My Conversation with the Open Notes Podcast

Marilia Coutinho Interview – 12/13/25

UITAC - Open Notes Podcast

I recently sat down with UITAC for an interview spanning biology, powerlifting, and the sociology of science. Below is the full script, including the sections on evolutionary mismatch and gym ethnography that provide the necessary context for the video highlights.

Uploaded to YouTube on April 22, 2026

- Ask the Expert: Knowledge Broker
- Ask the Expert: Interdisciplinary Sociologist

Ask the Expert Section

What specific training or certifications do you have in this area?

- I have a bachelor's degree in Biology, special training in biochemistry and molecular biology, a Master's Degree in Ecology and a Ph.D. in the sociology of science and technology.
- My areas of expertise, whether by graduate training or experience, are the sociology of science, technology and medicine, or science studies, and the sociology of sport.
- Both are interdisciplinary and potentially cross and transdisciplinary domains.
- Both are active in the knowledge broker/boundary spanner role I play when using the skills codified under these disciplines

- There is an ongoing debate about knowledge brokering certification, and I stand in stark opposition to it.
- There is no certification for the sociologies of sci-tech or sport, that I know of, and there wouldn't be a commercial incentive to establish one. It would also be innocuous because the "market protection" that certifications claim to provide are unenforceable in such academic domains.
- My training for the sociology of scitechmed is my Ph.D. and my extensive work both in academic research, where I was the Principal Investigator for a couple of multi-team projects, and consulting for government agencies and designing tech-transfer agencies
- I have a few extra training experiences with the MIT tech transfer division, given to a group of Brazilian technical people involved in the implementation of the new technology innovation legal framework, in the early 2000s.
- My training for the sociology of sport consists of the many interventions I was called to do in fitness or sport organizations that required analyzing the sociological determinants, and the research I conducted on several topics such as sectarianism, identity and suicide, and space representation and occupation.

What are the biggest challenges you face in your field?

- On all three domains I specified - sociology of scitechmed, sociology of sport, and knowledge brokering, the challenges are related to figuring out and defending a social role for the specialty/activity.
- Institutionalization means many things, but primarily it means creating a consensus about the importance of that activity, its "esoteric" nature (done by experts who share analytical and methodological tools that outsiders lack), and the need to provide the means for those qualified practitioners to promote the activity in society. This can mean creating the institutional structure of science itself in a "virgin" environment (there is no such thing except in ideal form), or it can mean specifying an attribution of pre-established disciplines.
- This reflects a certain stage in the institutionalization of any professional practice in which the pioneering actors negotiate the *status of the field* (negotiating a role for science) in society at large. This happened to all the sciences, to science itself as an enterprise in different national contexts ("what is science (or X specialty) for? Why should we have science? Who does science?")
- Institutionalization should not artificially precede social understanding of the specialty's importance, otherwise it turns into a sterile and greedy debate about who gets to do something that is not even clearly useful to society. Enclosing sub-specialties in such certification

straightjackets just sterilizes their development. I think that's a challenge: resisting the American certification model, always trying to grow roots in other countries.

- At the current stage, I think the challenge is to educate society as to the needs and benefits of knowledge brokering/boundary spanning (at all levels), and of using the social sciences to solve the social problems (or the social dimension of problems) in science, technology, medicine and sport, by offering actual solutions.

What are some common misconceptions about [social research] that people outside your field have?

- I think it's mostly a surprise for the lay people: what is sociology of science? Or sport? Or innovation? Or, even more, what is knowledge brokering?
- "It's all mambo-jambo": that's a sad but unfortunately common misconception with, also unfortunately, roots in reality. There is a lot of the cultural studies research that in fact abused the post-modernist rhetoric, fueling strong reactions such as the "Sokal Affair". The response to this is to do useful work under these specialties and slowly change the prejudiced assumption.
- "It's interesting but not practical" - same thing

What are the typical tasks and responsibilities of someone in this role?

Knowledge brokers are people with multidisciplinary backgrounds who translate research and complex information into actionable, context-specific insights, enabling evidence-based decision-making and innovation. They do this as they build networks, manage partnerships, identify and evaluate information, and develop users' capacity to use new knowledge.

Knowledge brokers play many key roles, such as liaison and facilitation activities (building and managing relationships and networks), knowledge management and translation (such as translating primary research data into actionable solutions), capacity building (creating educational and training projects for the client organization), and Boundary Spanning and Collaboration (sparking innovative solutions at the intersection of disciplines and other knowledge practices).

