The scientists of the IVIC in the evolution of science and technology policy during the Chávez administration in Venezuela

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ABSTRACT

Hugo Chávez’s assumption of the presidency in late 1999 brought about major institutional change in Venezuela, and in its science and technology. Some authors speak of a breakage of the scientific community’s “social contract” with the state through the inroads of a new political bias or politicization, and of a replacement of decision-making among the scientific community traditionally responsible for the direction of science and technology policy (STP) – in which the scientific community of the Venezuelan Institute of Scientific Research (IVIC) had been a historically influential, not to say dominant, actor – by other actors of Venezuelan society. This study aims to elucidate the changes occurring in the Chávez administration’s STP and, especially, in the role played by one of its actors – the scientific community of the IVIC – while identifying the political actions of the key actors responsible for that policy and highlighting the power they wielded, gained, or lost over its development.

Os cientíci cos do IVIC na evolução da política científica e tecnológica do governo de Hugo Chávez

RESUMO

No final do ano 1999, a chegada de Hugo Chávez à presidência trouxe consigo mudanças institucionais importantes na Venezuela e na institucionalidade da Ciência e a Tecnologia. Alguns autores falam de uma ruptura do “contrato social” da comunidade científica com o Estado pela entrada de uma nova parcialidade política ou politização, assim como também, uma substituição da tomada de decisões da comunidade científica tradicionalmente responsável pela direção da política de ciência e tecnologia - na que a comunidade científica do IVIC tinha sido um ator historicamente influente, quando não dominante – por outro atores da sociedade venezuelana. O presente estudo visa dilucidar as mudanças evidenciadas na política de ciência e tecnologia do governo do Chávez, e especialmente, o role jogado por um dos seus atores, a comunidade científica do IVIC. Tudo isso, identificando o acionar político dos atores chaves responsáveis

KEYWORDS

Scientific and technological policy (STP) of Hugo Chávez; Venezuelan scientific community; IVIC; science and power; science and policy

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dessa política, quer dizer, apontando quê poder exerceram, ganharam ou perderam sobre o processo de elaboração dela.

Los científicos del IVIC en la evolución de la política científica y tecnológica del gobierno de Hugo Chávez

RESUMEN
Al final del año 1999, la llegada de Hugo Chávez a la presidencia trajo consigo cambios institucionales importantes para Venezuela y para la institucionalidad de la Ciencia y la Tecnología. Algunos autores hablan de una ruptura del “contrato social” de la comunidad científica con el Estado con la entrada de una nueva parcialidad política o politización, así como también, una sustitución de la toma de decisiones de la comunidad científica tradicionalmente responsable de la dirección de la política de ciencia y tecnología - en la que la comunidad científica del IVIC había sido un actor históricamente influyente, cuando no dominante- por otros actores de la sociedad venezolana. El presente estudio busca dilucidar los cambios evidenciados en la Política Científica y Tecnológica del gobierno de Chávez, y especialmente en el rol jugado por uno de sus actores, la comunidad científica del IVIC. Todo ello identificando el accionar político de los actores claves responsables de esa política, es decir, señalando qué poder ejercieron, ganaron o perdieron sobre el proceso de elaboración de la misma.

1. Introduction

“A government’s scientific policy can be analyzed by looking at the Republic’s new official bodies and laws introduced and implemented” during that period (Rangel 2008). We might add that this can also be analyzed by studying the actors involved, characterized by the role they played in the policy-making process.

Furthermore,

when analyzing Science and Technology Policy (hereinafter STP) appropriately, it is necessary to reflect on the public policymaking process itself to make explicit the central issues in this process which need to be taken into account when analyzing the policy in question. (Bagattolli 2013, 5)¹

In the recent literature on Public Policy, policies per se are considered the result of the political game – politics – in which the different actors and interest groups are involved (Aristimuño and Aguiar 2015). STP design is subject to this “political game” and the development of science and technology (hereinafter S&T) agendas occurs within a “tissue of relationships” among the participant actors.

In the disputed territory where politics takes place, the uneven distribution of power is evident among the actors involved, making things problematic for the democracy and rationality usually associated – at least ideally – with this process (Bagattolli 2013; Dye 1992). That said, policy can be deduced as the product of politics, the space where power circulates, and is administered and disputed (Weber 2000).²

¹All excerpts were translated by the authors.
²This study draws from the notion of an actor’s power developed by Lukes (1974). Lukes believes that an actor possesses power over others insofar as “A exerts power over B when A affects B in a way that runs counter to B’s interests” (Lukes 1974, 27).
One of the attributes making up public policy and justifying the present study refers to policy as being interpreted and implemented by public and private actors with different readings of the problems, solutions, and their own motivations or interests. The “visibility” of an issue – that is, its identification and hence the determination of its relevance – is the product of a conceptual schema (Avalos and Antonorsi 1980) expressed by the actors. This is because

social problems are not objective entities manifested in a natural way in the eyes of the whole world, but, in order to become such, they have to be mediated by the conscious activity of actors with specific interests in making such conflict visible. (Bachrach and Baratz 1963; Lukes 1974)

Varsavsky (2013) deems “ideological” any activity that can be used in different ways. Thus, science is ideological insofar as actors with different values and interests often propose different uses of it by prioritizing and/or determining specific “fields of relevance” consonant with such aspects. Therefore:

The overcoming or persistence of a conceptual schema in the field of science policies is not always confronted within the rules of scientific debate for two reasons: one, we find ourselves in a field that is only partially technical, and far more ideological and political; two, there is usually a noticeable asynchrony between the speed of both social change and ideas. (Avalos and Antonorsi 1980)

Against such a background, the analysis of STP design considers “issues” arising “out of a complex process woven by interactions over time, carried out by a group of actors and often does – change over the course of time” (Oszlak and O’Donnell 1995, 16). In this vein, one of the aims of this work is to cast light on the causes and consequences of the change of actors embedded in the process of developing recent Venezuelan STP.

In recent decades, new aspects have been incorporated into one of the best-known analytical STP frameworks in Latin America, the “Sábato Triangle” ([1970] 2011). Those elements reveal even more facets and dimensions. Politics, finance, groups, and lobbies with multiple interests have proved crucial in the evolution of STP.

