Responsible innovation in France. A proxy allowing agents of the political and economic fields to interact[1]

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ABSTRACT

This article examines the issue of responsible innovation in France. To describe its underlying mechanisms and logics, we retrace the advent of innovation in public policy and its reception in French firms, showing how responsible innovation has become the cornerstone of public-private interactions. The legal and administrative context of innovation in France, on the one hand, the emerging departments and managers of innovation in the large groups, on the other hand, participate in producing spaces where agents of the political and economic fields converge. Such situated interactions hinge on shared world views, values and tools. Innovation managers, executive directors of large firms, some French politicians and public servants seize upon responsible innovation and create areas regulated by specific norms and values. In these shared spaces, responsible innovation is the star object, the proxy for exchanges between the economic and the political fields.

Keywords: Innovation; Responsibility; Politics; Management; Research; Large Firms.

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[1] Translation by Gabrielle Varro.

INTRODUCTION

For approximately ten years now, innovation has been presented as the summum of French economics. The apparently sudden interest of the State is in fact part of a long political history, which gathered momentum in the 1960s, punctuated by several interventionist laws, whose ambition it was, and still is, to produce a "national system of innovation" (Freeman, 1995). The period bears witness to the "social construction of the public problem" of innovation (Bourdieu, 2012, p. 53). First conceived as *innovation through research*, then as *innovation by research*, the present-day situation postulates *innovation beyond research*. The French State aims to organize relations between Industry, Government and Academia, a configuration that some scholars have baptized the Triple Helix (Etzkowitz & Zhou, 2017).

In such a context, politics and economics are closely related (Bourdieu, 2005). Moreover, the accusation of "hyper-interventionism" (Lebaron, 2016) seems not to apply to the private initiatives that accompany innovation. The Public Investment Bank (also known as *Bpifrance*), as well as research tax credit, happen to be the primary financial resource for private innovation in France. As a result, in what way do the itineraries, practices and values of the agents of innovation transform interactions between politics and economics? Responsible innovation, defined here for the French context, emerges as the cornerstone of relations between the public authorities and the organizations. The very same responsible innovation is benefitted by the publicity the public authorities give it; it infiltrates the organizations thanks to their directors' determination, as well as to the importance of the personal itineraries of those I call innovation managers and to their positions on the question of values. Also, responsible innovation is part of the interactions observed between the public and the private sectors.

In this article, we scrutinize those transformations at the level of both private companies and public research institutions, applying Pierre Bourdieu's field theory. Studying responsible innovation in the light of this concept allows theoretically reconstructing social spaces regulated by laws where individuals are more or less able to participate in the battles induced by the agonistic nature of the field. Specific capitals and regulation permit agents to accumulate and use a certain number of resources that make them legitimate. Symbolic and cultural capital allows them to conquer spaces for self-expression which the logics of innovation then disrupt. We show how responsible innovation is pivotal for interactions to develop between the political and the economic fields.

In Part One, we present the laws that have structured innovation in France since the 1960s, illustrating the strong implication of the State. Our ambition here is to

demonstrate the strong implication of the State in the social configuration of the economy (Bourdieu, 2005; Etzkowitz, 2002, p. 139-144), a State striving to build a field of possibles for those individuals who want to become professionals (Chiapello & Gitiaux, 2009; Maitre & Bourdieu, 1994). This section reveals how this develops over the long term and allows observing how the notion of responsibility (Jonas, 2013) nourishes the Triple Helix configuration Government / Industry / Universities. This, in turn, is a chance to see how renewing political personnel (Michon, 2019) reinforces pre-existing dynamics.

Part Two allows us to broach the ways political injunctions were received in the private sector. We will show how industrialists had to cope with both political injunctions and organizational obligations. Private business at the time had to deal with political considerations and individual acts, while itineraries, values and ethics facilitated the emergence of the notion of responsible innovation.

The last part will broach the practices common to both the political and the economic fields, and the places where they meet. We explain how responsible innovation can be considered a proxy for their interactions. In fact, the State counts on private companies to let it pursue its ambitions for the energy transition as well as for other questions that can also interest the organizations (Bereni & Prud'Homme, 2019). These zones of interaction are produced and activated by a collaboration between managers of innovation, public servants and the top authorities in each field.

This article is based on a qualitative survey (interviews and observation). To study their activities, their itineraries and the positions they defend, we met with the innovation managers of three large French companies of public works, telecommunications and energy. Personnel of public and political institutions in charge of innovation were interviewed in order to document their habitual practices. We also analyzed legal texts and records of parliamentary hearings bearing on questions of research, innovation and industry. Our data also includes observation carried out in fairs, prize award ceremonies and areas dedicated to innovation in the large firms.

POLITICS OF RESEARCH AND INNOVATION IN FRANCE

Innovation through research

During the 1960s and 1990s, the "social construction of the public problem" of research and innovation (Bourdieu, 2012, p. 53) grew out of the creation of public commissions (Bourdieu, 2012, p. 47). Elected officials preferred to speak of basic research, applied research, and development research rather than of innovation. On November 16, 1966, the law proposing to "create public research organizations" came

before the National Assembly. On November 30, 1966, Paul Thillard, reporter, justified the creation of a certain number of public institutions. The verdict was indisputable and unanimous: France was sorely lagging behind her competitors. Mainly due to the progress of science (Gingras & Villedieu, 2010, p. 130), the Great War (1914-1918) had amputated a significant number of the dynamic members of French science: "the second world war plunged our country's science into a deep sleep, while abroad it flourished, producing the radar, rockets, jet engines, electronics, atomic energy, antibiotics".[2] The opposition exacerbated the sense of urgency; François Mitterrand compared France's skills in computer science to the competition between the United States and Europe. In a bipolar world focused on nuclear power and the Space conquest (Joly, 2017; Edwards & Hecht, 2005) the idea of a "techno-nationalism" (Edgerton, 2013, p. 150-158) *à la française* became all-pervasive in the political field.