I never did and am probably not of great assistance in facilitation activities or managing relationships. My focus is in translating expert knowledge into solutions for my clients.

There are no clear roles for the sociology specialties: of sci/tech/med or sport.

What are the pros and cons of this career path?

- Big PRO: it's not formalized or institutionalized, it's more "fully" sociological for that reason.
- Big CON: it's not formalized or institutionalized, so being hired and establishing oneself professionally demand much more "creativity", networking and luck.

What are some of the less obvious aspects of this job that people should be aware of?

- Success is almost absolutely uncertain. There is no way to predict whether more young sociologists will be attracted to it. New blood could exert pressure into:
    - Creating a professional identity, whether formalized or not
    - Promoting themselves as legitimate problem solvers for a class of problems
- If young sociologists are not attracted, the problems won't go away, but they will be solved by other professionals such as economists or psychologists
- If you are not hired by a university, it almost certainly means solopreneurship, which carries its own burdens of incertitude, unpredictability and financial instability

How does one transition from a more general role to this specific area of expertise?

- At this point, almost certainly by luck or necessity
- Either the person sees a class of problems that attracts them and follows the breadcrumbs into different knowledge and practice specialties
- Or the problems knock on their generic door and they are forced to learn how to solve them

Interview questions

Introduction:

Welcome to the Open Notes podcast! Our study group includes me, Nora Mortimer, Kiana Gerhart [pause], and Angela Thompson [pause]. Our guest today is Marilia Coutinho, a social scientist and a powerlifting world champion. Grab a snack and your notebook; let's get ready to study!

General Questions

Can you introduce yourself?

My name is Marilia Coutinho and today I do consultancy work under the "knowledge brokering/boundary spanning" category, using my multi-disciplinary background to analyze complex wicked situations, translate the available technical "esoteric" expertise to the client, offer possible approaches/solutions, and facilitate the adoption of the ultimate adequate solutions for their problem.

My educational background involves biology, biochemistry, ecology, and sociology (some linguistics and also philosophy). My degrees are: BS in biology, MS in ecology (with a thesis on chemical ecology), Ph.D. in sociology (with a dissertation in the sociology of science and technology).

I spent many years in academia, where I was a Principal Investigator in science policy research (science, technology and innovation policy), and I also worked on public health projects under the WHO-PAHO umbrella.

I worked on my postdoc in Virginia Tech and later was a visiting scholar at the Un. of Florida, where I taught the History and Sociology of Latin American Science and Technology.

After 2005, inspired by what I learned as I elaborated the information management project for BIREME under the larger Global Strategy on Diet, Physical Activity and Health and by my own just initiated competitive track in Powerlifting, my professional life geared towards sports and exercise science and the fitness industry. I consulted for the supplement industry, for the sports compounding pharmacy sector, for the gym industry, I wrote and helped edit one of the first and most popular strength training magazines in Brazil and I was a sports organizer, international judge and athlete. That provided me with a lot of research material!

Where did you grow up, and how did that affect who you became?

I grew up in Sao Paulo, Brazil, and throughout my life I had several comings and goings from Brazil to the US. I spent a year with my parents in Athens, GA, when I was 10 yrs old and my father was a visiting professor at the UG.

My mother never worked, but considered herself "science adjacent" and was an enthusiast of my academic career. My father was a professor at the Institute of Geosciences, department of Geology of the University of São Paulo, of which he was one of the founders. Before then, Geology research and teaching happened under "Natural History" at the USP, as in many European Universities.

My scientific/academic lineage as well as my political leaning, mostly marxist, directly explain my intellectual trajectory and professional life until 2005. We can later define what "mostly marxist" means to me, but it basically involves accommodating different models for specific "sociologies" while still relying on the marxian framework (as well as webberian, and durkheimian).

- I went to school to study biology;
- I focused on a scientific object of high symbolic and political value for the country, Chagas disease;
- As that route was cut short, I shifted to ecology, where I studied a regional biome (the Cerrado), and a regional animal (that leaf cutting ant, an agricultural problem) in my MS thesis work;
- I moved on to sociology, where I conducted research in the science/politics/policy interface in Ecology/Environmental debate culminating in Rio in 1992 - I defended my dissertation in 1994.
- After my doctorate, I studied the history and sociology of the Brazilian tropical medicine tradition, and then bioprospection, biopiracy and intellectual property rights in Amazonia.
- Then I became ill, opted out of tenure track academia, but remained "academia-adjacent" for a long time. Probably until now, who knows.