As part of this more complex reality, it is also recognized that the scientific community (hereinafter SC), an influential actor in this policy, is not, nor has it ever been, a monolithic block, but a problematic notion, suffused with the disciplinary structure, class differences, and ethnic origin of its members, as expressed in differences in power and so on. Its tensions have surfaced over time in the search for access to quotas of power and for the establishment of a variety of interests within it in order to gain credit and authority (Bourdieu 1976). Other studies in the STS field have also conceived the SC and its actions as being conditioned by its relationship with non-scientific actors (transepistemic arenas) in an effort to obtain resources (Knorr-Cetina 1992). In this work, we present a refraction of the idea of transepistemic arenas as a space where scientists and non-scientists operate:

resource relations – that is, relations resorted to or on which one depends for inputs or support. Transepistemic arenas of symbolic action appear as the locus where the establishment, definition, renewal, or expansion of resource relations are negotiated. (Knorr-Cetina 1992, 153)

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3(Social) actors are individuals, groups, or organizations – usually not monolithic – participating in a social (and political) game; they have a political agenda; they control some relevant resource; and they have, accumulate, or lose strength on their way and can turn events to ensure the viability of their agenda (Matus 1996).
Building on this idea, we probe into the loss of strength of an institutional group of scientists, and the control or capture of the public scientific space by another group of formerly subordinate scientists as well as group of actors outside the scientific field.

National STP before the Chávez administration was characterized by its ownership by and for scientists (Avalos 2007). While STP, or the social actors at the forefront of it, was not exempt from the bipartisan environment of the day, the conception of “peer review” always took precedence over how to do and direct scientific activity. Certainly, there is evidence that there was a scientist for whatever party happened to be in government. However, some actors argued that “the CONICIT did not politicize itself. The SC acted more as a politician from COPEI or another party, than as a SC” (Avalos, personal communication, November 1, 2017).

Several studies have shown how this “politicization” of STP meant a “social contract”, where the direction of STP was left to scientists with almost no interference from the government, rather than goals shared by the participants (in this case, the government and the SC). Thus, the SC negotiated with the government of the day – not without conflicts and differences – therefore scientists would be in charge of STP in tune with the party in the presidential palace during the government’s administration.

Consequently, it can be understood how the entity recognized in the latter half of the twentieth century as the SC became the dominant political culture in the orientation of the state in science and technology, to the point of taking charge of the main body responsible for Venezuelan STP, the National Science and Technology Council (CONICIT), and major institutions in the scientific and technical knowledge production like the Venezuelan Institute of Scientific Research (IVIC) (Avalos and Antonorsi 1980; Roche 1992, 1996; Texera Arnal 1983; Vessuri 1984).

The IVIC played a fundamental role in the leadership of the Venezuelan SC due to the key parts played by many of its members in defining and controlling national STP (Vessuri 1984). The first president of the CONICIT was an IVIC scientist, Dr. Marcel Roche. “From the outset, the IVIC played a paradigmatic role in the Venezuelan SC […] its graduates and researchers went on to strengthen other institutions and disseminate their patterns and ideals of quality” (Vessuri 1997, 7).

To visualize the levels of influence – in our case, the power wielded by IVIC researchers over STP – it is necessary not only to focus on the power of the reputation and position of individuals in organizations, but also on the real policy decisions and how the preferences of an elite are adopted by other groups (Ham and Hill 1993).

In this vein, this group’s power was clear when both the first and second National Plans for Science and Technology 1976–1980 and 1986–1988, that were part of the national plans at the time, were developed by scientists at the IVIC as presidents of the CONICIT (Roche 1992, 1996).

This is particularly striking when one realizes that, of the CONICIT’s nine presidents (1969–1999), four were IVIC scientists, and that when an IVIC scientist did not hold this post, they did hold the one of Vice President or others on the CONICIT’s Board, which lay at the heart of the body’s decision-making, or in presidential posts of its various Standing Committees, like for example the Standing Committee on STP (Laya 2018).

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4The two-party system – Democratic Action and the COPEI – was a phenomenon characterized by the alternation in power of both political parties, starting in the late 1950s.
5See works by Requena (2003), Avalos and Antonorsi (1980), and Roche (1996).
6We refer to Elzinga and Jamison’s taxonomy (1996) of Political Cultures present in the STP.
Moreover, of the six Ministers of State (without portfolio) for S&T during the period 1979–1992, three were IVIC researchers, not to mention the IVIC’s participation in the creation of various other research centers and foundations that helped to strengthen national scientific activity. This shows that the IVIC was indeed a social actor of considerable political and technical weight in the development of Venezuelan STP (Laya 2018) over the thirty years leading up to the Chávez government.

Authors like Avalos (2007), Freites and Ruiz Calderón (2008), and Mercado, Sanchez, and Testa (2014) describe the actors who took up the reins of national STP under Hugo Chávez’s government replacing the traditional actor, that is the national SC. López and Vessuri (2012) clarify how this influenced the IVIC.

With the new institutional framework set up by the Chávez government through the creation in 1999 of the Ministry of Science and Technology (MCT), powers that historically belonged to the CONICIT (“scientists in general”), such as the development of STP (Avalos 2007), passed into the hands of the state in 2001. There was thus a shift from a horizontal, intersectoral model (in which each entity devoted to scientific and technological activities was attached by affinity to a ministry) to a vertical model, which needed to have the largest possible number of operational entities and research centers under its supervision in order to succeed as one of the mainstays of the new society (Requena 2003).

At this point, the questions that follow are, who directed and defined the development of such instruments and institutions as the MCT, the National Fund for Science and Technology (FONACIT), the Organic Law of Science and Technology (LOCTI) and its reforms of 2005 and 2010, the Law of the IVIC and its attempted reform (2010), all of which comprised the bulk of the Chávez government’s STP? Did the IVIC’s scientific elite stop participating in the development of Venezuelan STP to make way for other actors? Or did another faction of the same group force its way in? If so, what values and interests did that “other” SC have vis-à-vis the “traditional” SC? Has there been a new configuration of Venezuelan Academic Culture in recent years? Are there any nuanced breaks or continuities?

For methodological purposes, we take the periodization of Mercado, Sanchez, and Testa (2014), marking three stages of STP during the Hugo Chávez administration. The authors’ study ran up to 2013, as this study focuses on STP during the Chávez government we have made 2012 our cut-off point – the year President Chávez died. These stages are conditioned by different political conceptions, despite occurring under the same government, and are characterized by a series of historical, sociopolitical, and institutional milestones (Mercado, Sanchez, and Testa 2014). We also include the perception of important events for the purposes of this work, through interviews with people involved in the Chávez government’s STP decision-making and with those who were, in one way or another, opposed to it.

2. The Chávez government’s STP model

To understand the characteristics of the model employed by Hugo Chávez’s government, it is appropriate to establish an official diagnosis of the state of S&T in Venezuela at the time. First of all, the National System of Science, Technology, and Innovation (SNCTI)
was viewed as being in an incipient state, unable to provide answers to the problems affecting the Venezuelan society of the day. This was largely because research activities were conducted mostly in universities and a handful of institutions in a rather dispersed and isolated way, with little coordination and the absence of explicit policies or well-defined priorities (Genatios 2000).

In addition, the share of the public and private productive sectors in terms of Research and Development (R&D) activities was almost non-existent, or limited, to say the least. Furthermore, financial investment by the state in S&T had been less than 0.5% of the gross domestic product (GDP), and the aforesaid absence of the private sector persisted. The number of active researchers (0.45 per one thousand inhabitants) was lower than that recommended by international agencies like UNESCO to ensure adequate development of the sector (10 researchers per one thousand people). In concrete terms, this represented a deficit of approximately 18,000 researchers (Genatios 2000).

