The Chilean Scholarship Program

Shapes of precarity as a policy

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Résumé : The ambitious National Program has invested billions since its foundation in 2008, without any clear definition regarding the return of the scholarship holders. Thousands of young researchers are now in precarious labor conditions in an already collapsed system. Our qualitative research seeks to understand the ways former scholarship holders live precarity and how does it impact their knowledge production.

Mots-clés : Precarity, Vulnerability, Production of Knowledge, Advanced Human Capital, Becas Chile.

1 The Scholarship Program's objectives and limits

Chile was the first South American country to access the Organization for Economic Cooperation and Development (OECD), during Michelle Bachelet's presidency in 2010. She said it was "the start of a new road towards the future that opens new and great opportunities to advance more rapidly" towards the ranks of the world's developed countries (OECD, 2010).

Bachelet's speech mobilized the permanent hope of becoming a developed country. In *developing countries,* the developing discourse is at the center of policies, particularly because development can be the answer to mainly infrastructural issues. Poverty, hunger, housing, environment, etc., all are problems that could be *solved* with development. Progress and the application of scientific knowledge contribute then to the solution of those problems (Vinck, 2014).

But access development is far more complicated than just access as proposed by the OECD (2010). It is not merely a matter of the growth of the GDP per capita, the

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public infrastructure or the regional (global) influence among other nations. Development is a complex and instable formula that implies different factors in different regions. While some countries consider social opportunities as the key to becoming a developed country, others prefer industrialization, foreign commerce, etc.

Some countries, such as Israel or South Korea, implemented policies based on the science budget (from 4% to 7% of GDP). Scientists not only can access to interesting public science funding, but those countries also invested considerable amounts to form Advanced Human Capital. Knowledge and Innovation are at the very center of those policies. As there is "no development without Human Capital" (Márquez and Heyl, 2010), Chile needed capital to reach those promises. This is what cognitive capitalism thinkers argue, the key factor to develop societies is their production, using, and keeping of properties rights on knowledge as the motor for innovation and growth (Vinck, 2014).

By stating the pillars of Education, Science, Technology and Innovation as fundamental and strategic, the Chilean government wanted to insert the country into being a Knowledge Society, reach development, and defeat poverty, during 2006. The same year, a Ministerial Committee was formed to propose policies and create a scholarship post-graduate program for the country. In 2008, the existing public scholarships formerly disseminated among different Ministries were put all together in a Central Scholarship program, referred to as the "Becas Chile" Program, administrated by the National Science Commission (CONICYT) [2].

While the purpose of "Becas Chile" is formally to "support the formation of Advanced Human Capital financing National and International scholarships" (CONICYT, 2008), the program doesn't have a specific definition of Advanced Human Capital. While some scholars affirm that the definition includes all of the graduated people from Higher Education, CONICYT understands Advanced Human Capital is just for academics with the potential to develop research tasks (Salas, Riveros and Medrano, 2017).

By 2010, Chile created an international fund of 6 billion dollars to finance the program with its banking interests. Since that time, the country invested annually to fund Masters and PhD scholarships of young researchers [3]. The amount has decreased from the program's beginning to today. At the time when the Chilean Scholarship Program was implemented, Chile was living an economic cycle of prosperity, with historic copper prices. The Scholarship Program was also an economic strategy : if spending the money somewhere else, the government avoids inflationary monetary pressures.

To be selected as a scholarship holder, CONICYT asked for several requirements that lined up the Chilean science strategy with the mainstream international science system : excellence in undergraduate programs, the chosen institutions must be credited by its excellency as well and the candidate's trajectory had to accord with the international standards. For example, it was recommended that the candidates had an international publication on a central classification (like Web of Science, Pubmed,

2. CONICYT has recently change its name to National Research Agency (ANID in Spanish)
3. This chapter works mainly with PhD's scholarship holder.

Scopus, etc.). Once the candidate was chosen, the program paid all of the institution fees, a monthly amount for a specific time according to different programs, and some other benefits. There was only one condition : after finishing their studies, the beneficiaries were required to return to the country in order to give back to the benefit of their qualifications to society.