In 2005 I dropped out of academia and into a confusing version of solopreneurship with the activities I described before, but "who I became" was intellectually ready then.

What happened after that was a very different journey into forms of existing in society that I was not trained for, and where my "inadequacies" (my autism) became evident and actually explained ultimately why I did drop out. Since then, my professional life has been anything but boring, I created a lot, wrote and published a lot, taught a lot, in many different teaching formats, and learned much more than I could have hoped to learn had I stayed in academia, in any of the positions I was considering then. It hasn't been comfortable, either: it has been financially a bumpy ride.

How much my place of origin and upbringing explain this second part of "who I became" is a much more convoluted and indirect story, since neither of my parents has ever been focused on sports or exercise. Or health, for that matter.

Can you explain the timeline of your athletic career and educational career?

Origin - Science, scientific materialism and politics

1975 - 78 - competitive fencer, one of the few periods of social/emotional stability

1978 - 80 - “quasi” professional left wing militancy and organization activity

1981 - 85 - college, “biology program/track”

1986 - 89 - MS ecology (chemical ecology)

1989 - 91 - I had a baby and started a Ph.D. program in sociology

The Social Studies of Science period (1994 - 2004)

1991 - 94 - Ph.D., as well as teaching and conducting non-Ph.D. related research

1996 - 01 - Postdoc at Virginia Tech, return to the Un. of Brasilia, in Brasilia, to teach, then visiting scholar position at Un. Florida: the US-intense period

2001 - 04 - another postdoctoral position, at the University of Sao Paulo (USP) this time with a full set of benefits including travel grants, scholarships for student-assistants, and funding for my research itself

2004 - the BIREME project under the Global Strategy

The Sport / Integrative Health / Fitness-Wellness Industry Period

2005 - 15 - powerlifting and the fitness industry

2006 - 07 - Paraisopolis Power

2012 - the five lift course, my time with crossfit

2013 - 15 - MAD Powerlifting

Now: knowledge brokering in Health, Wellness and Fitness

2015 - now - various projects, many writing projects, and recently, the medical marijuana industry

I think each stage is separated from the next by an unplanned, dramatic, often destructive transition where institutional ties are broken and social networks are disrupted.

I think I moved on to the next cycle with all the tools learned during the ending cycle and none of the results of my work, including publishing work done, which I mostly abandoned. I quite literally *moved*

on, which is very, very stupid: if you don't claim what you have built, there is something unfinished always pulling you back.

Because of this, sometimes the different decades felt disconnected, as if they were lived by 3 different people. Today, as I work on structuring my consultancy, I can finally see that they are all connected and additive.

What was your educational path, and how did it lead you to this line of work?

See previous item.

How is the educational system different in Brazil and the U.S.?

The main differences between U.S. and Brazilian higher education involve access (exams vs. holistic review), structure (flexible majors/electives vs. fixed curricula), focus (breadth/liberal arts vs. early specialization), funding (more private/expensive US vs. strong public/free Brazil), and outcomes (graduation rates/equity), with studies showing Brazil's system faces challenges with high dropout rates, but its strong public universities excel in research, while the U.S. emphasizes broader skills and access through diverse landscape of high-prestige private and large state-funded public institutions, but with tuitions still paid by students.

What do you like most about your work?

Research, puzzle solving.

What is the most challenging aspect of your career?

The fact that acknowledging the strategic and epistemological value of multi, cross and transdisciplinarity remains lip service;

Managing the inter-personal aspects of any institutional arrangement: government or private employee or solopreneur. It's always difficult because of my communication dissonance.

Specific Questions

You have an extensive research background and powerlifting background. How do each of these feed one another?

- Health
- Knowledge Integration
- Unanswered questions in human physiology and neurology

As an athlete and educator, is the process of finding motivation similar?

No: I would compare the athlete to the disciple/learner/researcher and the coach to the educator.