In this context, the newly created MCT decided to work toward consolidating an SNCTI which, of course, respects cultural aspects, and coordinates and harmonizes the various different sectors and actors, takes into account people as a key element, makes people the object and the subject of its action, and, moreover, recognizes knowledge in science and technology as the priority object, taking into account the need to generate productive growth and social equity as basic fundamental elements for economic and social development in order to work toward a country that is caring in its growth. (Genatios 2000, 65)

There is something here that is unique to the Chávez government model in comparison to the scientific policy styles that took place in Venezuela until then: namely, the idea of other actors’ participation and people being taken as the “object and the subject of its action.” This corresponded to what began to be called the “momentum of a new scientific and technical culture,” framed within the new Constitution, which established new conditions in the movement “from a society of the socially, culturally, politically, and economically excluded to a society based on social inclusion and social justice as the basis for the development of a participatory democracy” (MCT 2006, 25).

The emphasis of the Chávez government’s proposal was widely publicized, as was its respect for diversity and emphasis on knowledge dialogue, as well as its critique of the individual/researcher-centered model, typical of the SC up to that point. In contrast, it envisaged a model focusing on historically excluded sectors through active participation, with the SC as just another actor of the SNCTI.

This translated into the inclusion of non-traditional actors in the process of both developing and implementing STP. The actors included organized communities, fishermen,

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8The government program called the Bolivarian Alternative Agenda (1998) expresses the origins of the concept of participation in Chávez’s group: “Education, culture, science, and technology contain the fundamental ideas of Robinsonian thought (Simón Rodríguez, a national hero), in terms of the welfare of society, human solidarity, and the valuation of political ethics. The Democratization of education, culture, science, and technology. That is to say, placing them under the responsibility of the entire social body and not leaving them in the hands of the elites” (Bolivarian Alternative Agenda 2014, 39).

9This idea is not exclusive to Chávez, but responds to the international debate on science at the time about different models of doing science, for example, “Mode 2” proposed by Gibbons (1994) and the post-normal science proposed by Funtowicz and Ravetz (1993), among others.

10As part of the research program of the IVIC’s Science Studies Department, there were a number of graduate theses aimed at analyzing aspects and components of the new processes triggered by the new public policy. See, among others, Luna (2004), and Aray (2006).
farmers, and other factions of the SC in tune with this view of how to do science and technology. The present work places special emphasis on this aspect because the inclusion of other actors seems to have in some way affected the customary participation of the SC, and particularly the SC of the IVIC, which is the primary object of study of this work.

We show how this came about, which actors were included and/or excluded, the levels of influx and reflux of power by the IVIC’s traditional SC in this process, as well as its degrees of consensus and dissent regarding the Chávez government’s STP, which is measured in terms of the presence/absence of our object of study, as described above.

3. First stage

3.1. “Left-wing government: partial transitions” (1999–2002)

The first profound change in science policy was done in the role and nature of the CONICIT. Its two main functions – developing STP and financing scientific activity – passed to the hands of the MCT, which had greater political clout and funds to carry out its tasks, such as the development and implementation of the National Plan for Science, Technology, and Innovation (PNCTI). The CONICIT was thus relegated to just another institution under the direction of the MCT. Equally important in this period was the development of the Organic Law of Science, Technology, and Innovation (LOCTI), finally enacted in 2005.11

The arena for STP development in Venezuela began to change. This was largely determined by changes in the traditional players in the structure of government. New faces intervened in and across the political board. Chávez’s circle was strongly influenced by groups in the academic community at the Central University of Venezuela (UCV) (Casanova 2016).12 An expression of this was that the first Science and Technology Minister, Dr. Carlos Genatios, a young lecturer at the UCV, was not from the traditional SC, despite being an engineer with sound academic qualifications.

Furthermore, with the IVIC’s new affiliation13 to the MCT, the law that governed it was overhauled in 2000. The reform established that the MCT would be responsible for choosing members of the Institute’s Directive Council without needing to go to the IVIC’s Researchers Assembly (AsolnIVIC) as it did previously (López and Vessuri 2012). This situation denotes a shift in the correlation of forces. The AsolnIVIC was relegated to a space for researchers but without being invested with power as it was by the old regulation, where nearly everything had to go through the Assembly, especially the selection of Directive Council members, and, in some cases, even its decisions.

Here, it is worth asking one of the questions that underpins this work: whether the IVIC had been, through its Directive Council, a kind of bridge for its leadership to get into the CONICIT (Laya 2018), where did that hegemonic faction go when the CONICIT was replaced by the FONACIT and the MCT in the context of a new scientific culture? Moreover, what faction of the group of IVIC researchers was beginning to form part of the institution’s Executive Council and how did it influence the new national STP, if at all?

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11With the LOCTI and the existence of the MCT there was an increase of the role of the State and a decrease in the leadership of the researchers group (Avalos, 2009, 19).
12The Chávez government’s 1998 project, the Bolivarian Alternative Agenda, was developed together with the UCV’s academic community, which had already developed alternative political projects to the country’s reality at the time (Casanova 2016).
13Previously attached to the Ministry for Health and Social Assistance.
According to some authors, Hugo Chávez’s rise to power was an expression of the “ascent to the national government of a new social and political group with which the SC had established certain ideological – and even emotional – connections. However, it needs to be remembered that it also had few representatives to act as valid partners with the new leaders of the government” (Freites and Ruiz Calderón 2008, 2). On this subject, Luis Marcano\(^{14}\) had to say:

As such, the IVIC had no active participation in the creation of the MCT. Had it not been for certain individual researchers who expressed sympathy for the new government, its presence would have been marginal. (Marcano, personal communication, September 28, 2017)

This “lack of partners” or their inadequate political heft when it came to weighing the forces required and establishing an agenda during the decision-making process of Venezuelan STP resulted in considerable tension between the IVIC’s (traditional) scientists, the SC in general, and those steering STP on behalf of the new government.

Amid all this friction, an evident early tension emerged regarding the reform of the regulation and constitution of the IVIC law:

In the consultation prior to approval, the institution’s community of researchers requested the inclusion of representatives of public and private production bodies in the Executive Council, as well as the creation of a Scientific and Technological Planning Commission and the establishment of the chair of Technologist. None of these novel aspects were incorporated in the ministerial proposal ultimately approved. (Freites and Ruiz Calderón 2008, 3)

Marcano states that

regarding the reform of the IVIC Law, a consultation with researchers was held through their assembly and the assembly of the authorities of the day. The recommendations of the researchers sympathetic to the government of the day were taken into account in their entirety. (Marcano, personal communication, September 28, 2017)

These sympathetic researchers were Dr. García Sucre\(^{15}\) and Dr. Padrón, who drafted the framework document of the IVIC law in working meetings with the Ministry.