To live up to that challenge, it was first of all necessary to reinforce the protection of intellectual property, by improving the law on patents and licenses. Protecting the fruit of research would not slow up innovation (Amable *et al*., 2006) but would prevent a "brain drain" and a loss of results. It would also call for tightening the links between public research and the private sector. Creating[3] the National Agency for the Commercialization of Research (*Agence Nationale pour la Valorisation de la Recherche,* ANVAR), a major part of the projected Law, therefore meant organizing and supporting relations between Academia and economics. Though passing from public research to development and applied research was unanimously considered inefficient, there was much disagreement about how to avoid the attempt of industry to cow, or even dominate (Thébaud-Mony, 2014) scientific research (particularly fundamental research) in the public sector and guarantee the autonomy of public researchers. The profession of research scholar decidedly called for a transformation, and the figure of the new "man of science" (Shapin, 2006), actor of a "science necessarily allied to industry" (Lamy, 2020, p. 23), seemed to take root in the political field. Alain Peyrefitte consequently seemed to be echoing a phrase of General de Gaulle's,[4] apocryphal but telling of the spirit of the time: "The onus to search – and above all to find – falls upon nations as it does upon industry, for fear of being irreversibly passed by."

The law "creating public research organizations" was published in the *Journal officiel* of January 3, 1967. It was the time of *innovation by research*, or the superiority of scientific work over innovation. On November 30, 1966, the debates on the law

[2] Speech by Paul Thillard.

[3] This law was debated in 1966 and adopted on January 3, 1967.

[4] Charles de Gaulle's phrase was wittier: «You can find researchers who search, but you must search for researchers who find. «Des chercheurs qui cherchent, on en trouve. Mais des chercheurs qui trouvent, on en cherche».

proposal contained 375 occurrences of the word "research" and 105 of the term "scientific", whereas the word "innovation" appeared only four times. This lexical measure shows up a salient fact of the law and the debates, namely that, in 1967, the issue was not to separate scientific research from innovation, but to stress that the latter was part and parcel of scientific work.

The Law of 1967 stated the intentions of the public authorities in terms of research. In 1972, the legal frame for investing in innovation was defined. The Law of 1972 created the "financial company for innovation" (*société financière d'innovation*) and provided for the prerogatives of the State in the companies, their organization, functioning and taxation. In 1979, a decree stipulated that the mission of ANVAR was "to enhance the results of scientific and technical research and to promote innovation and technological progress" – one of the first occurrences of the term innovation. The laws voted on July 15, 1982 and December 23, 1985 followed up that initiative by making innovation one of the prerogatives of public research and teaching. What was at stake for the public authorities was to produce agents capable of making the "national system of innovation" work:

> Schools, universities, and continuing education at all levels, as well as the public services of radio and television must all promote the spirit of research, innovation and creativity and participate in the development and transmission of the scientific and technical culture. (Article 7, 1982)

Innovation beyond research

Between 1960 and 1990, the public service of teaching and research, and the administration of economic policies, took innovation in hand. The fact there was a considerable amount of State intervention confirmed that innovation was a direct consequence of research. In the years following, fluctuating representations became part of a continuum, and scientific discoveries needed to fit into an economy hungry for new techniques. This made it necessary to pass a law on the status of civil servants in public research.

In the late 1990s, Prime Minister Lionel Jospin returned to the question of innovation and reaffirmed the commitment of the State. The main point of his speech on July 24, 1997, was to promote and accompany relations between the public and private sectors. He insisted that knowledge must circulate outside Academia, and suggested public researchers be encouraged to create their own businesses: "In the same vein, the Government intends to take significant action so that scholars who so desire be enabled to create a firm to commercialize the fruit of their research and benefit from public and private funds not available today". It was the start of *innovation beyond research*. On May 10, 1998, the prime minister concluded the "Foundation for Innovation" conference by exposing his vision of an effective French system of

innovation.[5] The State must guarantee the circulation of knowledge and back private initiatives. The importance of innovation spurred the prime minister to endorse increased State interventionism: "I believe on the contrary that strong public intervention is justified in a sphere where the benefits for the community exceeds private interests. [The State] must also guarantee that innovation and growth do not endanger social cohesion and that everyone benefits. It must remain the guardian of national cohesion". The power of the State must accompany innovation, ensure it is "responsible", and therefore dispose of the right to exercise an "ethical" overview of the innovations produced by the private sector. The law of July 12, 1999, on innovation and research authorizes civil service researchers to create businesses and stipulates how roles and capital are to be shared out in such companies.

Between 2000 and 2010, several dispositions and systems were deployed to support innovation in the economic field. An "economic pole" emerged in "political itineraries", and "hyper-interventionism" was omnipresent despite being branded the "*mal français*" (Lebaron, 2016). In fact, public reports (Née *et al.*, 2017) called on the powers that be to encourage private investment in Research and Development by creating a legal and financial framework. The Law on Finances for 2004 generated the status of "young innovative enterprise" and defined the criteria for obtaining the label and its correlative advantages, particularly concerning taxation. In a ruling of June 29, 2005, the public establishment OSEO[6] replaced ANVAR. The new public organization was supposed to "promote and support innovation, particularly in technology, and contribute to the transfer of technologies", as well as "encourage the creation, development and financing of small and middle-sized firms". In 2012, the Public Investment Bank (BPI) replaced OSEO, once and for all institutionalizing a socially and ecologically responsible innovation. Via the BPI, companies were to be led towards "responsibility", to sustain "durable growth, employment and the strength of the economy" by participating in the "development of sectors of the future, of digital conversion, and of social and solidarity-based economies" and by "supporting the implementation of the energy and ecology transition". The BPI was oriented "in priority towards the Very Small Firms, the Small and Middle-sized Firms and the firms of intermediate size, particularly in the industrial sector". At the start of 2014, the French section of the "Horizon2020" program set up a European public action in favor of research and innovation.[7]

[5] Lionel Jospin's speech in 1998 leans largely on the «Rapport de mission sur la technologie et l'innovation» submitted by Henri Guillaume in March 1998.

[6] https://www.bpifrance.fr/nos-actualites/oseo-filiale-de-la-banque-publique-dinvestissement-lance-un-nouveau-fonds-de-garantie-pour-soutenir-la-tresorerie-des-pme-et-des-tpe.

[7] https://www.horizon2020.gouv.fr/cid75845/lancement-programme-horizon-2020-decembre-2013-dossier-presse.html.

