

Brazil's "Ciencia sêm Fronteiras" Program and Soft Power

Thomas Froehlich

Abstract

Ciencia sêm Fronteiras was one of the largest academic exchange programs in the early 2010s, enabling almost 100,000 Brazilian researchers to undertake partial research or entire degrees abroad. As a major element of Dilma Rousseff's international engagement, the program was often cited in the context of Brazil's soft power. But very little research has been done on how Ciencia sêm Fronteiras contributed to Brazil's soft power reservoir. This article examines the program from an institutional perspective, and analyzes why the program has come short in living up to its soft power potential.

Resumo

Ciencia sêm Fronteiras foi um dos maiores programas de intercâmbio acadêmico no início da década de 2010, permitindo que quase 100.000 pesquisadores brasileiros realizassem pesquisas parciais ou inteiras no exterior. Como um elemento importante do envolvimento internacional do governo de Dilma Rousseff, o programa foi frequentemente citado no contexto do soft power do Brasil. Mas muito pouca pesquisa foi feita sobre como o programa Ciencia sêm Fronteiras contribuiu para aumentar o soft power do Brasil. Este artigo examina o programa de uma perspectiva institucional e analisa os problemas que acabaram por não ajudar o programa como ferramenta de soft power.

In the early 2000s, several analysts commented on the rise of the BRICS (O'Neil, 2001) – Brazil, India, China, and sometimes South Africa –; countries with growing or emerging markets that would gain power and eventually challenge the world order of the era (Hurrell, 2006; Sotero and Armijo, 2007; "The Globalization Index," 2006; Wilson and Purushothaman, 2003). While those hopes did not fully materialize for the BRICS, with the exception of China, Brazil in particular had a remarkable run until its economy crashed in 2014 and remained in recession for almost two years, and the subsequent domestic political turmoil erupted.

From the now famous Christ-the-redeemer statue taking off on *the Economist* cover in 2009 ("Brazil takes off") to the same statue falling from the sky in 2013 ("Has Brazil blown it?"), Brazil drew attention to itself in the foreign policy and international investment circles of the early 21st century. In *Foreign Policy's* final edition of 2009, David Rothkopf called President Luis Inázio (Lula) da Silva's Foreign Minister Celso Amorim (and later Dilma Rousseff's Defense Minister) "The World's best Foreign Minister" (Rothkopf, 2009). The rise of Brazil was in many cases attributed to sophisticated negotiation skills and Amorim's foreign policy that put soft power at its center (Glasser, 2010).

When Dilma Rousseff looked at redefining the future direction of Brazilian foreign policy before her re-election as president in 2014, it was significant that, unlike her mentor and predecessor, she was rather uninterested in international affairs (Sabatini, 2015). In any case, questions surrounding the approach that this president would choose for Brazil's international posture remained widely unanswered. Some pointed towards the growing economy of Latin America's most populous and geographically largest country, and saw Brazil as a regional power to come (Bethell, 2010). Other more optimistic commentators hoped for an increase of its share in world trade, as well as its role as a rule setter through Brazil's engagement in UN missions (Stuenkel et al., 2013) and within the frameworks of G-20 financial regulation after the 2008 financial crisis (Beeson and Bell, 2009) or the increasing global presence of the BRICS countries (Lowe, 2016).

All these indicators, however, only described one side of Brazil's increasing power. This type of traditional power may best be classified as "hard power" (Nye, 1990, p.156). On the other hand, a number of political commentators credit Brazil as being particularly capable of applying a foreign policy strategy that is based on what Harvard Political Scientist Joseph Nye has termed "soft power" (Lee and Gómez, 2011).

Facing a lack of traditional hard power resources, Brazil was able to portray itself as a soft power powerhouse. And for many years, Brazil shaped the discourse around its

international engagement in this way – especially with the intellectual underpinning of international scholars and Brazilian diplomats turned academics. This included, among others, the perception of the country within the international community and its power to persuade, rather than coerce, when it comes to international arbitration. The images of Brazil that include the Carnival of Rio or tropical beaches as well as events such as the FIFA World Cup in 2014 and the Summer Olympics in 2016 – although critically reviewed at the time – contribute to Brazil continuously ranking in the top-30 of the Anholt Nation Brands Index (Ipsos, 2018), a top-30 to top-20 spot in Monocle's Soft Power Index ("Soft Power," 2019), and its appearance in Portland's Soft Power 30 index since 2015 (Portland Communications and University of Southern California, n.d.). While critique is appropriate when it comes to the robustness and meaning of these indicators, they are a reflection of the importance of perception and image, as well as factors of influence beyond military and economic might, that play a role in international affairs (see e.g. [Buarque, 2019](#)).

Beyond journalistic writing, Brazil's soft power has only appeared in a handful of academic studies, e.g. Chatin, who concludes that Brazil presents itself as a soft power broker despite "some discrepancy between objectives and accomplishments" ([Chatin, 2016, p.384](#)); Diniz et al., who analyze Brazil's approaches to cyber-regulation through a soft power prism (Diniz et al., 2014); or, Lustig, who focusses on discourse when looking at Brazil's neighborhood policies (Lustig, 2016). Bry critically assesses Brazil's soft power discourse of "solidarity" within the South-South context: in the work, Brazil scores highly due to its strong track record of fighting both poverty and HIV, but also faces the risks of losing its soft power credentials by increasingly focussing on economic interests (Bry, 2016, p.311).