Another situation of tension was experienced over the consultation for the development of the LOCTI, where “two political practices were at odds: on the one hand, the urgency with which the Science and Technology Minister sought to approve it; on the other, the disregard for the country’s researchers’ observations and considerations” (Freites and Ruiz Calderón 2008, 2).

In sharp contrast with this description of the situation,

it is necessary to emphasize the highly active participation of the researcher Máximo García Sucre in the [LOCTI] discussions. It is also important to note that García Sucre and other university researchers constituted a significant part of the drafting committee of the Law coordinated by the MCT authorities of the day. (Marcano, personal communication, September 28, 2017)

Thus, the customary coalition heading national STP gradually shifted, affecting the IVIC and its influence over it.

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\(^{14}\)Deputy Minister for S&T Planning and a member of the IVIC’s Executive Council as a representative of the MCT as of 2003–2009.

\(^{15}\)An eminent member of the traditional leadership and Board member of the Engineering Institute Foundation. Head of the IVIC’s Molecular Physics Department, Head of the Center for Physics on two occasions, in 1971 and 1987.
Authors like Freites and Ruiz Calderón (2008) claim that the MCT “was, for its first ten years, a department directed by civilian university professionals, more distinguished for their political than their scientific careers” (Freites and Ruiz Calderón 2008, 4). Other authors believe that the key actors in the direction of Science, Technology, and Innovation (hereinafter STI) after 1999 were mainly university lecturers, “advised by experts qualified in these areas, together with a group from the CONICIT’s previous administration, at least in this first period” (Mercado, Sanchez, and Testa 2014).

In this context, the consultation with the AsoInIVIC over the election of the Institute’s director was taken into account under Carlos Genatios’ leadership of the MCT: the AsoInIVIC re-elected Dr. Egidio Romano for the period 2001–2004, after completing his first term during the period 1997–2000, and so maintaining a degree of (political) harmony in the process.

Later in this same period an event took place clearly differentiating at least two factions of the SC. The national oil workers’ strike16, initiated by sectors of the country’s political opposition and ending with a coup d’état in 2002, forced the different sectors of society to take a stance, and the SC was no exception. More specifically, the IVIC split into two sectors: one pro-government, the other opposing it.

The fact that the country’s main oil research institution, the Venezuelan Institute of Petroleum Technology (INTEVEP), bowed to the oil strike brought government intervention both in it and in Petróleos de Venezuela, S.A (PDVSA), dismissing the bulk of professional staff and leading to a significant loss of technical knowledge and management in the main component of the Venezuelan economy (Mercado, Sanchez, and Testa 2014).

AsolnIVIC scientists at the IVIC expressed their opposition to government intervention in a letter published in one of the world’s most prestigious scientific journals, Nature. They declared that the government’s actions placed the country’s scientific activity at risk, constituting a persecution of freedom of expression and a manifestation of “political violence” by the government (Nature, 2003). In practice, however, it involved a confrontation between two models for making STP. As Ovidio has put it:

The shift in science-policy decisions from the stance taken by scientists regarding politicians not interfering with scientists in “their affairs” and the state consequently limiting itself exclusively to funding, toward greater involvement of state and society, who demand a rethink of strategic tasks and the establishment of research priorities and agendas with a marked social emphasis, has given rise to tensions and disputes; ultimately, it has generated a crisis in the field of the SC. At the same time, the democratization and demystification of science has impacted on the ethos of the SC. (Ovidio 2005, 19)

The actions of the national SC are certainly understandable, particularly those of the traditional wing of the IVIC, which acted in line with this in defense of their values and interests. We mention the traditional wing because, faced with the letter in Nature, another faction of IVIC researchers, grouped around what came to be known as the IVIC Workers’ Assembly (ABTIVIC), flew to the defense of the government and its actions,

16See Lander (2017) for a political contextualization, and Canino and Vessuri (2005) for a narrative of one aspect of the days of the oil strike. Lugo (2007) also recounts how the government re-established oil activities after the strike through new scientific and technical policies.
arguing in favor of its support for the science sector of the day, and legitimizing the democratic way it was elected (Science 2003). In the words of one of its founders, Dr. Viloria:

The ABTIVIC was a space for political discussion that incubated many of the changes introduced in the IVIC between 2004 and 2011. (The list is a long one; most of these projects were not continued.) It assessed the authorities, the Director, the Directive Council, and we authorities let ourselves be assessed in turn. (Viloria, Personal communication, October 30, 2017)

These two factions are an expression of the widening of the gaps between the traditional SC and the government, and what came to be called the “politicization of science,” in particular of the IVIC. This evolved into a debate over the role of STI in the national political plan without channels for any mediation between the state and the SC (López and Vessuri 2012). The traditional wing of IVIC researchers would be left behind, in contrast to the progress of the group represented in the ABTIVIC and one of its leaders, García Sucre, who would later maintain a leading role at the helm of the Institute, with a pronounced influence on and participation in STP during this government.

4. Second stage (2003–2008)

4.1. The control and rebuilding of the state: the transformation of the STI model

At the start of 2003, once the government managed to overcome the oil strike and the coup d’état, a number of political and economic adjustments followed with a view to stabilize the country. These adjustments affected all sectors of Venezuelan society, including STI.

All this was achieved through a government strategy that, in response to the fiscal and economic constraints after the failed coup attempt that briefly ousted Chávez in 2002, launched the so-called Bolivarian Missions, which strove to reach out to those strata of the Venezuelan population marginalized by traditional state structures and sought their support in the face of a presidential referendum scheduled for 2004. The strategy achieved its aims, consolidating the missions as parallel structures to the state ministries and becoming a policy that featured in the government thereafter (López and Vessuri 2012).

The most important milestones to study at this stage in regard to STP are the development in 2004 “of the National Plan for Science, Technology and Innovation (PNCTI) 2005–2030, the reform of the LOCTI in 2005, and the creation of the Science Mission” (Mercado, Sanchez, and Testa 2014, 328). We pay special attention to the IVIC’s influence over the development of these policies.

The year 2004 saw the drafting of the 2005–2030 PNCTI. About this process, it is important to highlight the outlook under which it was developed if we want to understand who were the actors invited to take part. These were “new actors and knowledge traditionally excluded” in order to carry out a “critical review of the conceptual and epistemological bases that have until now dominated the way we understand scientific and technological creation, and the principles that establish the relationships between state, society, and knowledge” (MCT 2005, 9).

Against this backdrop, faced with the political tensions between the traditional SC and the government as a result of the coup d’état and the measures taken by the latter against

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17Senior Researcher at the IVIC’s Center for Ecology. Deputy Director of the Executive Council 2004–2007. IVIC Director 2008–2011.
the INTEVEP, a call for a roundtable discussion to redirect the ways of conceiving the creation of traditional scientific and technical knowledge met with resistance from that faction of the SC and with the wing of IVIC researchers identified with government.