During the program's first decade, there was no restriction about what scholarship holders should research. It was an open call focusing on excellency as the candidacy core and, without any orientations or encouragement about the objects of investigations or the research areas. While this openness was coherent with the foundational program's goal, "contribute to increase Advanced Human Capital for the country's development of science, technology and innovation" (CONICYT, 2008), it reflects the program's ambiguity in definition terms. What kind of science did the country want to promote ? Were all types of science functional to Chile's priorities ?

This lack of definition was already alerted by OECD in 2009. The organism recommended in a report –among other things-, "the strategic integration with national priorities and the attraction and reinsertion in Chile of the scholarship holders" (OECD, 2009 : 13). Ten years now passed since the beginning of this national science program, and the country is living the side effects of a deficient policy. Thousands of young researchers went away, formed themselves through the most prestigious educational institutions around the world, and came back, hoping for integration on the scientific field and to give back to their society from where the investment was made.

But Higher Education institutions don't have the capacity to absorb thousands of new jobs annually [4]. At the same time, the other way to fund science activity in Chile, the National Fund Program in Science and Technology (FONDECYT) has also decreased over the last years. CONICYT has implemented, for instance, an integration program, paying part of the new researchers' salaries in association with scientific and educational institutions.

In 2018, CONICYT published a letter in a local newspaper, declaring a modification to the Scholarship Program. The Institution affirmed that the resources will be now oriented to strategic areas according to primary interests for the country. These areas should be evaluated by the scientific community, the productive sector and representatives of civil society. This new orientation must be taken by the new Ministry of Science, created in 2018 as well. This institution should be able to handle a specified budget to encourage research, technology and the promotion of a scientific culture.

This instability drove scientists to organize themselves in different structures to request the State for better work conditions. Civil associations start to claim more money for research, innovation, as well as training and developing human capital. For example, the "More Science for Chile" movement [5] organized a scientific demonstration, where hundreds of people demanded the need of science. Their discourse was based on the fact that Chile required more science to reach better stages of social development. The movement has recently reached another step : it has become the

4. The program has benefit more than 6.000 scholarship holders so far.
5. "Más ciencia para Chile" in spanish. Its Website is http://www.mascienciaparachile.cl/,

"More Science Foundation". This foundation along with some twenty other groups, had created the "March for the science"[6] that took place recently in many cities across the country.

The "Science with a Contract" movement[7] wants to change the precarious working conditions of many scientists across the country. Their claim is driven by the low wages and the absence of a social protection for all the people working for projects financed by CONICYT.

The National Association of Post-graduate Researcher[8] works toward generating space for dialogue between post-graduated researchers and CONICYT, achieving different improvements since its foundation in 2008.

There are more local researchers in Chile now than ever in the country's history. The enunciated civil organizations (among many others) evidence a legitimate social concern regarding the lack of a science policy. The public budget's stagnation in the last ten years, the precarious working conditions in the scientific field, and the oversupply of young researchers are the main and more visible issues.

But, what kind of science are we talking about ?

The National Science Funding System (FONDECYT), created in 1981 during Pinochet's dictatorship, conceived science as an individual activity. The system doesn't integrate any mechanism to evaluate social impacts, and generally speaking, there are no visible links between science and society. As the World Bank (2003) affirms that knowledge production is a public good, the decision about what kind and how knowledge is produced depends on students (Salas, Riveros and Medrano, 2017). This conception reveals the way science is conceived by Chilean State : an individual activity characterized as a public good.

This conception can be understood in light of the seminal work of Antony Gibbons et. al (1994). They distinguished between what they called the Modes 1 and 2 of the production of knowledge. While the Mode 1 is related to science in its abstract definition, without conceiving its application as a part of its nature, in the Mode 2 the application of knowledge is oriented, generally speaking, through some industry. In consequence, the research products are subjected to a variety of control mechanisms and knowledge is legitimised by its use. If the first conception of the Chilean Scholarship Program (from 2008 to 2017), can be understands as a Mode 1 Program, the production of that knowledge wasn't aligned with a policy, thereby ignoring the possible side effects. In respect to the program's new orientations concerning the resources orientation to strategic areas, the Scholarship Program could be understand as a Mode 2 policy. This fragmentation installed by the Becas Chile Program can be analyzed from two perspectives : On one hand, the precarious labor conditions of the scientific field. On the other hand, the production of knowledge definition as a public good is not defined precisely. This fragmentation reveals the very nature of the Chilean State's policy deficit.