One of the programs that Brazil was much applauded for is the "Ciência sem Fronteiras" (Science without Borders - CsF) program for academic exchange. This program was often used as an example of Brazil's soft power, however, the question of whether this particular program contributed to Brazil's soft power capabilities in any meaningful way is yet to be addressed. Drawing from relevant theories, as well as similar but more successful examples, in this case Germany's Academic Exchange Service (DAAD), will help to analyse Brazil's CsP and identify best practices when it comes to exerting soft power through academic exchange.

Research Question

A crucial question within the concept of soft power is how states can actively and successfully increase their resources. In contrast to hard power resources, where a country

can increase economic output and thereby military procurement, soft power relies on a multitude of under-researched factors.

One source for soft power are institutions and interdependence within institutions and between countries (Nye, 1990, p.168). On the other hand, there are soft power resources that are based on public and political perception (Nye, 2008, p.96). These require policy makers to combine a number of instruments beyond the typical administrative toolkit to advance a country's standing in the global community. Besides the public relations measures that policy makers might rely on, one of the concrete tools to enhance soft power based on perception lies in exchange programs for both future leaders and academics (Enfield, 2019, p.2). This is the focus of the present article.

As Brazil looked to meet the increasing demand of its growing economy for highly-skilled workers, the governments of both Presidents Lula and Dilma Rousseff expanded the higher education (HE) sector (OECD, 2019, p.2), while the latter implemented a number of initiatives for academic exchange with large funds allocated to programs like CsF, one of the biggest academic exchange program in the world, established in 2011 and concluded in 2015, with graduation dates up until 2019/20 (CAPES, 2013a). Besides Brazil's material interest in educating its workforce and transferring skills from abroad, might there have been a deliberate soft power component to CsF? And if so, what were the factors that influenced the soft power posture of the program?

The following article aims to identify whether or not Brazil's CsF program served as a soft power foreign policy tool, and why. The analysis will focus on both the program itself and the institutional setup that allowed it to be integrated into foreign policy strategy.

Structure of the Article

In order to address the questions posed above, this paper first examines the literature regarding academic exchange and soft power. Subsequently, there will be a brief literature review of existing work on CsF and soft power. The CsF program will be the focus of the next section, with dedicated subsections on the two funding bodies overseeing the program: the Federal Agency for Support and Evaluation of Graduate Education (CAPES) of the Ministry of Education of Brazil, and the National Council for Scientific and Technological Development (CNPq), a public foundation linked to the Brazilian Ministry of Science, Technology, and Innovation. In a final section, Germany's Academic Exchange Service (DAAD) is presented as a model for soft power streamlining of HE exchange institutions.

This paper develops a case study of CsF following the approach outlined by [Gerring \(2004\)](#). It is based on an institutional analysis (following the work of [Greif, 1998](#), and the

IAD framework by [Ostrom, 2011](#)) of the CsF program, based on extensive desk/literature research and complemented with expert interviews for background information and validation. While caution is warranted when assuming the generalisability of single case studies, the value lies in generating qualitative data on the one hand, and inducting hypothesis on the other (Gerring, 2011).

The article finds that the funding bodies are linked to Brazilian high-level policy making and therefore should be able to drive Brazilian foreign policy making, but that in this particular role, lacked central political coordination. In this way, the efficacy of CsF in realizing its potential as a foreign policy tool of soft power was limited.

Soft Power and Academic Exchange

As the creator of the concept, Joseph Nye, states, soft power is: “the ability to get what you want through attraction rather than coercion or payments. It arises from the attractiveness of a country’s culture, political ideals, and policies” (Nye, 2005, p.11). There has been notable criticism of the concept, particularly regarding the lack of a clear definition (Layne, 2010) and the resulting “lack of empirical scrutiny” (Nisbett, 2016), i.e. the difficulty of measuring soft power and its effects. Nonetheless, a lot of the most recent research is making significant progress towards a higher degree of formalization of the concept (most notably, [Ohnesorge, 2020](#)). On the normative side of critique, as posited by [Nisbett \(2016\)](#), is the view that soft power is not a force for change, but rather a function of the established structures that reproduce existing oppression. While this is a valid a problem, he argues, it should be addressed elsewhere.

It is widely accepted that academic exchange increases a country’s soft power potential, such as in the 2019 report of the British Council on soft power (MacDonald, 2019). Yet, the question of how this particular mechanism works is rarely asked. The assumptions in this case are rooted in the concept of cultural diplomacy (Holden, 2013), which can be understood as a subset of public diplomacy and a strategy to increase a country’s soft power.