In May 2017, Emmanuel Macron was elected President of France and redrew the political landscape. There was a "massive arrival of political neophytes", whose social attributes and political itineraries were far from those previously noted (Bargel, 2014; Dolez *et al.*, 2019, p. 220). The 2017-2022 mandate of the Presidential Party – "*La République en Marche*" – brings together individuals endowed with particular socio-demographic characteristics. Arriving mainly from the private sector (64% of the Party's representatives), they make up an "economic elite" of "entrepreneurial good will" (Dolez *et al.*, 2019, p. 224). In an interview, Amélie de Montchalin, elected in June 2017, presents her itinerary and her work as follows:

> I was trained as an economist, I have a Master's from HEC[8] specialized in economics, a licence (B.A.) in applied economics from Dauphine (Paris University). I resumed my studies at the Kennedy School of Harvard, where I did my Master's in Public Administration, doing a lot of economics and thinking about the reforms. Ten years in two firms, one of which was a branch of a large French bank, where I was the economist in charge of the Euro zone … then with a big French insurance company, where I was in charge of foresight and mid-term strategy. All in all, for three years I worked for the ComEx, i.e. the worldwide executive committee on the risks to insure in the future. […] Climate change and also understanding the distribution of what the States and what the private actors will do. Therefore, in connection with the European commission, the G20 and the U.N.

In 2019, Amélie de Montchalin was appointed minister. Her itinerary is an extreme case that shows how the private sector has infused the field of governance as well as personal profiles, dominated by economics. Political women and men now discuss foresight, the future, and risk management. The language they use includes the vocabulary of innovation introduced by the representatives of innovation (Bedreddine & Noûs, 2021), already prevalent in the large firms.

Also, in May 2019, a law bearing on the growth and transformation of companies (Loi PACTE) was voted in. Section 2 of Chapter III aims to "reconsider the place of a firm in society". The law provides for the creation and conferring of "labels of corporate social responsibility", based on various criteria, by introducing a variety of legal and administrative dispositions that enhance companies' social and environmental commitments. "A company's statutes may highlight its *raison d'être*, i.e. the principles it means to observe and to which it may allocate resources in the course of its activities". Thereby "a company can publicly declare it has a mission, as long as the following conditions are satisfied: 1) Its statutes specify a *raison d'être*, in the sense of Article 1835 of the Civil Code; 2) Its statutes specify one or several social and environmental objectives, that it considers its duty to follow up in the course of its activity; […]". The firm is called upon to broadcast its "social worth, by taking the social and environmental stakes of its activity into consideration". The public

[8] Haute École de Commerce, one of the elitist French grandes écoles.

authorities are bent on setting up and reporting the efficacy of the legal system by enhancing the "behavior and strategies that correspond to a public charter of good practices by acknowledging the extra-financial performances of the firm […]".

Amélie de Montchalin was very involved in writing up that law:

> I really like the idea behind the PACTE law, the idea that companies have a mission to perform […] and every time we scrutinize that mission in a context that's changing in a changing world, well, the fruit of that scrutiny is often innovation.

The Minister went on to add that innovation can only be responsible and that she would like to impose new norms:

> Well, innovation – if I go back to my three points – must be aware of its consequences. Today, innovation that leads to consuming even more resources, or that puts even more gas into the atmosphere, or that creates inequality, should not be implemented, because it goes against challenges we already have to face… so, from a normative point of view, people must be consequential.

Private actors agree to that political definition of responsible innovation, while placing the State at the hub of its economic mechanisms. Firms and their representatives use the definition to develop new discourses and new practices.

FIRMS AND THE POLITICAL RHETORIC ON RESPONSIBLE INNOVATION

Attentive executives

> The role of a firm goes way beyond profit-making. It must also play a strong social role, be committed to its stake-holders (employees, clients, providers, shareholders, States, etc.). Its leaders and employees are duty-bound to make sense of their firm's activity.[9]

The above post, published on LinkedIn on September 8, 2020, by the general director and president of the Thalès company, demonstrates a fair degree of consensus with the political norms of corporate responsibility. The same principles seem to be voiced in a report by the Haut Comité de gouvernement d'entreprise, which claims as its own the legal dispositions of the PACTE law (2020, p. 17). One of the report's proposals consists in partly linking executive managers' dividends to the sustainability and durability of their firm's activity[10]. The idea underlying this sort of proposal is to make

[9] « La raison d'être, une boussole précieuse au cœur de la crise », https://www.linkedin.com/pulse/la-raison-d%25C3%25AAtre-une-boussole-pr%25C3%25A9cieuse-au-c%25C5%2593ur-de-crise-patrice-caine/?trackingId=JBxULlWeQsa0atz0hlLR7w%3D%3D

[10] The report of the High Committee that brings together two associations of leaders of industry explains: « It is no longer acceptable that a leader's variable compensation not include environmental criteria. The High Committee expects RSE

the parameter of responsibility part of the firm's strategy, in particular by a trade-off of RRI, based on identifying and dealing with the social and environmental consequences – negative as well as positive – throughout the innovation project (Paredes-Frigolett, 2016).

During the 2010 decade, talk of a new conception of innovation began to circulate in the firms, while a number of reports and public declarations came to light. The agents of social change (Rogers, 1995, p. 335) began the job of producing and perpetuating the belief in innovation. In 2014, the future director of innovation at BatiCorp E[11] began discussions with the leader of the group:

> The decision to create a department of innovation emerged from the discussions I had with the general director four years ago. The digital transformation of the skills at BatiCorp E was striking. That transformation, associated with the energy transition, led first to questioning the "smart" model […]. That's when the decision to put a single person in charge of everything connected to smart in general was made. My work with the general director led to imagining a department of innovation that would allow bringing everything together, to deal with the subject transversally and make headway in the field of energy transition…[12]

A campaign was launched to convince people of the need to create a department of innovation and a generational effect became apparent, when younger people entered the fray:

> It must be said that those who convinced the ComEx to do it were the young managers. […] At BatiCorp there are forty young guys, the top 10% managers, who are between 25 and 40 and who got together and said careful – to make it short – we've got to have a sort of innovation cell…[13]

Young managers with a particular vision of the firm and its business were called in to create the group's innovation system of norms and values (Granovetter, 2017). Giving a meaning to employees' activity became one of the missions of responsible innovation, which it accomplished by "attracting a sponsor", thus, in fact, establishing innovation as a vertical, hierarchical privilege:

> Innovation must make sense… the company itself must rediscover its *raison d'être* thanks to innovation, particularly in the large groups. That being said, it's the executive director's place to explain why, the innovation director's role to list the

criteria to be defined precisely, clearly, pertinently and in such a way as to include the social and environmental stakes of the firm. Simply referring to an application of RSE (Corporate Responsibility) criteria or to an in-house RSE program or to what's at stake generally, without defining them clearly, is not sufficient ».