- There are both intrinsic and extrinsic motivators in both.
- The extrinsic motivator both come from a community shared set of values.
- The intrinsic motivation has parallels as well, as both pairs reflect pleasure and satisfaction about:
    - Breaking limits (knowing the unknown, exceeding a previous capacity)
    - Doing whatever is the core of the practice (studying, lifting, doing experiments, observing phenomena under study)
    - Surrendering to it
    - Transmitting knowledge, the interaction where knowledge transmission happens

How has your training philosophy evolved over the years, especially after competing at an elite level?

- It has changed more in the beginning than now
- It has become more comprehensive, less committed to specific methods, more open and more skeptical
- I came to believe that training a disrupted organism, such as mine, as a chronic illness patient, is much harder than training a competitive athlete

How has the culture of powerlifting changed over the past decade?

That's what I'm trying to determine, since the importance of powerlifting increased not only in absolute, self-referenced terms, but also relative to strength sports in general, and to the fitness industry.

The culture is an expression of a certain community, related to a certain body of practices or industry. The changes in the PL community in the past 10 years can be summed up as:

- A much bigger talent pool (more than one order of magnitude) reached at almost exponential rates
- An even faster/more significant growth of the female talent pool, which still remains smaller than the male
- A significant increase in the standards, from local to international elite, with an impressive increase in world records in the open class, both male and female
- An even more intense organizational diversification, with the immense majority of world records broken at non-IPF (the first, major, but also controversial federation) events
- Changes in dominant body types, from a bulkier, "weirder", "scary", fringe aesthetic to something much more mainstream

I haven't been in any competition for years, and I am just now coming back to interacting with this community, and what I can say at a first glance is that:

- It is much more professionally coached, organized, sanctioned and practiced
- Athletes come from a wider social, professional and cultural base
- Athletes seem more educated, as well as coaches
- There is much more academic research done on powerlifting, parallel to the growth also observed on crossfit and weightlifting. This seems, but I am not sure, to reflect/influence the technical level of the coaching debate

Looking back on your competitive career, what achievement means the most to you, and why?

It was an event called RUM: Raw Unity Meet, that took place in Florida, in 2015. It was, as the name indicates, a competition for lifters not employing supportive gear. It was very meaningful to me for being a comeback from a serious illness called spondylodiscitis in November-December 2013. Spondylodiscities is a spinal infection with potentially horrible outcomes. Some predicted I'd never walk again, others that I would never lift again, and I did both. It was not easy. Two of my vertebrae were destroyed by bacteria and fused. But I came back, won my class and also the best lifter award. I won over the disease, and that is really important as it empowered me to face other difficult issues, such as my current chronic pain condition.

Are there misconceptions about strength or sport you wish more people understood?

- That strength, power and conditioning are absolutely not optional and not developing these intrinsic abilities we incur in evolutionary mismatch, which is ultimately the cause of the rise in non-transmitable and degenerative diseases.
- That being human and especially aging as a human implies all three: strength, power and conditioning
- On the importance of strength and movement on health, from daily functionality, to locomotory competence, to osteoporosis and other metabolic functions, and to mental wellbeing: the misconception is that its importance is greatly underestimated
- That sport is more than "just a hobby", and represents a major social activity with protective effects against many social and psychosocial pathologies
- On strength and sex

What was the most challenging moment in your career, and what did it teach you?

I think I'd rather not go there, but I will say something to the young soon-to-be-sociologists who might watch this: they were all situations where, in the confusion and the stress of inter-personal "games", I consistently made the wrong choices. It taught me that someone with my shortcomings needs mentors who are more socially capable.

You have researched wrist wraps and their importance in support and mobility to prevent injuries. What inspired this research?

- APT sponsorship
- My hypermobility

What other equipment do you think should be researched to keep athletes safe?

PL support gear in general could be much more researched with benefits not only to the understanding of a biomechanical phenomenon, but maybe in the development of injury prevention and treatment devices: the squat/dl suits, the cross-chest elastic bands like Bench Daddy and Sling shot, the lifting suits and certainly the belt.

Moving onto your research areas, one of the major topics that is present in your work is the zoonotic illness, Chagas' disease. Can you explain what Chagas' disease is and how it spreads?

Chagas Disease is a tropical disease that evolved from a zoonosis, with several mammalian hosts, to a human disease in the 19th and 20th century, probably because of the construction of railroads connecting regions in the South cone that had been previously isolated.