This was because a few IVIC scientists answered the government’s call. One of them was García Sucre, part of the group of IVIC scientists who supported the government and joined in the consultation process to develop the plan. The ABTIVIC, led by García Sucre representing the IVIC, also played an active role in the 2005 LOCTI reform:18

In general, the legislation wanted basic research to be state-financed, giving the ministry the power to evaluate and select the programs and projects likely to be funded by it according to priority development areas, while more applied research, oriented more toward the solution of specific problems, should also be encouraged by the state, but mainly by the public and private productive sector through contributions to or investments in STI activities in the company itself or any SNCTI institution. (López and Vessuri 2012)

With the LOCTI, the selection and consequent funding of research projects were centralized in the MCT19 by the coalition of the SC supporting the government and its political plans, this fact represented a threat to the traditional SC’s autonomy because STP was being defined under an ideology that gave high priority to what was termed “science useful to the needs of the people,” leaving out or reducing resources to “the other types of science.” This shows how the traditional wing of the IVIC gradually lost ground within the power relations present in national STP.

The Chávez government made a play for the IVIC in order to ensure control of one of the main national research centers and therefore scientific activity as a whole. So, Máximo García Sucre from the faction sympathetic to the government (the ABTIVIC) was chosen to lead the IVIC for the period 2004–2007, despite the decision of the AsoInIVIC, where eighty scientists rejected his application and only ten decided to support it.20 This was perceived by the traditional IVIC’s SC as “the beginning of the interference of official policy in the Institute’s academic decisions” (Conde 2009), a threat to one of the values expressed in the ethos of national SC21 thus far, namely, freedom of research (Mercado, Sanchez, and Testa 2014).

This can be questioned given the precedents in other works (Avalos and Antonorsi 1980; Requena 2003; Roche 1996), which show how science and its institutional spaces in the administrations leading up to the Chávez government were not exempt from the phenomenon of party-politicization of the public sector – the IVIC included. In this regard, Requena points out that

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18This law was initially included in the package of enabling legislation adopted in 2002, but its enactment was postponed. Its content was redrafted by the National Assembly and approved unanimously by the political forces in the Venezuelan parliament in 2005, entering into force on January 1, 2006. Shortly after that, an important regulation was approved geared to regulating Article 42 of the Law, about the financing of scientific and technological development in the country. The law is largely a response to the new Venezuelan political framework, characterized by the presence of new actors and the formulation of government strategies and purposes that were, in whole or in part, different to those that had prevailed to date (Avalos 2009, 15).

19Contributing companies could invest their money in their own scientific development projects, or else give it to the science centers and universities, or deposit it in a state fund that would decide on the destination of the contributions (SciDev.net 2007). This gave some freedom to companies and their related research centers.

20While the IVIC law placed the choice of the Institute’s Director in the hands of the executive, specifically the MCT, it was usual practice for the IVIC’s SC to choose their Director through the AsolnIVIC.

21Avalos (2007) characterizes the national SC at the forefront of STP as a group responsible for promoting a Mertonian version of scientific activity (universalism, communalism, disinterest, and organized skepticism as a reflection of its ethos), very much oriented by the idea of copying, as far as possible, what people were doing in the industrialized countries (Avalos 2007, 6).
Although its [CONICIT’s] first directors made great efforts to act within eminently technical parameters, over the years and the administrations the Council was, at one time or another, a political body of the ruling party. Thus, the CONICIT had its Adeco, \(^{22}\) COPEI\(^{23}\) moment [...] (Requena 2003, 140)

For its part, with a minority of scientists backing its plans for the direction of the IVIC, the Chávez government managed to secure its influence and bring about change. On this point, it is worth quoting the S&T Minister at the time Dr. Yadira Córdova who states that for the selection of the Institute’s authorities they wanted to preserve the forms:

> Of course there was a condition, which was the identification with the national policy: you can’t have someone who doesn’t share national policy leading an institution as important as the IVIC, so, there’s a condition, but behind that condition, there’s also the gathering of credentials, careers, everything that establishes rules, suitability, ethics, all those elements. (Córdova, personal communication, October 19, 2017)

Thus, under García Sucre’s direction, the IVIC finally showed signs of a gradual alignment with government STP (López and Vessuri 2012):

> The Institute’s mission to orient its activity to the demands and needs of Venezuelan society, through a growing interconnection with social programs impacting communities was consolidated as IVIC institutional policy (Informe Anual, 2005). A new slogan was launched: “IVIC. Science for the people, with the people”. (Informe Anual, 2005, 604–605)

Bureaucratic culture used academic culture – which was anything but monolithic – to satisfy its interests when a faction of the IVIC’s SC took advantage of the correlation of political forces and interests in common with the bureaucratic culture, expressed in the Chávez government, to take over the Institute’s main posts. This case appears then as an expression of the Chávez government’s hold over STP at the time and, in particular, its hold over the IVIC and its researchers.

At this point, it is important here to contextualize the political situation of the Chávez administration. Chávez was a leader who had by then shifted his discourse toward a “socialist” project, as he announced at the World Social Forum in Porto Alegre, Brazil, in 2005, where he stated that the “way forward is socialism” (Landers 2017). This shift to the socialist left would bring about substantial changes in the ways national STP was developed.

One way this manifested was the deepening of the idea of the missions, with the creation of the “Science Mission” (2006), which the S&T Minister at the time believed was “one of the most coherent efforts of the [Bolivarian] Revolution in S&T” (Córdova, personal communication, October 19, 2017). According to one of its main promoters, the Science Mission was

> A public policy tailored to produce an immediate impact on the country’s national science and technology system [...] the other kind of impact is that aimed at transforming structures, removing practices, and changing mindsets [...] (Lanz, 2006:103; in Requena 2011).

Also, the Science Mission “was, like the other missions, seeking to bureaucratize the process of implementation of public policy” (López and Vessuri 2012). Within the framework of this mission, some IVIC professionals worked on drawing up projects and other

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\(^{22}\) Name given to people affiliated to the Democratic Action Party.

\(^{23}\) Name given to people affiliated to the Social Christian Party (COPEI).
initiatives linked to the strengthening of the so-called “Socioproductive Innovation Networks” and programs to popularize science in the areas of health, habitat, and food development and safety (IVIC 2006).