[11] The names of companies have been changed.

[12] Interview carried out on 03/04/2018 with Nadège A. (age 55), at the time Innovation Director for the BatiCorp E group, who holds a University diploma and a degree from a business school, and is specialized in finance and financial engineering.

[13] Interview carried out on 25/01/2019 with Wilfried C. (33), energy engineer by training, then director of acceleration and entrepreneuriat in the department of innovation of BatiCorp. A graduate of a school of engineering in energy (Centrale, Nantes), he did his final year in a double course in market finance. He holds a degree in applied mathematics at the School of Mines, where, after a Master's at Stanford (advanced management program), he is continuing a thesis begun in the U.S.

> possibilities, and the executive director's to make his/her choice among the strategic foresight scenarios under study.[14]

Employees working in innovation departments may find themselves caught up in a move to reclassify the workforce (Chiapello & Gitiaux, 2009). It is also an opportunity to take on new workers, fresh out of business schools or of university "innovation curricula".

Studies on generation Y, also described by the dubious categorization of *Millenials* (Bennett *et al.*, 2008; Negroponte, 1996; Ughetto, 2018, p. 163), or of generation Z, also incite the upper strata of the organizations to "hold on to their talents". "Fifteen years ago, people stayed approximately six years at BatiCorp. Today it's one year and 8 months".[15] It is necessary to retain but also to attract "talents": "The ComEx said yet another thing: that we have a lot of difficulty attracting talents at BatiCorp, it doesn't have a great reputation". Innovation becomes a form of internal and external communications aimed at present and future employees:

> The fact there is an overall impetus due to BatiCorp E's position as leader in innovation on the outside also reflects on the inside… and people identify more and more with the fact of being a leader accompanying the digital transformation and its clients' energy and ecological transition…[16]

The approach attracts employees registered in programs for human resource management (Cihuelo, 2020) or in new, so-called innovation activities, focused on well-being, self-fulfillment and participation (Borzeix *et al.*, 2015), such as foresight or intrapreneurship, perceived as "buffer zones"[17] that allow a firm to secure the loyalty of their younger employees:

> As a former start-upper, I said "wait a minute, do you realize the impact you can make?" But in fact, BatiCorp E collaborators want to be able to dream of transforming the world, about the impact they're going to make, etc…[18]

Company directors count on their employees' dreams and desires, because the "principle of efficacy of [their] action […] resides in the ability to foresee and exploit trends to their own benefit." (Bourdieu & Boltanski, 1976, p. 54)

[14] Interview done 05/06/2019 with Nicolas F. (38), in charge of open innovation and collective innovation at BatiCorp E until end 2018, with a diploma from Science Po-Toulouse, specialized in project engineering and financing. He holds a masters in administration and communication from Toulouse University as well as a B.A. from the University of Montreal.

[15] Interview done 25/01/2019 with Wilfried C.

[16] Interview done 05/06/2019 with Nicolas F.

[17] Interview done 25/01/2019 with Wilfried C.

[18] Interview carried out on June 5, 2019 with Nicolas F.

The political socialization of directors of innovation

Structuring innovation has in fact become quite standard. At group level, a department heads a series of services disseminated among the different strata of the organization. At the top, responsible innovation combines with strategy. To be more precise, the top-level officials of the organization make durability and sustainability mandatory.

Though profiles vary, individuals' experiences as students and professionals are significantly labeled politically, particularly in economic diplomacy. Hugo T., in charge of BatiCorp's "prefiguration of innovation systems", director of "foresight", and since appointed director of the group's innovation program, is a good example. He began "by working on the interfaces between the public and the private spheres":

> I had huge projects of innovation, and connections with public policies on those subjects. I began work in telecommunications, in a sector for the Federation that represented telecom interests, which had huge stakes connected to the public sector.[19]

Hugo then rallied the economics department of the French Embassy in an Asian country, a service attached to the General Directorate of Public Finances, where he participated in accompanying French companies in their hunt for financial assistance and Government loans.

Hugo T.'s colleague, Wilfried C., was director of acceleration and entrepreneurship in the innovation department of BatiCorp. During a trip to the United States to deliver a paper in Berkeley, he met the French ambassador, who suggested he apply for a position as a "totally energy-and-environment-patented scientific attaché". In 2012, Wilfried was a diplomat in the United States.

Thomas' itinerary also reveals a strong interest in politics but, due to his marked activism, differently from his colleagues. His activity consisted at the time in "throwing out ideas, advocating them among government agents, various commissions and lobbying".[20] In point of fact, he was already involved in a university project with an ecological dimension, which shaped him professionally, halfway between expertise and political engagement:

> I was part of a program for the energy transition, Solutions Project, at the crossroads between the sciences, medias and politics. That's what developed into the "Green New Deal" of today, in America. At Stanford, I was in fact acting as Chief of staff. It was Mark Jacobson's idea, a professor at Stanford who was the first to develop plans for the State of Washington and the State of California, the United States, the world… U.S. states have worked separately on their own energy road

[19] Interview carried out on June 25, 2019 with Hugo T. (age 35), who trained as an engineer and directed the innovation program at BatiCorp. He is also a Science-Po Paris graduate in "Public Affairs".

[20] Interviews carried out on 28/10/2019 and 29/11/2019 with Thomas A., 33, in charge of open innovation and relations with the start-ups at BatiCorp. He was trained as an engineer and specialized in energy and nuclear engineering.