6. "Marcha por la ciencia" in spanish. Its Website is http://marchaporlaciencia.cl
7. "Ciencia con contrato" in spanish. Its Website is http://www.cienciaconcontrato.org/
8. "Asociación Nacional de Investigadores de Postgrado" in spanish. Its Website is http://anip. cl

This theoretical distinction is considered as functional when explaining the need for policy because it doesn't overrule the function of the producers of knowledge (the scientists) and on what they are producing. The Mode 1 or 2 are therefore functional to explain the policy's variation, but they are useless to explain the sense of the policy. The intellectual debate that took place in Europe and in Latin America in the seventies about the social utility of science production (Jurdant, 2009 ; Varsavsky, 1973) put in light the core of this problematization : thousands of scientists financed by Chilean contributions, are required to come back but without a purpose and obliged to stay and being forced to find decent working conditions, while they wait in precarity.

2 Methods

To understanding how precarity is experienced by the Chilean scholarship program holders, and how that experience could be a source to generate new kinds of knowledge production, we conducted some in-depth interviews with former Chilean's Scholarship holders to try to apprehend their notions of precariousness.

To achieve this goal, we asked the "Science with a Contract" Association to publish on its Twitter account a post that said, "Research on precarization and lack of opportunities within science and social science. We are looking for scientists beginning their careers for interviews" (figure 1). After receiving eight responses, we completed twelve in-depth interviews with the snowball technique and with former scholarship holders, which manifested explicitly to us their willingness to participate in our research. We interviewed personally and by videoconference, because two respondents had left Chile without finding work adapted to their needs.

As our Twitter publication was not specific concerned about the goals and purpose of our research, the in-depth interview was the suitable technique for us to try to understand the way these young researchers felt about precarization.

3 Different *precarities*

Precariousness is not a recent concern in social science. Often related to work conditions, the term has also recently progressively been used to explain different situations regarding social life. Tejerina et. al (2013 : 15) proposed a clear definition of precarity. For these authors, precariousness can be a condition, a situation or a resource. We argue that it can be all three at the same time.

Uncertainty related to crisis (*Ibid* : 16) could be the key to understanding how these three kinds of precariousness can go together. Classical social science's categories, as marginalization, vulnerability or poverty were analyzed from uncertainty by eminent sociologists during the twentieth century. But simply separating precariousness will not be a useful task for this research, because we argue that the uncertainties we analyzed, revealed that our subjects we studied, express precarity as a condition, a situation and a resource from their own precariousness.

Respondents answered our query with several interpretations about what precarity is. While *situation* or *condition* were prevalent points of view, some thought precariousness can be a resource as well. Respondent #4 lives such precariousness daily :

"When I came back from my scholarship my intellectual precarity began. I started to work in a public institution where I couldn't do any research ; there was any relation on what I studied. The State invests on you, but then your retribution has no links at all on what you studied".

Precarity has also more dramatic interpretations among our respondents. "With all this uncertainty, I can't be more than two months without a work. This produces exhaustion, stress condition, no basic safety to develop a deeper intellectual construction". The anguish of this respondent was far removed from intellectual preoccupations, as he explained that "all my clothes is buy in sales, many times I can't even chose its color" (Respondent #5). Another Respondent (#6) has had also painful experience with its precarious situation : "With all my improvement, my publications, my efforts, I couldn't get a job, even for a minimum wage, for a minimum recognition. I got a depression".

Precariousness is also seen as an infrastructural problem. "I think it is important to support people in precarious conditions. The problem is not only the economic part ; many people are not allowed to develop themselves in academic environments. This is the precariousness I live" (Respondent #8). There were even more elaborated answers, concerning socio-political interpretations : "The precariousness is to send somebody somewhere else, without having any plan for this return. The complete system is precarious ; people don't have any kind of safety, in education, in health, etc. We couldn't adapt ourselves back in Chile, we had to come back" (Respondent #9).

In many different ways, all the query's respondents expressed the way they felt about precariousness, even if they didn't provide elaborated answers. As Respondent #10 said : "I look quiet, but each day I am I little bit more worried".