It was discovered in 1909 by Carlos Chagas, a Brazilian physician and scientist. It is a parasitic infection caused by the protozoan Trypanosoma cruzi, and it is still primarily a concern in Latin America, but an estimated 300,000 or more people in the U.S. are infected, mostly through immigration.

The primary method of transmission in endemic areas is through the feces of infected, blood-sucking triatomine bugs, commonly called "kissing bugs" because they often bite the face. The parasite enters the body when a person unknowingly rubs the bug's feces into the bite wound, eyes, or mouth.

Chagas disease has two phases, which often go undiagnosed for years or decades because symptoms are initially mild or absent. There is an initial **Acute Phase, which** lasts a few weeks to months. Symptoms, if present, can resemble a mild febrile illness (fever, body aches, fatigue). A rare but characteristic sign at the site of infection is a purplish swelling of one eyelid (Romaña's sign) or a skin lesion (chagoma). After that, there is the long **Chronic Phase, in which** the parasite hides in the heart and digestive muscles. While most infected people remain asymptomatic for life, about 20-30% eventually develop serious, life-threatening cardiac or gastrointestinal complications.

What drew you to that topic?

- An area of excellence in Brazilian basic and applied medical research (the phenomenon of the "special object")
- The fact that its discovery is unique in the whole of the history of medicine
- The fact that, during the peak of Tropical Medicine prestige, when it was the most well funded of research entreprises, this unique discovery was done by a Brazilian physician
- It is a disease of poverty and a reflex of social disparity at different levels

Do you find that it impacts certain demographics more so than others? (medical disparity)

- It is a disease of poverty

- It is a disease of the rural area

Can you dive into your work with institutional technology transfer agencies?

I designed two tech transfer agencies: one for the USP and one, called AGIF, for the SP funding agency FAPESP.

- At the time, most of us were naive about IP since Brazil hadn't been a signatory of the TRIPS agreement
- We were catching up and learning with "central" countries, which was why they brought the MIT tech transfer team to teach us
- The main issue happening at the time was the risk of Amazonian bioprospection. I think it was a moment of inflection, when the pharmaceutical industry gave up betting on automatic synthesis and screening as a viable drug discovery route, and were returning to good old bioprospection and its sister, cultural appropriation and natural resource theft.
- I interacted with a lot of great researchers trying to guess the applicability of their discoveries, I helped some deciding about their patenting, or, in other sad cases, I did the research for the scientist and found out that the "global-northern" "partner" had stolen his work and entered a patent application without his name.
- My tech transfer structures were kind of adopted, but I found out years later that they were dropped.
- All in all, I felt that my chance of making significant impact in the right direction was very limited. Of course, all these negative experiences/perceptions compounded with a difficult personal and health context. That's when I dropped out of academia.

Your work bridges biology, sociology, and sport. How have these multiple disciplines influenced your technological projects?

They were not technological projects, but projects on technological innovation and its determinants. I believe it would be practically impossible to study innovation in Brazilian biotechnology as I did without such a background. A "non-insider", someone with only a social sciences background would have a hard time understanding the subjects' anxieties and expectations, for example.

Later, when consulting for supplement companies, I take into account how perceptions are socially formed but also the physiology of our interaction with the product, as another example.

You used the term "immature countries" regarding research and development in Brazil, where patents aren't encouraged, if I am understanding right. How do you think the innovation system in Brazil has changed?

Not exactly. The immaturity of the Brazilian technology innovation system 20 years ago, when I worked on the issue, was reflected in the process of transfer, the pipeline from bench (or from plant, in the field) to licenceable drug. We did not have a mature R&D industrial sector, and the "movement" of research results, ideas and questions from the academic lab to drug manufacture, for example, was not well organized, automatized, or smooth. In most cases, it was non-existent. Innovation without robust technology transfer is not really innovation, just a good idea.

In your Substack blog, Shame on Me, you discuss the correlations between shame, guilt, and aging. Do you think shame is taught because of generational trauma, cultural, or even historical events as to why we act in such a way?

We act the way we do because we live in a competitive, meritocratic, unequal and hierarchical society and shame is one of the primary emotional weapons of control. Shame is a threat to acceptance and belonging, it is an existential threat, in a sense: everyone is compelled to respond to it.

When shame is instrumentalized by the adults in charge to force compliance from the children, it prepares the child for serial social compliance as they navigate culture and economy.

What is a driving factor for shame? Is it different for cultures, and if so, would you like to share a personal anecdote?