Interestingly, from a HE perspective, soft power can often translate into greater attractiveness for incoming international students and researchers, which in turn increases the level of soft power, as demonstrated in a HE consulting firm’s 2016 report (GrantThornton, 2016). Ogunnubi and Shawa stress the difference between cultural, public, and knowledge diplomacy (Ogunnubi and Shawa, 2017, p.87), which provides useful insight for analyzing specific policy decisions within the realm of foreign policy analysis, though this broader debate should not distract from the focus of this paper. Similarly, Arroz and Mendonça introduce “science diplomacy” in the Brazilian context (Arroz and Mendonça,

2016), understanding it as a three-legged concept that allows a country to gain access to expertise, promote its own system, and gain influence abroad through the personal networks that can be developed through science (Arroz and Mendonça, 2016, p.129).

Returning to Nye, the first part of his concept, the attractiveness of a country's culture, can be connected to exchange programs and the personal experiences people on exchange have. These experiences, and exchange programs in general, bring us into the field of "public diplomacy," a foreign policy tool that targets the public of a country rather than its diplomatic service or government officials (Nye, 2008, p.100).

Before asking how soft power resources might be generated through public diplomacy strategy, we should first assess the nature of this relationship between individuals and their experiences with other countries and how this might impact foreign policy in the long term. Since "culture is transmitted [...] through personal contacts, visits, and exchanges," (Nye, 2009, p.13) it is possible to assess and potentially rank the impact of certain programs, or even certain groups' experience of foreign policy. The literature shows that, in terms of soft power, the impact of academic exchange in a host country has a stronger effect than experiences of a touristic nature – even though the latter accounts for higher absolute numbers (Seong-Hun, 2018, p.8). It lies in the nature of academia that "many of these former students [that studied abroad] eventually wind up in positions where they can affect policy outcomes that are important" (Nye, 2009, p.45). This important point, understanding HE exchanges as an investment in personal networks that pay dividends once the graduates of exchange programs become local leaders, will later play an important role in the assessment of CsF.

Nye's assessment of the impact of the US HE sector can arguably be applied to most countries where exchange students can engage with and immerse themselves in local language, society, and culture. Although the experience gained from participating in academic exchange might not always be positive, Ohnesorge (2020, p.89) stresses that soft power depends on the reception by the respective partner. Yet, in international relations, one might argue that building friendships is not always what is at stake. As the saying goes: states do not have friends, they have interests. A far more important factor in international relations lies in the stability and predictability of a country's partners. The ability to understand a foreign culture through immersion, whether a positive experience or not, adds to the highly sought after ability to make predictions in the context of international politics.

This idea follows the argument that while international educational exchange plays a role in inter-cultural communication, it is difficult to argue how this should influence a country's international posture or the perception thereof (Lima, 2007, p.234).

In his comprehensive study on soft power, [Ohnesorge \(2020, p.89\)](#) explicitly subsumes “exchange diplomacy” under public diplomacy, as one of the instruments of soft power. This means that, through academic exchange, a country can elicit a reaction from an international counterpart. These reactions are then shaped by the perception of the recipient, which might be attraction, apathy, or repulsion, which, respectively, will lead to either compliance, neutrality, or opposition (Ohnesorge, 2020, p.89).

Since HE “enables and fosters authentic [...] engagement, exchange and collaboration at the individual, institutional and community level” (Byrne and Hall, 2013, p.425), it contributes to a country’s international reputation, and the connection between the impact on the personal level and the overall impact on foreign relations becomes evident. A further institutional aspect of the attractiveness of international HE can be seen in global university rankings, which amplify the effect that HE exchange has on foreign relations, creating a virtuous circle.

Furthermore, relationships formed through personal exchange are not limited to an abstract idea of mutual understanding. Such relationships help develop stronger and long-lasting ties between countries, be it through tourism, trade, or politics. Hence,

positive experiences and exchanges (both in-country and offshore), and the development of intellectual, commercial and social relationships can build upon a nation’s reputation, attractiveness and ability to participate in and potentially influence regional or even global outcomes. This is ultimately the essence of soft power (Byrne and Hall, 2011, p.5).

We can see how exchange in general, and HE exchange in particular, can inform the perception of a given country abroad and lead to a self reinforcing mechanism of enhanced collaboration through tourism, trade, and subsequently political transactions. With its ability to include both current and future elites, HE exchange should be able to play a central role in creating leadership networks that translate into long-term soft power resources.

Ziguras points out that the “projection of soft power remains a primary imperative shaping the international education strategies of most governments” (Ziguras, 2018, p.174), however, that it focuses on the value of incoming students to the perception of a country. In the case of Canada, for example, the country “chose not to establish a centralized organization such as the United States Information Agency, UK's British Council, German's DAAD and Goethe Institutes, EduFrance and the network of Alliance Franchise, The Netherlands's NUFFIC, or the Japan Foundation” (Trilokekar, 2010, p.132). Rather, it

directly linked their international education programs with the department of foreign affairs (Lo, 2011, p.216). Ogunnubi and Shawa similarly point to Fulbright, British Council, DAAD, China's Confucius Institutes, and the European Union's Erasmus Mundus programs as prominent examples of soft power in higher education (Ogunnubi and Shawa, 2017, p.87). Through the soft power prism, attracting foreign academics appears to be a winning strategy, as it allows countries to directly influence the (future) elites of others'. Through the active creation of alumni networks, Fulbright, British Council, and DAAD maintain links with respective partner countries and thereby keep lines of influence open – a material manifestation of soft power.