Apart from what this mission might mean in terms of the scope of public policy, it is interesting, for the purposes of this work, to identify the process that created it and, more specifically, who were the actors driving it. Who was involved and who was not? The sociologist Sonntag (2011) claims that the Mission’s design was made by a group of scientists active in the Chavist movement,24 once again without any consultation with scientific institutions, especially the country’s six autonomous universities, the Academies, and the Venezuelan Association for the Advancement of Science (AsoVAC). These were informed after the event, like-it-or-lump-it-fashion. (Sonntag, 2011:106; in Requena 2011)

This description reveals how the new coalition (Bureaucratic Culture) establishes its policies above and beyond the traditional coalition (Academic Culture). And this is so because the dynamics of the Chávez government’s missions were characterized by the establishment of structures parallel to the state in order to give more strategic freedom to its political plans or, one might say, greater political power over different sectors, including STP.

After reviewing the most important policies in this period, a clearer picture is formed of the changes in STP motivated by (Varsavskian) ideology and interests around the STI present in Hugo Chávez’s government. Against this background, as Mercado, Sanchez, and Testa (2014) state, “the changes in institutional dynamics were intense.” Such changes were due to two causes: (1) wholesale social, economic, and political change (the National Project of the Bolivarian Revolution), and (2) the strategic interaction of individuals within a community enveloped in a policy that competed for power and directed efforts to develop expert means to steer policy.

This period ended in 2007,25 with the political change of direction to radicalize the “Bolivarian Revolution,” which demanded other ways of doing STI (Mercado, Sanchez, and Testa 2014) and therefore continued to have an impact on the traditional national SC and, especially, on our work’s object of study: the SC of the IVIC, an issue we will continue reviewing in the next period.

5. Third stage 2008–2012

5.1. Socialism: the radicalization of political discourse and the regression to supply-based models

After the failed attempt by the government to reform the National Constitution in 2007,26 “political discourse became radicalized” from 2008 onwards, shifting attention to a discourse on the development of useful research that directly benefited the population (Mercado, Sanchez, and Testa 2014). In line with this change of direction, the Minister for S&T at the time, Professor Héctor Navarro,27 emphasized “that S&T has to be applied

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24Epithet given to supporters of the Chávez government.
25September of that year saw the creation of the National Economic and Social Development Plan, First Socialist Plan (2007–2013), which radically changed the course of Chávez’s policy in all sectors.
26The constitutional reform bill sought to explicitly reflect the establishment of the socialist model.
27A graduate of the Faculty of Engineering at the UCV, Navarro headed the Ministry of Education, Culture, and Sports in 1999, the Ministry of Higher Education in 2002, and the Ministry of Science, Technology, and Innovation in 2007–2009.
to meet the needs and solve the problems of the Venezuelan population” (Prensa MCT 2008). Following Knorr-Cetina’s idea, we suggest that this event is representative of what the author claims in terms of

What matters for policy – including what appears as scientific policy – is not an “intrinsic value” of research work, but the convertibility of the predicted resource – be it a scientist or a scientist’s work – in the “currencies” in which such notions as value or utility adopt their meanings through an indicator. (Knorr-Cetina 1992, 154–155)

Clearly, then, the currency of IVIC scientists lost validity in the context of the loss of value of canonical scientifi city previously controlled by the national scientific elite.

The concept of “scientific and technological sector” was falling short. The idea that knowledge production occurs only in the “sector” – an academic space, almost synonymous with university, which houses laboratories and scientists, and is governed by its own rules – while the rest of society demands and uses the products of their work, gradually became less and less useful for devising policies and strategies for scientific and technological development. (Avalos 2009, 23)

Under these circumstances, a new IVIC director was appointed, the aforementioned Dr. Ángel Viloria, another ABTIVIC member. The choice of Viloria was also the target of disputes from the traditional wing of the IVIC, being chosen by the Minister despite the IVIC’s Researchers’ Assembly not being in favor (Itriago Acosta 2008). In 2007, the Chávez government had managed to accrue all the resources raised through the LOCTI, at levels never before seen in the history of national STP (Mercado, Sanchez, and Testa 2014). The LOCTI “managed to increase investment in research and scientific development to 2.11 percent of Gross Domestic Product. The contribution made by the business sector was in total 54 billion bolivars (about US$2.5 billion)”28 (SciDev.net 23/05/07).

Shortly after that, the second reform of the LOCTI was enacted (2010), “this time without further consultation” (Mercado, Sanchez, and Testa 2014), opening up an even wider breach between SC and the government, and also sparking a “disassembly of the entire institutional apparatus that had been created in universities and companies to manage it.” The concept of SNCTI was also eliminated, the private sector was excluded, and “a biased view centered mainly on a hazy concept of liberating, socially useful research” was introduced (Mercado, Sanchez, and Testa 2014).

The reason for a new amendment to the LOCTI was that, according to the government, “most funds were tied up in private companies: in 2007, less than 6% of the money was placed externally. The new amendment forced companies to pay tax directly to the ministry, eliminating the two other investment options” and thus ensuring total control over such resources (SciDev.net 24/12/10). According to S&T minister Ricardo Menéndez:

The passing of the LOCTI Reform anticipates the promotion of a model of scientific research according to the fundamental interests of the Venezuelan people, not to the particularities of various private companies whose technocrats aspire to uncouple scientifism [sic] from the social realities of the populations. (AsoVAC 2010)

28Mercado and collaborators stress that “this figure must, however, be handled with care, because a significant percentage of what is registered corresponds to companies’ declarations of investment, which in many cases relate to projects that were not STI activities in any strict sense” (Mercado, Sanchez, and Testa 2014, 7).
According to Dr. Marisol Aguilera, president of the Venezuelan Association for the Advancement of Science (ASOVAC) – a voice for the traditional Venezuelan SC since the ’50s – “the [reform of the] Law was adopted without hearing the recommendations of the stakeholders: researchers, scientific societies, NGOs, or producers” (Small Carmona 2011). This is why the national SC “points out that the changes centralize resources and weaken the independence of research centers” (SciDev.net 21/07/11). A group of university researchers submitted an application to the Supreme Court of Justice revoking the reform of the LOCTI as unconstitutional. The scientists argued that this law “is dramatically slowing the development of science and technology in Venezuela” (SciDev.net 21/07/11).

The group stated that:

One of the fundamental reasons for challenging the LOCTI is its “ideological bias, [because], in Article 1, it enshrines as its goal the sole promotion of the development of knowledge that is framed in the creation of the Socialism of the Twenty-First Century, as expressed in the National Economic and Social Development Plan 2007–2013.” This means that only that research or those projects so oriented will be supported by the state, either in terms of authorization or the allocation of resources. This is a clear case of discrimination toward the scientific community and a loss of autonomy for all study centers working for the benefit of society from various viewpoints. (SciDev.net 21/07/11)

The government ignored these actions, choosing instead to press on with the new LOCTI and gain almost total control of STP.