4 From anger to frustration

It may seem obvious, but many of our respondents were truly unhappy about their situations and condition. In these cases, there was no will at all to redirect that anger or frustration into being a resource or something else.

Anger, an emotion venting by catharsis in our interviews (Bushman, 2002), is observed by several behaviors [9], tone of voices [10] or by some critical argumentation expressing that emotion.

The economic part of the scholarship is a main issue for some of the subjects we studied. Respondent #5 affirmed that when he was a scholarship holder, "the amount was equivalent at what earns a garbage collector. I was at poverty range ; the State gave me milk monthly".

The amount is not the only issue regarding economic issues. Payments are often made with some delays, putting additional obstacles in place to students. "The first payment was made eight months later. I don't know if it's sad to tell, but be a Chilean is an advantage in that sense- to get a job-. I have friends that had to come back because

9. Holding hands in a fist, facial grimaces or body stiffness, not included in this chapter.
10. Not included in this chapter.

they couldn't resist nine months without having a salary" (Respondent #9). For him, that emergency finally expressed the nature of the scholarship holders who are unable to finish their programs : "It's a biased selective process by the economic conditions of holder's families" (Respondent #9).

It is revealing to also compare the way scholarship holders live their precariousness. In contrast with precedent respondents, Respondent #4 had a different perspective on those delays : "I asked for a loan, and I got the scholarship money three months later. I lived with the bare minimum, I had to work at the university, but I had a great time".

Respondent #6 proposed to us a less centered in material retributions reflection : "I won't die by starvation ; I don't need the money at that point. But I think it's easy to be at the border of depression if you compare with all this knowledge gathered for so many years".

We observed as well some respondents frustrated about what they found after returning from their scholarships : "University is a wild organism, particularly about competition. People don't want to collaborate ; they want to steal your ideas [. . .] is a mediocre environment" (Respondent #8). The critics regarding the academic environment were not expressed by a single person : "My PhD was not the answer of my needs [. . .] my networks are simply professionals or academics, but not political. I feel there is no room for returning young people" (Respondent #6).

Coming back, the frustration is not only from the academic field, but also from the lack of opportunities these young researchers find when they come back : "I would like to participate in many other areas, but there is no space, there are no resources" (Respondent #12).

5 From resistance to resilience

The several associations and groups gathered against the missing policy of the National Scholarship Program, are a manifestation of a public resistance to the State's power. As Butler argues (2016), the topic of vulnerability comes part of any gathering, "when people demonstrate the precarious conditions in which they live" (: 12). Vulnerability is then indexed by precarity ; so, vulnerability has the potential power to transform by means of political resistance.

Even if many of our respondents reacted to our query through a call made by an association (Science with a Contract), the interviews were answered from an individual perspective. And even if we observed precarity in many different forms, anger or frustration, we also detected resilience in different degrees among our respondents. We are not talking about the resilience 'as a technology of the neoliberal government' (Bracke, 2016 : 52), but the notion of resilience link with vulnerability and resistance.

Most of the people who have a lack of security conditions are often seen as 'resilient'. But these persons are usually the subalterns, differentiated by class, gender, ethnicity, race and division of labor (Bracke 2016 :59). Those who are 'resilient' are not linked to security but with survival. The global economic and political institutions see resilience

as a 'raw material'. The resilience subject must absorb the impact of policies and continue to be productive.

Our subject studied seems then to fit in this construction within the policy's framework. The National Scholarship Program imposes the holders to return ; it asks them to be productive so they can contribute to the country's development. But there is no security associated with this imposition. The precarization of its labor conditions indexed then the vulnerability, expressing resistance and resilience.

This theoretical frame allows us to understand how our respondents live through vulnerability. Some of them, for example, saw precarity from the resource perspective. Respondent #1 returned back with a PhD, but he couldn't get a job. He signed up in a post-doctoral position as a "desperate measure", arguing "his comfort zone anguished him [...] I had a terrible impotence, I was demotivated, and my wings were cut. I had so many expectative about my PhD. I was very frustrated, at least I am not depressive".