In the literature surrounding the nexus between soft power and HE, there has been a strong emphasis on attracting foreign students and researchers to one's country, with only a few notable exceptions. China's export of HE to Africa forms part of the country's South-South development cooperation and has gained the attention of certain researchers (King, 2013). Similarly, South Africa understands domestic education policy explicitly in the context of gaining regional leadership and increasing its soft power reservoir (Ogunnubi and Shawa, 2017, p.83).

It is widely accepted that "education has also emerged as an effective tool for countries to project their influence globally, promoting their reputation and social, cultural and political values" (Manjang, 2017, p.92). To address the fact that this notion and the mechanisms behind it have not been sufficiently examined, this paper focuses on the rather uncommon case (in terms of soft power and HE research) of Brazil's efforts to send domestic students abroad.

We have seen what soft power means in the context of international relations, as well as how it connects to public diplomacy, a policy tool to increase soft power. International education as part of public diplomacy "is of increasing importance as an instrument that can build and leverage soft power to facilitate a nation's long-term strategic positioning" (Byrne and Hall, 2011, p.2). And, since this intellectual exchange affects the respective elites, "one or two key contacts may have a major political effect", ultimately leading to effective networks of influence.

The ability to use educational exchange as a tool of public diplomacy to increase soft power relies on a conscious coordination strategy. In the Brazilian context, it is unclear whether the implementation of a major program of academic exchange like CsF was actually created as a possible resource for soft power, and if so, whether this potential was exploited by the federal government in a coordinated manner.

Literature on Soft Power and Ciência sêm Fronteiras

Surprisingly, little work has been published on Brazil's CsF program and its potential contribution to soft power. While several articles briefly mention CsF as an example of Brazilian soft power, there has not been any substantive work done on the actual effect of CsF on, or its potential for, soft power. The only study available is a thesis by Martos (2014), which points out that through CsF, Brazil can present itself as both wealthy and interested in overseas education (Martos, 2014, p.25).

Most literature focuses on the institutional set-up of foreign policy making at the ministerial level. The Brazilian Ministry of Foreign Affairs – also called *Itamaraty* – has been subject to a plethora of studies by predominantly Brazilian academics. When Presidents Lula and Dilma Rousseff put an active focus on cultural diplomacy, the “Itamaraty Cultural Department [was] organised in five units covering the promotion of: language; culture and cultural exchange; Brazilian cinema, television production and advertising; Brazilian policy and news; international liaison on culture with multilateral bodies; and international education.” (MacDonald, 2019, p.14) Notably, academic exchange was not covered by this or any other departments at Itamaraty. For the sake of CsF, Itamaraty had to partner up with Brazil's Ministry of Education (MEC) and the Ministry of Science, Technology, and Innovation (MCTI) – an unusual set-up for the traditionally highly centralized foreign policy in Brazil (ibid).

Miranda and Bischoff focus on the presidential angle of international education in Brazil's foreign policy toolkit (Miranda and Bischoff, 2018). They convincingly show that, at the presidential level, soft aspects of the program were not understood, while the focus remained exclusively with the material benefits of creating a highly qualified and internationally educated workforce within the remit of Brazil's domestic posture as a developmental state. Given this apparent lack of research on the role of CsF in Brazilian soft power, the following paragraphs aim shed light on the topic.

Ciência sêm Fronteiras: General Considerations

In addition to pre-existing bilateral scientific cooperation (e.g. with China or Germany), in 2011, the Brazilian government launched CsF as a major program for international academic exchange. Schulz sees CsF as a logical development of Brazil's ongoing expansion into the global spheres of culture and education (Schulz, 2018, p.77). According to the official description (CAPES, 2013a), CsF was a federal government program that sought to promote the consolidation, expansion, and internationalization of

science and technology, innovation, and Brazilian competitiveness through the exchange of undergraduates and postgraduates, as well as international mobility.

CsF was set up to provide up to 75,000 stipends from the federal government and an additional 26,000 stipends from private investors between the years of 2011 and 2015 (Martos, 2014, p. 16). The initiative was the result of cooperation between the Ministry of Science, Technology, and Innovation (MCTI) and the Ministry of Education (MEC), through their respective funding agencies, CNPq and CAPES, and the department of Higher Education and Technological Education of the MEC.

In addition to these mobility funds for Brazilians to go abroad, a small part of the privately funded resources “provide[d] incentives - start-up funds and fellowships - for out-of-country scientists to move to Brazil, whether in the academic, governmental, or industrial sector” (Garcia et al., 2012, p.1127).

The list of so-called “priority areas” of CsF excluded the humanities and social sciences; the main focus was on technology, natural sciences, and innovation, including engineering and other technology areas, earth sciences, biology, biomedical and health sciences, IT, aerospace technology, pharmaceutical research, sustainable agricultural production oil, gas and renewable energy, biotechnology, and nanotechnology, among others (Ciência sem Fronteiras, 2013a).

The direction of the program becomes clearer when one looks at one of the possible clusters for applicants: “creative industries.” Despite the perception that this might expand the potential candidate pool, further reading reveals that even these proposals had to be focused on products and processes for technological development and innovation, thereby limiting the scope of eligible fields.