I think shame is pervasive, but as a form of non ritualized social violence, it may be wielded more frequently in Western societies.

Your book, Suicide and Lifting, discussed the higher rates of suicide for those who lift. How do the extremes of the sports contribute to the phenomenon? Is the drive for success make athletes, and powerlifters especially, a factor in higher rates of completing suicide?

No: suicide and other self destructive behaviors happening at higher rates among lifters has nothing to do with lifting, but with the institutional environment: strength sports didn't use to be practiced in well organized, college or high school settings before 2012, with the rise of Crossfit. Strength gyms were frequently toxic environments, encouraging bullying and eventually affecting several individuals

attracted to it by the camaraderie of the "brotherhood". The discrepancy in suicide rates seems to reflect the weight of these cult-like spaces.

I believe I picked up on a phenomenon on its way to fading away, perhaps. Powerlifting has grown, matured and became a healthier space, it seems, but I haven't looked deep enough.

You stated that Suicide and Lifting was a backburner project for you. Can you tell us about the writing process?

It's an orphan project: it is very much sociology of sport, but it doesn't "fit" into any of the tracks I'm currently exploring. That book was written really fast because I wanted it to be released on September the 20th, Suicide prevention day, on the month of the 10th anniversary of WHO's mental health program.

What made you bring it to the front and finish it?

One of my athletes died of suicide. That, and the fact that it brought back questions I had about myself and my own encounters with the "dark passenger" - Dexter has his, mine is or was suicidal.

How did you juggle this with your other projects, and how do you decide the "importance" of projects?

I didn't, that's the problem. I let "urgencies" (of others) decide for me. Now I am creating a structure for my practice in which decisions can be made more rationally and strategically.

Conclusion Questions:

If there were no restrictions and money was no object, what would you research?

I think I would study how the microbiome, or food (and with it, culture) mediate or shape our perception and intervention in reality. Or the paleoarchaeological history of this holobiotic symbiosis between us and our microbiota.

Selected Bibliography & Primary Sources

Coutinho, M. (2025, October 4). *Gym ethnography and gym sociology part 1: member retention*. Linkedin.com. https://www.linkedin.com/pulse/gym-ethnography-sociology-part-1-member-iwjwc/

Coutinho, M. (2025b, October 22). *Gym ethnography, gym sociology, part 2 - Managing potential and actual conflict between members, and members and staff*. Linkedin.com. https://www.linkedin.com/pulse/gym-ethnography-sociology-part-2-marilia-coutinho-training-systems-m1ope/

Coutinho, M. (2025c, October 26). *Body Alienation, Movement Repertoire and Trainability (Part 1)*. Linkedin.com. https://www.linkedin.com/pulse/body-alienation-movement-repertoire-t33fc/

Coutinho, M. (2025d, November 7). *An Unstable Foundation: A Sociological Approach to Community, Scale, and the Social Pathologies of the Fitness Industry*. Linkedin.com. https://www.linkedin.com/pulse/unstable-foundation-sociological-approach-ad8jc/

Coutinho, M. (2025e, December 23). *Knowledge brokering and boundary spanning in knowledge consultancy - Principles and Approaches*. Linkedin.com. https://www.linkedin.com/pulse/knowledge-brokering-boundary-spanning-zyazc

Coutinho, M. (2020). *Suicide and lifting - Issues in prevention and postvention* (1st ed.). Ronin Institute. Retrieved from

https://www.researchgate.net/publication/344193731_Suicide_and_lifting_-_Issues_in_prevention_and_postvention

Coutinho, M. (2011a). *Estética e Saúde. A Linha Tênue Entre Beleza e Saúde* (1st ed., p. 200). São Paulo, Brazil: Phorte. Retrieved from https://www.phorte.com.br/qualidade-de-vida-e-bem-estar/estetica-e-saude-a-linha-tenue-entre-beleza-e-saude

Coutinho, M. (2011b). *Powerlifting - de Volta ao Básico* (p. 392). São Paulo: Editora Phorte.

Coutinho, M., Freire Jr, O., & Dias, J. C. P. (1999). The noble enigma: Chagas' nominations for the Nobel Prize. *Memórias do Instituto Oswaldo Cruz*, *94*, 123-129.

Coutinho, M. (1999). Ninety years of Chagas disease: a success story at the periphery. *Social Studies of Science*, *29*(4), 519-549.