> maps, which then turned into the green new deal championed by Ocasio Cortez and people like that.[21]

A fourth member of the team went through AFNOR[22] (Cochoy, 2000), where she was in charge of developing a norm for "innovation management". She explains the political and economic reasons for developing such a norm:

> The European Commission figured they spend billions of money every year on innovation projects, but most of the time they fail, they're badly built. So what we need is criteria for the calls for proposals, to be able to evaluate the innovation projects of innovative companies better and allocate public funds better too.[23]

Functions of "interface" is the expression used by these individuals to describe their own interest in the public sector. Experiencing State institutions as students or professionals is the start of a socialization in the field of power and its mechanisms, particularly financial. Shuttling between the public and private sectors also allows them to acquire skills in the financial markets (Godechot, 2013) and in capital-investment funds (Benquet & Bourgeron, 2019). Their itineraries have therefore brought them into close contact with public innovation policies. Unsurprisingly, innovation managers judge, and speak their minds about, the policies applied, particularly in education, and readily discuss the training policies that will be applied to the future workforce when innovation is everything. That political socialization however does not fully explain why they adhere to the principles of responsible innovation. Their worldviews and values also allow us to understand their commitment to responsible innovation.

Responsibility, values and ethics among actors in charge of innovation

Interviews carried out with innovation managers are rife with anecdotes and statements extolling an industry that respects the environment by adopting measures of responsible and durable innovation. There are however variations due to differences in generation and fields of knowledge. The fact that innovation managers were trained as engineers is not without consequence. In their 2011 report, Christelle Didier and Kristoff Talin show that the profession of engineer is riddled with ethical differences (Didier & Talin, 2011). Most engineers (87%) consider their skills to be one of the conditions that keeps the planet running. Though there seems to be a tendency to under-estimate what is at stake ecologically, some innovation managers we spoke

[21] Interviews carried out on 28/10/2019 and 29/11/2019 with Thomas A.

[22] Association Française de Normalisation (AFNOR).

[23] Interview done on 09/07/2019 with Astrid K. (35), in charge of foresight in the innovation program of the BatiCorp company. She has a Masters in innovation management from a French university.

to – engineers among them – claim they have truly internalized the climate dimensions of human activity. This attitude may stem from a primary socialization extending into their higher education, particularly if they majored in "environment" or "energy":

> So in high-school I tried to discover what it is I wanted to do. I think environment attracted me more than energy… during the 2000s, my father used to say "we're going to have a problem – climate refugees… wars because of water, oil reserves are going down". You need energy for human activity but the idea is that the energy produced mustn't exhaust the resources. All that became clear in Engineering School.[24]

A professional sub-section of less-experienced engineers appears when observing recruitment in innovation departments or for work on environmental risks (Gadéa, 2015), echoing research by Goussard, Flocco and Petit, who note that some young engineers complain of "operational monotony" (2018). When an engineer opts for a position of innovation manager, it is a way of circumventing the more traditional production routines. Also, the political and ethical aspirations and commitments of these individuals may be at the root of their career choices. If that be the case, working for Bombardier or for a start-up boils down to a political choice:

> I was there for the specific project, i.e. I saw housing being produced on a small scale in Canada, which for me was a step in the right direction. Housing represents 50% of the primary energy consumed. There's a lot of talk about being vegetarian, it's very important, but only for 5 to 10%. In that case it meant working on 50% of the building, i.e. 50% of the equation of climate change. I looked up Tesla too, and other companies like that.[25]

Social and societal aspects also are important, even though they have been only partly defined (Bagattolli & Brandão, 2019). It is in that sense that innovation must be inclusive and take "human" factors into account. Innovation managers therefore become the guardians of the social consequences of innovations, by importing or producing criteria for responsible innovation. The value of empathy, inclusion and "co-innovation" feed into a normativity that they spread around the organization (Bedreddine, 2020b): "Co-innovation is the big theme… for everyone … with clients, with employees, for large and small firms, and start-ups."[26]

The various objectives that innovation managers mean to attain are in fact transversal. They claim a variety of fields of expertise that tend to overlap with other

[24] Interview done on 28/08/2018 with Maïlys C. (33), an engineer-researcher in the innovation department of the firm Énergéo. With a B.A. in physics and chemistry from Jussieu University, she specializes in environment and energy.

[25] Interviews done on 28/10/2019 and 29/11/2019 with Thomas A.

[26] Interviews done on 20/06/2018 with David L. (50), director of an innovation program on the intelligent city and director of open innovation on the internet in the Rés'O firm. He holds an engineering degree from a grande école. During his career he also obtained diplomas from major Business Schools in strategic management and in innovation management.

employees' "professional jurisdictions" (Abbott, 1988). They improvise, pretending to be in turn the champions of sustainable development and the professionals of personal development. What in fact is being challenged is technicist innovation. Innovation is made into a "transversal" and "holistic" fact (Chen *et al.*, 2018) that enjoins engineer-trained innovation managers to avoid the traditional representations where technique is topmost (Coutant, 2014). Technicism becomes the target, criticized for closing off a much vaster field of possibilities:

> Already it means transforming the world of labor, and through that, more globally, transforming the world. Working at BatiCorp E means playing in the field of cities, industry, construction and the well-being of the residents in those buildings… it means working everything that's going to be AI, real debates about ethics. At VivaTech two years ago, the concept of the Human as more than digital, is something we created with the woman who directed innovation, the woman who directed communications and the President. "What is the position, the posture that BatiCorp E defends as a firm and in what way is it different from the GAFA's..". I don't share a purely technological view of innovation, of the transformation of firms, of businesses and of the world…[27]

What we are seeing is the production of an ethos of innovation managers, that mixes economic considerations and the responsibility of an innovation. Thanks to the intercession of certain agents, the economic and political fields converge around worldviews and practices that in reality tend to justify the actions of innovation managers.

THE ENCOUNTER OF THE ECONOMIC AND POLITICAL FIELDS

Watching and foresight

The logics of financialization work differently in different social spaces (Darcillon, 2019; Faure *et al.*, 2019; Lebaron, 2015), even when responsible innovation calls for a projection that extends beyond the three years reference which is the benchmark for executive committees and stakeholders. Long-term calculations allow innovation managers to talk about the future by describing the positive and negative externalities of decision-making. At the same time, the short-termism of institutional investors (Plihon & Rigot, 2018) and the logics of large and small firms (Benquet *et al.*, 2019) draw further and further away from the need for far-sightedness that innovation managers demand. Yet their individual itineraries, values and a context favorable to long-term strategies, give innovation managers room to maneuver and negotiate their place. In that respect, they resemble other categories of individuals such as "finance prophets" (Pénet, 2019) or "promise builders" (Pollock & Williams, 2010); and in that sense, they organize the uncertainty.