Hence, this seemingly open cluster restricted the pool of likely applicants. Since current (and past) leaders of society in Brazil are mainly educated in law or business (Hummel, 2013), one can conclude that the program did not aim at creating informal networks for the future political leaders of the country, but rather served to educate and train the much-needed highly skilled work force – a political goal in line with the developmental model that the Brazilian state followed during the PT government (Saad-Filho and Morais, 2018). This differs from academic exchange programs such as the U.S.’s Fulbright program or Germany’s DAAD program, both of which are of similar ambition but also allow applicants from all disciplines. With the additional disciplines and the active fostering of alumni organizations, this results in networks not only for highly-skilled professionals and academics, but also for future leaders – a policy more in line with the pursuit of soft power.

The CsF program had 27 designated partner countries, consisting of 15 EU countries (Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Spain, Sweden, and the United Kingdom) plus the USA, Canada, China, India, Israel, Japan, New Zealand, Norway, Russia, South Korea, Switzerland, and Ukraine (Ciência sem Fronteiras, 2016a). Institutions in these countries allowed for simplified application procedures, but candidates were also allowed – though not explicitly encouraged – to propose exchanges with countries not on the list. The proposals had to be approved by the selection committee, which judged the merit and necessity of the respective project. The burden was therefore significantly higher for those applying outside the partner countries, which likely led to a significantly higher share of scholarship holders indicating these countries as their intended destinations. The number of awarded scholarships confirm the preference for CsF partner countries. The 27 partner countries account for over 84,000 of the 91,500 scholarships awarded, with the US (27,810) and the UK (10,740) at the top of the ranking, while Australia (7,074) counts for almost all of the non-partner country scholarships (Ciência sem Fronteiras, 2016b). It is equally noteworthy that there was barely any demand for Brazil's political partners, e.g. from the BRICS grouping or Latin American and Mercosur partners.

One of the CsF's objectives was to increase the competitiveness of Brazilian companies, so the program was designed with a focus on technology and innovation (Ciência sem Fronteiras, 2013b). Companies with their own research centers or partnerships with other institutions were able to apply to support the program, either within Brazil or in a host country, through funding stipends. The financing companies worked together with the CNPq and CAPES in order to support and complement the CsF program, enabling the training of professionals and researchers in universities, as well as vocational and technological education. For these firms, the appeal of participating in the CsF program was the ability to send their workers abroad for highly specialized and high-quality training which was potentially unavailable in Brazil.

At the same time, the formation of research centers of excellence between private companies and universities allowed these companies to attract visiting academic researchers from abroad to their facilities. This was intended to create synergies between academic research and applied, industry-based research and implementation, as well as to facilitate knowledge transfer between young talent from Brazil and highly qualified researchers from abroad (CAPES, 2013b).

Of the ten companies mentioned on the program website, attention should be drawn to Petrobras and Eletrobras. The involvement of these two state owned enterprises (SOEs) could suggest greater governmental influence on the program than what is publicly

acknowledged. It is unclear whether Petrobras or Eletrobras representatives in the selection committee of the CsF were politically appointed, which might allow for shaping the program from within government (e.g. from within the president's or foreign office) in order to build soft power resources.

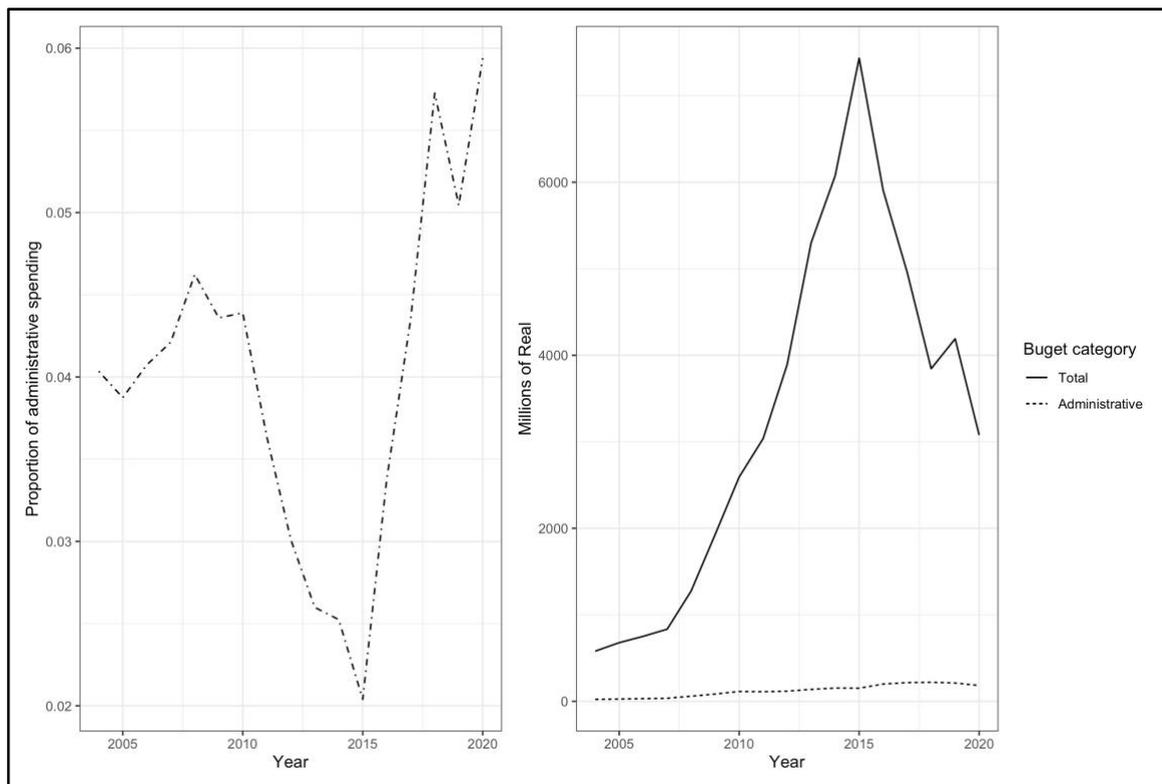
In order to further explore the ability of the Brazilian government to exert influence on the CsF program, we now turn to the two entities that execute the program, CAPES and CNPq. Both organizations have strong ties with politics; however, in both cases, political influence is equally difficult to trace.