In this period, “the institutional actors responsible for directing STI [came from] universities, with little training or knowledge in the fields of Science, Technology, and Society or STP, and with a deeply ideologized and politicized vision of what the activity ought to be” (Mercado, Sanchez, and Testa 2014, 333). Criticisms of ineptitude leveled at the leaders of lower and middle management became increasingly frequent. This can be inferred from the views expressed by former deputy minister Luis Marcano regarding the actors in charge of national STP in 2017, but largely forming part of the same group and practice before Chávez’s death:

Those who […] assume the design and instrumentation, monitoring and evaluation of STP through the ministry, with expertise in S&T, are certain researchers or lecturers close to the party or dominant group of the current government (PSUV and GPP).29 Their behavior responds to the guidelines of these political groups and the political program driven by these groups (see, II Plan de la Patria). (Marcano, personal communication, September 28, 2017)

The change also took place in one of the programs created twenty years earlier, when the SC was the public policy-maker, namely, the Researcher Promotion Program (PPI),30 later known as the Research Stimulus Program (PEI), where, according to the minister of the day, Menéndez:

29The United Socialist Party of Venezuela is the official party of the Chávez government. The Great Patriotic Pole is a space that brings together all pro-government forces, ranging from parties to social movements.
30The Program sought to encourage, support, and recognize Venezuelan researchers in order to strengthen scientific research in the country. The PPI included a fixed monthly contribution to researchers previously accredited as such by their peers. The high standards for accreditation as a national researcher within the Program invested them with prestige and recognized scientific activity as never before in the country. In short, this Program brought together a significant part of the national SC and also motivated it to keep producing knowledge with an ever dwindling monetary incentive for it” (Laya 2018, 19–20).
The central focus of research is not the subject, nor the individual; there is a particular product, which is research. The premise of this program’s change is founded not on giving a livelihood, resource, or money for the status of researcher, but granting it on the basis of a piece of research. (AsoVAC 2010)

According to the President of the National Observatory of Science, Technology, and Innovation (ONCTI), José Luis Berroterán, “a new group of actors will be added who do not necessarily have an academic title, but whose innovations or technological breakthroughs will give them the chance to opt for LOCTI-funded projects” (SciDev.net 2011). Another significant change was the creation of regulations for the operation of the Program, which were approved by the ONCTI’s Governing Council, authorized by Ricardo Menéndez, Minister for the MCT, thus repealing the PPI (ONCTI 2011). Both policies were implemented without consulting the actors of the SNCTI. Despite inclusiveness looming large in the STP leaders’ discourse, the SC was one of the social actors excluded.

In response, the national SC reacted again, categorizing the changes in the Program as “absurd,” “because the product of a piece of research is not something abstract; someone put it there and that was the researcher. Therefore the stimulus should be focused on him or her. The name proposed makes no sense,” said Dr. Marisol Aguilera, President of the AsoVAC (Small Carmona 2011). Aguilera also points out that:

Participation in the program is subject to a political condition. In order to become a member and qualify for the benefits, which include a six-monthly remuneration in accordance with a commitment to undertake research projects, it is necessary to have participated in innovation or research projects that have had a direct impact on social spaces, like communes [comunas], community councils, or social production units. (Small Carmona 2011)

In contrast, the Bolivarian Front of Innovators and Researchers (FREBIN) emerged in support of the government. The Front consisted both of the actors reflected in its name and “growers” (promoters of other types of S&T culture), as well as STI workers who ratified the “commitment to advance the construction of a socialist society.” In response to the measures taken by the traditional SC in the Supreme Court of Justice, this group came out to ratify its commitment to the Chávez government and “the various different programs it has implemented through the MCT” (FREBIN 2011).

This demonstrates the high levels of politicization of STP, and polarization of the national SC was explicit during this period, when unprecedented situations in the history of this public policy in Venezuela could be said to have been reached.

It also reflects a change in the development of public policy compared to previous periods of this administration, where the consultation of the actors making up the SNCTI played a considerable participative role when it came to drafting public policy, for example, in the case of PNCTI 2005–2030, the first reform of the LOCTI 2005, and other STP programs. The power of the group responsible for STP within the Chávez government is clear: it made decisions to the detriment of most of the SC, which significantly lost its influence in this policy, manifesting itself more in the form of resistance to the government’s actions in an attempt to regain its customary autonomy in scientific activity. The table below illustrates this more succinctly. We can see how command of STP shifted to a group from the UCV: these were mainly lecturers, rather than researchers or scientists Table 1.

31 A body designed [among other things] to monitor the SNCTI (Avalos 2009).
A striking aspect of the data in this table is the ministers’ short terms of office. In thirteen years of government there were eight ministers, the one who remained the longest in her post was Yadira Córdova (3 years); the others lasted barely a year. Significantly, from 2007 to 2012, the post was held by five different people. This may perhaps be associated with the levels of improvisation in this stage of radicalization of the discourse and recentralization of STP by the government. Another aspect that falls within the purview of this study is that, of the four IVIC directors present in this period, three belonged to the ABTIVIC, a group of researchers and workers who eventually replaced the decision-making power over the institute, which had previously been in the hands of researchers.

Another event that expresses the rift between the traditional wing of IVIC scientists and the government was the attempt to reform the IVIC law (2010), established by the Institute’s authorities under the guidance of Dr. Ángel Viloria. According to statements collected in an article in the national press whose title contains the question *A Science without Scientists?*, one small group of IVIC researchers stated that:

> The new legal instrument, it would seem, may govern life at the IVIC over the next few years […] it will be drafted without the participation of the researchers themselves and personal assistants, since only one researcher is present in the formation of the Commission, and they have been appointed by the Directive Council which has taken the review/reform initiative. Nor have assistants been appointed taking into account the views of this group. (AsoVAC 2010)

Contrasting with these opinions, this was not exactly a bill made without consulting the Institute’s researchers; there was another faction that did participate in the process, namely the ABTIVIC, which gradually became an entity parallel to the traditionally renowned AsolnIVIC. According to the director at the time Dr. Viloria it was through the ABTIVIC that the reform bill for the IVIC law was drafted,

> culminating in a proposal for the transformation of the Institute into the Venezuelan Institute of Science and Technology (IVECYT). After three years’ work, I submitted the draft of this bill to the MCT’s Directorate of Research and Development for reading and assessment in early 2011. (Viloria, personal communication, October 30, 2017)

Viloria also stated that after leaving his post as director of the Institute in 2011, “at the ministry, they took over the bill without crediting the ABTIVIC, badly adulterating its content (but not its structure), and brought it to an infamously futile public debate at the IVIC, which went nowhere, having been repeatedly sabotaged by unknown actors opposed to the project” (Viloria, personal communication, October 30, 2017). Many of these

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**Table 1. S&T Ministers during the Chávez administration and IVIC Directors. (Authors’ own production).**

| Name              | Period       | Original Institution | IVIC Director                        |
|-------------------|--------------|----------------------|---------------------------------------|
| Carlos Genatios   | 1999–2002    | UCV, Engineer        | Egidio Romano (Biology Researcher)    |
| Nelson Merentes   | 2002–2003    | UCV, Mathematician   | Egidio Romano (Biology Researcher)    |
| Marlene Yadira Córdova | 2003–2006 | UCV, Dentist        | Máximo García Sucre (Physics Researcher) |
| Héctor Navarro    | 2007–2008    | UCV, Engineer        | Máximo García Sucre (until 2007)      |
| Nuris Orihuela    | 2008–2009    | UCV, Physicist and Geologist | Ángel Viloria (Ecology Researcher) |
| Jesse Chacón      | 2009–2010    | Military Academy     | Ángel Viloria (Ecology Researcher)    |
| Ricardo Menéndez  | 2010–2012    | UCV, Geographer      | Ángel Viloria (until 2011)            |
| Jorge Arreaza     | 2012         | UCV, International Studies | Eloy Sira (Physics Researcher) |

Venezuelan S&T Ministers 1999–2012
actors opposed to the bill, it should be remembered, belonged in the government rank and file, and to the government party within the Institute.