[27] Interview done on 05/06/2019 with Nicolas F.

Innovation managers reinvest the results of their surveillance, from classical benchmarking to collecting legal data, through a complete re-examination of public action and of the systems that can benefit their group. These results trigger foresight, that consists in identifying one or several fields of possibilities. Since innovation managers claim to have 360-degree vision of the present and the future, they occupy a position of scout or truffle pig,[28] that ensures their situation as components in a firm's strategy. They emphasize the "trends" of the market, thereby attempting to orient the firm's production and activity. Innovation managers' ambition is to present innovation as a "social good", particularly by applying the concept of responsible innovation, which *in fine* permits hiding the negative effects described in their prospective work (Delvenne, 2017). Beyond collecting information for their collective activity, foresight consists in attracting the attention of the firm's upper echelons:

> We use it first of all to raise their awareness […] "hey, guys, we're going to lag behind if we don't act now". We were able to anticipate something and it was a real eye-opener for the sponsor, who at first said "what's climate resilience"[…] once we identified the 6 themes, there was a first exploratory phase, foresight, where the sponsor made up a group of the fifteen top managers of the different departments at BatiCorp around a theme, the aim being transversality, and the idea was to do it over 6-8 months – 4 days of work in the shop, to decide on a strategic positioning and a plan of action.[29]

Innovation managers then enter into an argument based on more or less scientifically corroborated data, but which serves their talk about the future by producing scenarios:

> A fantastic idea, I picked up another case about the CNES[30] who elaborated a prospective study on how to conquer space, and why *do* we want to go into space? Reality is going to up-end our hypotheses… for example, demographic growth, climate change, change in temperature, sure that's going to happen…[…] ask ourselves, "well, *why* go into space", so you imagine it and build those great scenarios. We bet on wars, we'll want to get away, so we'll want to go into space, politicians are going to say "it's hell on earth, we'll go into space and advance together…"[31]

Building scenarios for the future is therefore both operational and utilitarian. The long-term permits innovation managers to project their firm by fictionalizing (Petitprêtre *et al.*, 2019; Saint-Martin, 2019) and to rouse the employees. Simultaneously, that way of doing things fuels the activity of responsible innovation, without necessarily producing a final decision. Sessions of foresight with members of acting committees

[28] Interview done on 22/01/2018 with James R. (50), innovation coach and "catalyst" for the innovation department, part of R&D at Énergéo; graduated from a School of Engineering.

[29] Interview on 04/02/2019 with Stéphane Q. (50), who directs a department of innovation integrated in Énergéo's R&D. He went through the "operational", strategy and marketing. His present team is an accompaniment service for innovation. He holds an engineering degree from Centrale Supélec.

[30] Centre National des Études Spatiales.

[31] Interview on 09/07/2019 with Astrid K.

allow innovation managers to make sure their principles are given publicity, thus reaching the top levels of the firms.

In France, foresight as an activity was observed among the authorities as early as the late 1950s (Andersson & Prat, 2015), becoming more intensive during the early 1970s, with a view to "modernizing public action" (Jany-Catrice, 2019, p. 73). Foresight by the State consisted in anticipating and creating futuristic scenarios (Colonomos, 2014), to predict and build plans of action for what lay ahead. In fact, prospective methodologies promoted interactions between the State and the private sector thanks to strategies made possible by qualitative and quantitative tools (Andersson & Prat, 2015). Also, foresight appeared at the heart of firms well before innovation departments became a part of the system. Henceforth, taking a long-term view, as innovation managers of the large groups are wont to do, is part of the habitual functioning applied in the political and economic fields. Innovation managers apply a code common to the public as well as the private sectors, which deals with the future through foresight.

In firms, foresight is not new; the novelty resides rather in the fact that the function is taken in charge by a particular category of employees committed to innovation. It lies also in the nature of the problems that the foresight implemented by innovation managers proposes to deal with. Climate challenges, questions of inclusion at all levels or yet again mastering complex negative externalities, are taken up by innovation managers, whose specific itineraries speak in favor of taking extra-economic data into account. The arrival of Emmanuel Macron – an ally of business thanks to his own personal itinerary, his relationship to industry and his ideological stance (Offerlé, 2019) – as amplified the trend. Also, his election saw the advent of a staff up till then quite removed from politics and closer to the world of business (Michon, 2019). The context, favorable to industry and to private initiatives, comes with a new political awareness of the climatic and societal challenges at hand. Economics are not however pushed aside. Innovation managers juggle all at once with responsible innovation, communication strategies, and putting foresight in its economic context.

Meeting places

The encounter between public policies and the private sector occurs in various places. Political initiatives become part of a continuum (Pin, 2020) by generating the conditions of possibility for public-private interactions to emerge.

Commercialization services and the SATT network

During the years 2010, "commercialization services" were created in the universities in order to develop exchanges between the public sector and the "social-economic world". Clarysse A. directs such a service today in a French University. Previously, she

was in charge of technology transfer at the CNRS, principally through calls for projects:

> When I entered the CNRS, in 2005, at the time the ANR[32] was created, funding came from the Ministry and everyone did their research in their little corner, without necessarily caring about inno or transfer. Little by little, calls for projects showed an interest in the social-economic world […] not necessarily commercial, but fields like climate change, for example.[33]

Her present department is made up of five people gifted with a variety of skills, known as "commercialization specialists". Their mission is to economically enhance – or not[34] – (Lebaron, 2015, p. 4) the production of academic goods. The notion of commercialization springs straight out of unsuccessful political attempts (Flesia, 2006) at producing researcher-entrepreneurs, and once again questions university autonomy (Gibbons *et al.*, 1994). Commercialization concerns intellectual property, partnerships with the private sector and accompanying researcher-entrepreneurs.