CAPES

The "Coordenação de Aperfeiçoamento de Pessoal de Nível Superior" (CAPES) is a foundation set up by the Federal Ministry of Education (MEC) that supervises and consolidates postgraduate education in Brazil. The foundation has not always been in as strong of a position as it is today. In fact, the history of CAPES is quite turbulent. It was first introduced as a government agency of MEC in 1951, turned over to presidential control in 1961, before returning to the scope of MEC in 1964. In 1974, the structure of CAPES was changed and it received the status of a "central body top, enjoying financial and administrative autonomy" (CAPES, 2013b). In 1990, President Collor tried to close CAPES, but after a wave of mobilization and with the support of MEC, CAPES was reinstated less than two months after the attempt. It is understandable that the president of such an internally competitive government would try to shut down such a politically strong and independent institution in order to consolidate power.

At the beginning of 1992, the new and current organization of CAPES was put into effect by Law Nr. 8405, which allowed the government to reorganize CAPES as a public foundation under the auspices of MEC (Brazil, 1992). Despite CAPES' tendencies towards more autonomy and its formal independence in decision-making, the ties between politics and CAPES remain close. An example for this "revolving door" between politics and science in the light of science policy is the long-term (2004-2015) president of CAPES, Jorge Almeida Guimarães, who held his position for the duration of the workers' party (PT) governments. He served as national secretary of political strategy and scientific development in the Ministry of Education from 2002 until 2004.

Figure 1: Budget of CAPES 2004-2020.



Source: CAPES (CAPES, 2020); author's own visualization.

Figure 1 shows a significant and continuous increase in the budget of CAPES until Brazil's financial crisis in 2014/15, which suggests a strong buy-in from the political decision-making level. At the same time, the fact that the administrative share of CAPES' budget remained fairly stable over the period does not suggest that the institution developed a strong self-serving agenda.

As early as 2007, CAPES created an international relations department and a department specifically dedicated to scholarships for Brazilians to study abroad. Since international cooperation in the Brazilian academic sector had previously been based on bilateral treaties, the ability of CAPES to shape policy within a multi-lateral exchange context should not be underestimated. The uncertainty of this new framework gives CAPES an increased space within which to operate and shape science and education policy.

Within the realm of CAPES, exchange agreements that qualify for funding can either be set up on a bilateral basis between universities or be based on bilateral treaties at the national level (Schulz, 2018, p.117). CsF can then become a line of funding for those agreements. For future research, it would be worthwhile to collect, aggregate, and analyze the data of all CsF scholarships with respect to their type of agreement.

The lack of direct institutional ties, however, between CAPES and the president's office (especially given the changes in institutional set-up in the past) suggests that CAPES is not strategically involved in the government's work when it comes to using academic exchange as tool to acquire soft power. The lack of ties between CAPES and Itamaraty only further reinforces this point. The CsF program, as administered by CAPES, lacks the clear political motivation present in similar academic exchange programs of other countries (e.g. Fulbright or DAAD).

CNPq

The Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) can be viewed as the Ministry of Science and Technology's (MCTI) counterpart to CAPES. It was founded in 1951, in order to develop policy strategies in the fields of science, technology, and innovation – mainly the development of nuclear technology in Brazil. CNPq remained a government agency under the auspices of the Ministry of Technology until the end of 2002.

When it was first founded, the main task of CNPq was to coordinate Brazil's nuclear policy and development. Its mission, therefore, was, and is, more openly political than that of CAPES (Grabendorff, 1987, p.531). In 1964, the task of formulating policy strategies was formally incorporated into CNPq's mission. From 1974-1985, CNPq was subordinated to the Secretariat of Planning within the presidential administration and was stripped of much of its autonomy (Schwartzman, 1994, p. 448). With the creation of the Ministry for Technology in 1985, CNPq was linked to this new actor after a request by the scientific community to gain more autonomy at ministerial level.