The vulnerability drive by precariousness can be far more dramatic in some cases. The resilience of Respondent #5 was limited with some health complications. "I have a medical condition since ten years now. It obviously affects my productivity [...] I think it is related with stress. It's been more than ten years without having any holidays".

Finally, the resistance of our respondents was also observable from their remedies. Many of them proposed different alternatives to try to change the scholarship holder's situation. Respondent #6 argued that it is essential to communicate : "it is not an expanding market. The argument that PhDs' have a job is very common, it's a hidden precarity, an elite precarity".

Others think it is a complete system of precarization. A first approach was from the human perspective. "It's important to support people in precarious conditions. It is not an economic situation, it's also a matter that they don't have the space to develop themselves" (Respondent #8). There were also some more institutional interpretations : "The origin of the precariousness is that the rules are not made by scientists. They simply don't understand that you can contribute to your country from the outside" (Respondent #9). And there was inclusively some information outside the academic point of view : "There are so many where we can participate. The professional world doesn't consider the PhD's potentiality regarding their own areas".

6 Conclusion

The Chilean State organizes its economic structure on international trades based on selling raw materials : copper (mostly) but also wood, fruits, and salmon. The manufacturing sector barely exists. Chile is a neo-extractivist country (Burchardt and Dietz, 2014), understanding this denomination as a country that has conceived his economy on natural resources extraction and then constructed his own social development with the profits of those extractions. Svampa (2013) called as well to this new cycle a "Commodities consensus", where the neo-extractivism order configure

comparative advantages and economic growth, and at the same time, it produces new asymmetries and social and environmental conflicts.

Chile doesn't need, strategically speaking, science and technology development, because the extraction industry has a low demand on research. This interpretation on how the Chilean State spends money for science and technology is also endorsed by some policies. In 2015 Chile promote a "pro-innovation" policy, defining priorities areas to develop science and technology ; basing these policies on Chile's competitive advantages of mining, aquaculture, the service sector and fruit farming. This kind of mechanism is conceived to promote economic growth, and in this sense, the path is to develop technology with an economic point of view, like for example, adapting some GMO to weather conditions or to create vaccines for curing a salmon virus. Even if the priorities areas defined in 2015 were evident, CONICYT had not declared the priorities areas concerning the National Scholarship Program from 2019 onwards. But it is reasonable to guess that it will be a focus on applied science, dismissing, or at least discouraging the development of local fundamental science.

On one hand, there are no links between public interest and scientific research in the Mode 1 of scientific production of knowledge (Gibbons et. al, 1994), and then the Mode 1 and the Mode 2 are completely disarticulated. The system encourages skills on researchers (like scientific production or administration skills) and formats and epistemological orientation in order to create performance indicators and rankings, which are not linked to society. It encourages an academic research commodification, promoting publications written in English, in science and engineering, and partially disregarding a large Latin-American tradition of thought linked to research centers deinstitutionalized in dictatorships (Beigel, 2013). As there is any encouragement to research on topics that may interest society, there is a detachment between scientists and civilians.

By the other hand, the universities neo-liberalization process isolates the scientific research from universities, putting the accent on teaching and professionalization. Then coming back young doctors can't find adapted work place to their academic development because of the system's collapse. Former scholarship holders are situated in an ellipse, between being intellectuals or experts (Neiburg and Plotkin, 2004), depending on different approaches.

Institutional and epistemological frames of scientific policies are only partially functional to scientific practices deep transformation, to intellectual work and to knowledge production on a highly uncertain world. The years lived on transit or precarious situations are the reality of many of our subjects. They settle on a kind of institutions periphery on precarious conditions aggravated by international mobility (Jedlicky and Pudal, 2018).

We observed precariousness on many levels in this case study. The policy put the production of knowledge in a precarious situation, without expressing any clear scientific goals, expressing ambiguous declaration concerning priorities areas of research and without any clear linking with society.

The policy puts former scholarship holders in precarious situations as well. We observed many different forms of precariousness among our respondents. Precarity was a situation, a condition and a resource. It was also a combination of the three of them.

From jeopardizing their personal integrities to its pooling into civilian's organizations, the interviewed young doctors expressed manifestations of resilience and resistance. As the neoliberal government understands precariousness as a source of productivity, we think it can be linked with different kinds of knowledge production, detached from power and colonial domination.

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