In this light, it is clear how STP evolved under the Chávez government, which centralized it and gave it a top-down orientation, leaving aside the actors that comprised it historically like the vast majority of the IVIC’s researchers.

6. Closing remarks

The politicization of STP and the Institute, to which the traditional wing of the IVIC and the national SC both refer to, was part of the clash of different conceptions of the role of public policy – specifically, STP. We have shown how, under the Chávez government, the group supporting it within the IVIC confronted the traditional wing of researchers from both the IVIC and the national SC in order to impose their way of doing and implementing STP. This in principle could have been seen as the revelation or recognition of rifts within the national scientific community. But then, as the government grew stronger, in spite of its discourse around the expansion of social participation, it was in practice doing away with organized scientific activity, rather than altering the way this was socially articulated.

In this process of negotiation with unequal power relations, the traditional wing of the IVIC lost the influence it had had in the years prior to the Chávez administration. There was clear evidence of a move away from an STP dominated by scientists to an STP where the dominant actor became a controlling state-run group in alliance with a loyal minority faction of the SC. Toward 2007, one experienced observer remarked: “There has been a shift from a policy focused on science and administered by the leaders of the researcher community, to a policy which also falls within the area of technology and innovation, and is administered by state officials, that is, clearly assumed as public policy” (Avalos 2007).

Another way of viewing this phenomenon is through the taking of control of this area, where academic culture had had its customary hegemony by means of bureaucratic culture, which thus came to the forefront of the definition of STP in Venezuela. Now, almost twenty years after Chávez took power, the question arises as to whether the policy change had positive results. This would not seem to be the case as we have shown, and we will try to say why in these closing lines.

The Chávez government sought to reconfigure the role of the national SC in the development of the STP given the state’s changing role in said process. It went from being a passive, financier state that delegated the definition and orientation of STP to the SC (in the CONICIT), to being an active, centralized state that took over the development of STP via the MCT as a result of a new political project.

Unlike the pre-Chávez government, where the traditional wing of the IVIC held important positions within the bodies responsible for the development and implementation of national STP, especially in the CONICIT, this did not occur after 1999, when the IVIC faction aligned with the government and therefore played a greater role more like an executor than a policy-maker per se. Although, as we have mentioned, there was significant involvement from García Sucre and the members of the ABTIVIC, these characters did not hold positions within the MCT, the FONACIT, or other bodies that wielded influence over the development and implementation of STP, nor did they form part of the decision-making group in the field of STP, despite relations between them being good.
The politicization of national STP during this period resulted in the dismantling of the scientific and technical structure that had been set up until the late ’90s: not only were structures like the IVIC politicized, but there was intervention in the very dynamics of scientific activity through the limitation of resources targeted at ways of doing science other than those linked to “the needs of the people,” in accordance with the government’s criteria. This meant that other interest groups from the state had an almost central steering role in public policy, while, at the same time, relegating – or even excluding – the SC as just another actor within the SNECTI.

The construction of a new institutional structure founded on the premise of participative democracy at first indicated the inclusion of new actors in the development of national STP, but the events studied here suggest that inclusive practices in this public policy faded fast, until ultimately only a group of government party supporters prevailed, excluding the actors traditionally included (scientists and private companies) and those traditionally excluded alike, at least when it came to deciding STP.

This case exposes the consequences of the misuse of participation and codesign when difficulties are ignored and/or belittled. It is not easy to reconcile and balance the tensions between scientific rigor and open design, when the participation of the social bases is sought from the outset. This is not achieved top down, by decree, but needs to be developed over time in an effort of experimentation and respectful dialogue between the parties. The benefits of broader social participation that might have improved researchers, their previously excluded social partners, and the relationships between them, vanished leaving no more than a hollow caricature.

The events studied lead us to suggest that part of the misunderstanding or ignorance on the part of the new bureaucratic leaders about the meaning of the balances of national scientific and technical efforts, negatively prejudiced the Chávez government and its team, avoiding the formation of better relations with this sector and, more specifically, with the country’s top science institute, the IVIC.

The prejudice that accompanied their ignorance led to a rift not only with most of the IVIC, but with the SC as a whole, and in practical terms, it led to its destruction, leaving a rather unencouraging balance in terms of the impact of government-driven STP during its administration, especially after Chávez’s death, when the few remaining ties with the SC were cut. Our work leaves this issue open for future study.

Also remaining to be gauged is the impact of all this in bolivars and dollars managed by the government through the LOCTI and the FONACIT, and where this money was targeted, as policies are not solely measured by what they propose but, especially, by their results.

In conclusion, this work has tried to shed light on the intricate development process of STP in Venezuela in recent years, a political experience that, as the years passed, lost sight of its original goals and commitments. This invites a serious rethinking of the necessary strategic distance between science and politics, and science and power, a distance that has been defended by classical authors in the social sciences.

How can a balance be achieved between the autonomy of science and political commitment to political and economic agendas in today’s complex world? What happened in this case is also to do with the widely discussed barrier of the lack of a critical mass of competences to embark on a large-scale project of social transformation. Improvisation, opportunism, corruption, ignorance, arrogance are some of the terms that leap to mind. Yet these terms cloud what really happened during this prolonged period, which, as we
have begun to show, is far more complex and nuanced, and remains a challenge as yet unresolved.

We believe that our research opens a line of analysis deserving attention. We have tried to show how a regime change in Latin American countries, a new institutional framework, the politicization of policy-making and the ideological positions could affect STP and policy capacities built before. The social changes in policymaking and the changes in group interests that come into control of STP are a phenomenon occurring in other Latin American countries as well, so the paper contributes with a set of analytical dimensions to comparative studies of policymaking when a change of regime occurs.

To finish, we would like to emphasize the relevance of including sociopolitical analytical dimensions when considering the study of STP in Latin America, and the importance of advancing in the building of new methodologies of analysis for a better comprehension of this complex phenomenon in our region.

Disclosure statement
No potential conflict of interest was reported by the authors.

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