This change in the mission of CNPq brought more liberties and autonomy into its work. Still, the political connections remain: the regulations of CNPq state that its president, deputy-president, and three directors must be appointed by the president of Brazil (Dias and Serafim, 2011). Furthermore, the executive board of CNPq includes a state-secretary of the Ministry of Technology. The presidential administration has a close eye on the decisions of both the executive board and the executive directorate. At CNPq, international relations and the funding of outgoing researchers is directly overseen by the presidency of the organization (Schulz, 2018, p.93).

Closer inspection of CNPq's work shows that the CNPq acts primarily as an expert body in advising the Brazilian government. Many of the policies implemented by the administration are based on recommendations of the CNPq. On the other hand, CNPq does implement government policy in certain areas. For instance, in an online interview, the former head of CNPq admitted to working towards modernizing the Brazilian university

system – in line with government policy - against the preferences of the universities' bureaucracies (Oliva, 2015).

It is noteworthy that this scientific-academic advisory council is led by political appointees. Returning to the question of how this affects Brazilian opportunities to transform the CsF program into a tool of acquiring soft power resources, it also seems that, despite the close connection with MCTI and the dependence of the executive personnel on a presidential decision, the CNPq generally develops an autonomous agenda and pursues it. The historical relationship and mission statement of the CNPq both point to this. The same may be said of parts of the government within the MCTI. Therefore, the institutional design of the CNPq and its involvement in the CsF do not suggest any potential for the coordination of a soft power strategy.

Moreover, an initial lack of adequate funding for the administration of CsF grants, coupled with the fact that there was a lack of coordination between CAPES and CNPq, means that the uptake of the program was significantly delayed (Aveiro, 2014, p.8), making a strategic use of the program seem less likely.

Having examined the implementing bodies of CsF - CAPES and CNPq -, it becomes clear that its institutional set-up was not adequate to facilitate the program as a tool of soft power. The organizational distance between the implementing bodies and Brazil's foreign policy making bodies, Itamaraty and the office of the President, complicated the possibility of embedding CsF into any foreign policy strategy, in particular into a complex mechanism of soft power.

To continue the debate on how, exactly, a country might indeed incorporate academic exchange into its soft power foreign policy strategy, the following paragraphs outline how Germany approaches HE exchange in a more politically guided manner.

HE exchange as soft power tool: Germany's academic exchange politics

Germany's flagship institution for academic public diplomacy, the German Academic Exchange Service (DAAD), was originally founded in 1925 and thereby reflects the importance that this kind of foreign policy has played in Germany's Grand Strategy over the past century. In its current form, DAAD was re-founded in 1950, and since then has financed around 2.5 million scholarships, with about 1.5 million scholarships for Germans and roughly 1 million for foreigners – making it the largest funding body for academic exchange worldwide (Deutscher Akademischer Austauschdienst (DAAD), 2020, p.10). DAAD is embedded into a network of German institutions that address cultural diplomacy, among them the Goethe Institutes, which are dedicated to promoting the German language

in close cooperation with the German Foreign Office (Lanshina, 2015, p.87), the Alexander von Humboldt-Foundation, and the Institut für Auslandsbeziehungen (Institute for Foreign Relations) (Felknerová, 2014, p. 81). This coordinated German Foreign Cultural and Educational Policy falls in the remit of the German Foreign Office, which employs an entire division to coordinate policies within the broader framework of German foreign policy (Adick, 2016, p.15).

DAAD's budget, which in 2019 stood at just under 600 million EUR (Deutscher Akademischer Austauschdienst (DAAD), 2020, p. 144), is funded by the German Foreign Office (35%), the German Ministry for Education and Research (25%), the German Ministry for Economic Cooperation and Development (10%), and the European Union (23%). This breakdown of the funding sources makes it clear that exchange diplomacy is regarded as an important tool of German foreign policy and is political in nature. The aspect of developing capabilities (ie., the developmental state) can be understood as a side effect, which is also represented in the smaller share of funding that the German Ministry of Education and Research bears in the overall funding structure.

While representatives of Germany's scientific organizations form part of DAAD's governing body, the organization's board is strongly influenced by the representatives of the constituting ministries, each delegating one representative to the board. This enables DAAD to shift geographic preferences in target countries according to geopolitical necessities, as well as to streamline funding priorities in line with the activities of Germany's other institutions of cultural diplomacy.

Finally, DAAD's motto, "change by exchange", and its explicit goal to "educate future leaders, who are connected internationally and act in a globally responsible manner," (DAAD, 2020) illustrates the genuinely political mission of the organisation. This is emphasized by the active creation of alumni networks and incentives to regularly return to Germany for alumni meetings.

Discussion and Conclusion

Unlike the beginning of the 20th century, when the iconic Brazilian Foreign Minister, the Baron of Rio Branco, celebrated intellectual exchange and used, for example, the Third Latin American Congress of Medicine in Rio in 1905 to promote formal academic and informal political networks (Dumont, 2010, p. 4), the potential political opportunities of academic cooperation are apparently unknown to Brazil's contemporary policy makers. As Ziguras points out, "to aspire to an education system outside the influence of power is to overlook the fundamental ways in which the configurations of power within every society

shape its valuing of particular forms of knowledge and its systems of learning" (Ziguras, 2018, p.183); it is an obvious choice for governments to internationally capitalize on their HE systems.