At the same time, the Universities also set up full-fledged innovation departments, that supervise the work of commercialization specialists and do the job of communicating inside the University, to spread the principles of the innovation they wish to promote:

> The way I see my job is to facilitate the work of researchers who want to enter the business world, or create or commercialize the results of their research. If a researcher has an idea or an innovation and wants to go further, I help him or her develop the project and contact the right people.[35]

The departments accompany research-entrepreneurs, when they enter into partnerships in the private sector, on the legal and financial fronts, especially thanks to the contacts university commercialization and innovation departments entertain with big industry. The agents working in these departments point out the contradictions of their missions. They must both motivate and accompany "applied, or even very applied" research,[36] without however eliminating the responsible nature of the innovations:

> This morning in front of the Commission, I presented systems of the PACTE law that change the code of research, because of certain dispositions concerning

[32] Agence Nationale de la Recherche.

[33] Interview on 10/10/2019 with Clarysse A. (50). She directs the commercialization service of a French University, after having worked in the commercialization services public institutions. She also worked in a private company, in charge of barometric studies.

[34] These specialists insist on the fact that the products of academic research are not merely economic but can also be social or environmental; monetary profit is not their sole objective.

[35] Interview done on 10/05/2019 with Élise C. (35). She holds a diploma from a grande école where she did a 5-year curriculum in environmental sciences. She later obtained a Maters in innovation and commercialization engineering, developing her legal skills (patents, contracts, etc.).

[36] Interview on 10/10/2019 with Clarysse A.

> linkages between public and private, and the orientations, the national stakes involved in financing research, from competitivity to environmental issues or public health. Research concerns all of these. We need an economic model today, and to look for partners, because we need to answer calls for projects.[37]

The contradiction between climate issues and research through economic partnerships, leads commercialization specialists to take a relative view of the profitable nature of environmental research. According to Clarysse A., "if there was a market for the environment, we'd have known it". Economic profitability and responsible innovation thus seem barely compatible, despite the good intentions and political decisions in favor of an innovation that cares about the climate and social conditions. "Mercantilizing" science (Lamy & Shinn, 2006) remains aim number one for the public authorities, who since the 1960s have witnessed the economic opportunities offered by the circulation of techniques born of scientific research.

In 2010, an ANR call for projects on the transfer of technologies led to creating Technology Transfer Accelerator Offices (SATT[38]), private ventures whose mission it is to support public service researchers on the lookout to sell all or part of the results of their research. The innovation departments, the commercialization structures and, more recently, the SATT, participate in commercializing science and in introducing economic logics into French science; they participate in tightening the links between science and industry, which the agents of the political field have been wanting to see for decades.

Ecosystems, clusters and fairs

The environment created by the public authorities carries its lot of opportunities into the innovation departments of the large firms interested in externalizing part of their R&D. The public incubators and commercialization services described above are places innovation managers like to be, on the look-out for innovators to finance. The "Makerspace" (Anderson & Séac'h, 2012; Berrebi-Hoffmann *et al.*, 2018) and other "fablabs" (Bosqué, 2015) are favorite places for the "start-up scout" of a large firm. University or school incubators are valued because they are full of students trained in entrepreneurship and innovation methods (Chambard, 2013, 2020) that can benefit a student-entrepreneur and validate their year by a training period in entrepreneurship. The incubators in Universities and other public establishments also teem with potential "partners" for innovation managers.

[37] Idem.

[38] When they were created, the SATT (Société d'Accélération du Transfert de Technologies) received 1 billion Euros through the National Commercialization Fund (Fond national de valorisation), part of the ANR (Agence Nationale pour la Recherche), in order to "finance the commercialization of public research" (2010a, 2010b).

Open innovation, then innovation ecosystem (Bedreddine, 2020a, p. 75) are the concepts that actualize the interactions of innovation agents outside the firm. Innovation professionals patrol those places, on the lookout for the great idea, the dream team, the right product. Jacques, a start-up scout, explains what an ecosystem is:

> It's a place where you can spot and meet startups, they might be incubators, accelerators, investors, or maybe clusters, in France for instance there are a couple of clusters you can visit.[39]

The professional itineraries of a new political personnel are also a strong asset for innovation managers. The innovation ecosystem is an open book for minister Amélie de Montchalin:

> An ecosystem is a really informal gimmick, in a firm that was by definition very normative, hermetic, with limits… […] I can see innovation ecosystems around each group, where they think, well, that's our job, our mission is bound to evolve, so they surround us with people who're going to help us manage the changes.

Innovation managers are therefore allowed, or actually instructed, to circulate outside the organization, which sometimes exposes them to doing tasks considered unproductive. David L. uses the interview we did as an example to elucidate what drives open innovation, colored by serendipity and openness, where economic profitability is not necessarily the rule:

> I'll tell my boss I saw Samir Bedreddine, and he'll say that's great, that's fine, we talked. But you're not going to help me in my job, though the discussions we had and are going to have, we'll swap ideas, and maybe at some point you'll send me a note about the organization, well, innovation – we take it wherever we find it, and spread it around the organization.[40]

Fairs and events are spaces where people rub elbows, where people from all sorts of horizons congregate. VivaTech, the great innovation event in France, welcomes stands of all the large groups present on the French stock market. The French regions and universities are there too, to talk with the employees of the large groups, particularly with innovation managers. Élise, who belongs to the innovation department of one of the large French universities, also attends VivaTech:

> I meet industrialists during events at Spring[41], at VivaTech, aside from other appointments with them from time to time, but I also organize meetings directly

[39] Interview on 20/06/2018 with Jacques F., trained in a business school and start-up scout at Énergéo.

[40] Interview on 20/06/2018.

[41] Innovation Fair at Saclay.

> between researchers and industrialists, without first contacting any commercialization service.[42]

Awarding prizes to startups also implies that agents from various social spaces meet and exchange. Madame de Montchalin explains why those are opportunities for the private and public sectors to interrelate:

> What's important is that such occasions bring together very different people. Lab directors, financiers, public institutions, people like me, it means sharing things which normally have a future or could have one. You also get weak signals, fashions, fashions that can become trends…

In fact, each of these occasions are like places where the products of innovation of all kinds are recorded and consecrated, where *illusio* is "produced and reproduced" (Bourdieu, 2015a, p. 279-280). There, everyone speaks the same language, shares the same codes, without ever questioning what they are based on. Places of "hobnobbing", these "neutral places" (Bourdieu & Boltanski, 1976, p. 10) become the stage where the ideology of and belief in (Bourdieu, 1977) innovation – especially responsible innovation – are produced, asserted, disseminated and reasserted. We witness the construction of a shared universe, where material and symbolic goods are exchanged, whose supreme aim is the opening up and circulation of goods and individuals. Start-up juries, events of all sorts, partnerships or incubators, compose the constellation of French innovation. In the Triple Helix model, "hybrid organizations" can be found precisely in those shared and relatively autonomous spaces. Their main function is to promote innovation through the many objectives they defend. According to Champenois and Etzkowitz, these objectives are characterized by the fact their actions take place in many locations. As these authors say, these entities "integrate and combine elements from the various Triple Helix spheres in their institutional design, to promote innovation" (Champenois & Etzkowitz, 2018, p. 29), therefore participating in the activity of innovation agents by providing a field of professional possibles. From this point of view, innovation, and therefore responsible innovation, become the privileged objects for interactions between the academic and economic fields and the field of political power to take place.

