRUZ  
CAIXA POSTAL, 926 — ENDERÊÇO TELEGRÁFICO: "MANGUINHOS" RIO  
RIO DE JANEIRO — BRASIL

1959

[404- source file misplaced- will find for final draft]

## APPENDIX J - LIST OF INTERNET DOMAIN ABBREVIATIONS

<a href="#"><u>.ac</u></a>	 <a href="#"><u>Ascension Island</u></a>	<a href="#"><u>.bh</u></a>	 <a href="#"><u>Bahrain</u></a>
<a href="#"><u>.ad</u></a>	 <a href="#"><u>Andorra</u></a>		
<a href="#"><u>.ae</u></a>	 <a href="#"><u>United Arab Emirates</u></a>	<a href="#"><u>.bi</u></a>	 <a href="#"><u>Burundi</u></a>
<a href="#"><u>.af</u></a>	 <a href="#"><u>Afghanistan</u></a>	<a href="#"><u>.bj</u></a>	 <a href="#"><u>Benin</u></a>
<a href="#"><u>.ag</u></a>	 <a href="#"><u>Antigua and Barbuda</u></a>	<a href="#"><u>.bm</u></a>	 <a href="#"><u>Bermuda</u></a>
<a href="#"><u>.ai</u></a>	 <a href="#"><u>Anguilla</u></a>	<a href="#"><u>.bn</u></a>	 <a href="#"><u>Brunei</u></a>
<a href="#"><u>.al</u></a>	 <a href="#"><u>Albania</u></a>	<a href="#"><u>.bo</u></a>	 <a href="#"><u>Bolivia</u></a>
<a href="#"><u>.am</u></a>	 <a href="#"><u>Armenia</u></a>	<a href="#"><u>.bq</u></a>	 <a href="#"><u>Bonaire</u></a>
<a href="#"><u>.an</u></a>	 <a href="#"><u>Netherlands Antilles</u></a>	<a href="#"><u>.br</u></a>	 <a href="#"><u>Brazil</u></a>
<a href="#"><u>.ao</u></a>	 <a href="#"><u>Angola</u></a>	<a href="#"><u>.bs</u></a>	 <a href="#"><u>Bahamas</u></a>
<a href="#"><u>.aq</u></a>	 <a href="#"><u>Antarctica</u></a>	<a href="#"><u>.bt</u></a>	 <a href="#"><u>Bhutan</u></a>
<a href="#"><u>.ar</u></a>	 <a href="#"><u>Argentina</u></a>	<a href="#"><u>.bv</u></a>	 <a href="#"><u>Bouvet Island</u></a>
<a href="#"><u>.as</u></a>	 <a href="#"><u>American Samoa</u></a>	<a href="#"><u>.bw</u></a>	 <a href="#"><u>Botswana</u></a>
<a href="#"><u>.at</u></a>	 <a href="#"><u>Austria</u></a>	<a href="#"><u>.by</u></a>	 <a href="#"><u>Belarus</u></a>
<a href="#"><u>.au</u></a>	 <a href="#"><u>Australia</u></a>	<a href="#"><u>.bz</u></a>	 <a href="#"><u>Belize</u></a>
<a href="#"><u>.aw</u></a>	 <a href="#"><u>Aruba</u></a>	<a href="#"><u>.ca</u></a>	 <a href="#"><u>Canada</u></a>
<a href="#"><u>.ax</u></a>	 <a href="#"><u>Åland</u></a>	<a href="#"><u>.cc</u></a>	 <a href="#"><u>Cocos (Keeling) Islands</u></a>
<a href="#"><u>.az</u></a>	 <a href="#"><u>Azerbaijan</u></a>	<a href="#"><u>.cd</u></a>	 <a href="#"><u>Democratic Republic of the Congo</u></a>
<a href="#"><u>.ba</u></a>	 <a href="#"><u>Bosnia and Herzegovina</u></a>	<a href="#"><u>.cf</u></a>	 <a href="#"><u>Central African Republic</u></a>
<a href="#"><u>.bb</u></a>	 <a href="#"><u>Barbados</u></a>	<a href="#"><u>.cg</u></a>	 <a href="#"><u>Republic of the Congo</u></a>
<a href="#"><u>.bd</u></a>	 <a href="#"><u>Bangladesh</u></a>		
<a href="#"><u>.be</u></a>	 <a href="#"><u>Belgium</u></a>		
<a href="#"><u>.bf</u></a>	 <a href="#"><u>Burkina Faso</u></a>		
<a href="#"><u>.bg</u></a>	 <a href="#"><u>Bulgaria</u></a>		

<a href="#"><u>.ch</u></a>		<a href="#"><u>Switzerland</u></a>	<a href="#"><u>.fk</u></a>		<a href="#"><u>Falkland Islands</u></a>
<a href="#"><u>.ci</u></a>		<a href="#"><u>Côte d'Ivoire</u></a>	<a href="#"><u>.fm</u></a>		<a href="#"><u>Federated States of Micronesia</u></a>
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