But to assign responsibility, the question remains: who is in charge of foreign policy strategy in Brazil? Formally, this authority lies in the remit of Itamaraty. However, in this case, the concrete design, structuring, and implementation is being carried out under the auspices of MEC and MCTI. This lack of streamlining political strategy lays bare the central deficit of CsF in realizing its soft power potential, particularly since neither MEC nor MCTI have significant influence or interest in developing the strategy of foreign policy (Miranda and Bischoff, 2018, p.906).

Due primarily to the size of the program, CsF might be regarded as a significant source of soft power. The lack of political coordination in operating the program and its core focus on the natural sciences, however, suggest that the program is squarely aimed at national capacity building in the spirit of the developmental state, which Brazil is often described as (Schneider, 1999).

CsF did not seem to strategically support foreign policy goals, nor did it appear to be concerned with building a network of future political and societal leaders that might have been beneficial assets to Brazil's international posture. In fact, according to Miranda and Bischoff, the idea of CsF was spun out of the first meeting between then President of the United States, Barack Obama, and Dilma Rousseff, (Miranda and Bischoff, 2018, p.911) and therefore might even be understood as a result of American soft power in action.

As the then Brazilian Minister of State for Culture, Marta Suplicy, made clear in a speech given at a Wilton Park conference in 2013 (Wilton Park, 2013), Brazilian leadership understands that capacity building abroad can lead to soft power, as researchers gain a better understanding of the functioning of other cultures and can thereby advise Brazil's external action (Suplicy, 2013). Why, then, do policy makers fail to adjust existing structures to fully serve such a strategy? In the context of the future direction of Brazilian foreign policy, it seems that CsF was not strategically set-up and used as a resource of soft power. The decision to introduce a general fund for academic exchange and decentralize the decision-making, rather than to steer the process from Itamaraty or the Presidency via e.g. bilateral agreements with partnering countries, lowered the leverage that political negotiation was able to have on the geopolitical orientation of the program.

Furthermore, by focusing on natural sciences rather than humanities or social sciences, the program suggests that the future political leaders of Brazilian society are not

explicit targets. Instead, the program focused on the base of future economic growth within the country: highly-skilled workers.

The fact that Itamaraty is not directly involved in the program shows a lack of leadership for maintaining influential policy networks, which in the mid- to long-term could serve the purpose of efficiently translating soft power resources that have been gained through the program into useable assets. A lack of understanding of the value of international education as a source of soft power, both at the presidential level as well as in Itamaraty, may serve to explain the sub-utilization of CsF for soft power purposes (Miranda and Bischoff, 2018, p.912).

Drawing from the example of Germany's DAAD, it becomes clear that had CsF been structured differently, the Brazilian government might have gained more from the beneficial side effects of soft power. In particular, the comparison highlighted the importance of embedding program coordination more deeply within government ministries, such as Itamaraty. Conversely, bringing such a program into broader foreign policy strategy allows it to serve beyond domestic developmentalism. Furthermore, DAAD demonstrated the value of targeting both incoming students and future "leaders" from a wider range of disciplines, as well as organizing a longer-term strategy through alumni networks. Finally, the public diplomacy and public relations dimension of such soft power efforts cannot be underestimated. In this sense, a stronger focus on the societal outreach and impact of the recipients of scholarships, alongside dedicated advertising, is shown to enable exchange programs to attract interest beyond the domestic academic bubble.

The question remains as to why Brazilian politics would turn away from a policy tool that had been part of Brazil's diplomatic tradition (Saraiva, 2014) and instituted by one of Brazil's most highly acclaimed politicians, Baron de Rio Branco. There are two possible, non-exclusive approaches to this question. The first is that soft power was poorly executed. Since it is unlikely that the Brazilian government simply forgot about the importance of academic exchange for soft power policies, one might argue that the CsF program was regarded as soft power resource within the government. Some officials might join former Brazilian diplomat Ribeiro Couto in arguing that the "purpose [was] to set the basis for a discreet propaganda of Brazilian intellectual values abroad, avoiding, as much as possible, that these endeavors should be perceived as an ostentatious official propaganda" (Dumont, 2010, p.5). However, the fact that a positive influence can barely be measured, and that neither the president nor the foreign ministry is involved in the program, make it extremely difficult to consider this a coordinated policy measure – which is not an unthinkable scenario in the Brazilian political arena.

The second approach focuses on the developmental state. It could also be argued that, as with other policy areas, Brazil has shown the tendency to neglect its heritage of successful soft power interventions as its economy grows and its hard power resources increase. The political management of CsF could serve as a further indicator of this development focus, as the Brazilian government turns to measurable gains in science output (e.g. innovation and patents), and transferring knowledge towards its own economy rather than the sometimes difficult to quantify soft power gains and their respective translation into political influence.

With the last scholarships awarded in 2015, *Ciência sem Fronteiras* remains one of the largest academic exchange programs of recent history. With the financial crisis of 2015, and its ensuing political turmoil, Brazil also faced (and still faces) a notable decline in its soft power reservoir. With a stronger vision of actively creating soft power through CsF, the country's perception might not have suffered to such a degree. Future Brazilian governments might re-design academic exchange programs in a fashion that allows the country to strategically position itself as a leading soft power – again.

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