Responsible innovation, a proxy for the interpenetration of the economic and political fields

Innovation becomes a shared code, a language that allows certain agents of the public and private sectors to interact. What surfaces, in reality, is a structural and

[42] Interview on 10/05/2019 with Élise C.

functional resemblance between the large companies' departments of commercialization and departments of innovation.

A structural and functional resemblance

The innovation departments of the large firms and the commercialization services in the universities and, more generally, in Academia, are the fruit of decisions made by the dominant actors in each field. Yet, a chronic sensation of being illegitimate plagues the agents in charge of innovation, as they move within their allotted fields, whose "nomos" represents a "supreme law", difficult to break without incurring punishment (Bourdieu, 2015b, p. 139). Individuals whose function it is to direct and accompany innovation find themselves in a quandary in fields governed by rules and mechanisms (which, incidentally, they call into question). That is why they incur mistrust on the part of other agents.

The paradoxical injunctions to which they are exposed give way to arrangements in which the heavy-handed laws of their field are a salient fact. Innovation agents do in fact sometimes make outlandish promises. Innovation managers therefore constantly remind everyone that the condition *sine qua non* of their action is profit-making and economic rationality. At the same time, commercialization specialists, as well as the other people involved in accompanying innovation in the public sector, corroborate and stress the need for objective and disinterested research, detached from any direct economic motive, not precluding, however, the idea of "going farther"[43].

Such paradoxical postures put the innovation departments of the economic and academic fields in a rather peculiar situation. Despite the support of their hierarchies, they are often pushed into the margins, due to behavior that appears eccentric with regard to the customary values and practices of their respective fields. The individuals who make up those services are therefore tempted to look elsewhere. They find themselves at the margins of their field, even sometimes straddling its borders. Trying to find justifications on the outside is not new and has been documented for other professions (Chiapello & Gitiaux, 2009). The originality here is the way the positions occupied by agents of the different fields adjust. Individuals come to the fore whose internal and external legitimacy mix and blossom in their shared spaces. They play with the rules and limits of their fields and operate in the nooks and crannies. Representatives of private and public innovation might be called *agents of the interstices*, that Etzkowitz and Champenois call "boundary spanners", or to coin a neologism, *interstitial agents.*

[43] Interview on 10/10/2019 with Clarysse A.

As a result, innovation agents in each field share an ensemble of practices and world views. Their shared values of openness, freedom and the abolition of borders – especially scientific borders (Gibbons *et al.*, 1994) – are their common, normative platform. They use the same language, which forms and transforms discussions in fields whose basic principles are at first sight quite far apart. This is what imparts its significance to the meeting places mentioned above.

Entry gates

The production of students (Chambard, 2020), first, the production of research (Lanciano-Morandat, 2019), second, and finally, the creation of physical and normative areas, are what permit the Public Authority to produce the offer of innovation in France. Despite the ongoing climate of austerity (Guilbert *et al.*, 2019), the systems for accompanying individual and collective initiatives of entrepreneurs and firms are plethoric. The BPI (Public Investment Bank), research tax credit and all sorts of State subventions, constitute areas of interpenetration that make the State a major actor where investing in innovation in France is concerned. The legal arrangements defining corporate social responsibility point in the same direction and illustrate the power of "the brain-washing done by the State" furthered by the public authorities (Bourdieu, 2014, p. 123), who thereby reassert their role as producers of reality (Bourdieu, 2005), through a "double social construction"[44] of the market (Bourdieu, 1997, p. 49). Responsible innovation serves that end.

That is how innovation and its supporters in the economic, political and academic fields work at building *entry gates*, by *consecrating* symbolic and material goods, in an exchange ranging from the right vocabulary to correct behavior, passing through objects of inter-comprehension. By occupying the position in charge of organizing the firm's public relations, innovation agents become the gate keepers of their field. On their common meeting grounds, responsible innovation is the main theme. Individuals act in accordance with the rules that govern their field, and transcend them by adopting foreign logics. For innovation agents in the public sector, personal stakes and the common good are not mutually exclusive. Producing knowledge and skills aimed at a better understanding of the economic, social, biological or physical worlds, does not prohibit economicist side-stepping. On the side of innovation managers, bypassing economic rationality balances out their insistence on the economic virtues of what they say and what they do. On both sides, aims are now hybrid.

Innovation managers' job then consists in making their firms' employees "sensitive" to the issues of responsibility and sustainability. Responsible innovation,

[44] A double construction, in the sense that the State produces individual aspirations and a field of possibility (laws, financing, subventions), in which those "systems of individual preferences" can prosper (Bourdieu, 1997, p. 49).

which falls within the scope of both economics and politics, consequently appears as the central theme of discussion between the public authorities and economists. The responsibility of innovations becomes a proxy for their interactions, and the star product, the main object shared in the political and economic fields.

Responsible innovation has thus become one of the main modes of interaction between the two fields. The phenomenon is not new and has been described as the "Triple Helix" (Etzkowitz & Zhou, 2017), a configuration where the University, industry and public authorities join up. However, the transformation operated in France permits us to introduce new elements with relation to a concept sometimes described as "ready-made ideas about science" (Shinn, 2002). For, in reality, creativity in places dedicated to innovation and related tasks, in both the public and private sectors, is the result of planning by the leaders in the fields and also of the desire voiced by certain agents. That is how individual aspirations join up with the obligation to conform imposed from the top in the fields.

CONCLUSION

Economics and politics are transformed by the action of individuals possessed of specific personalities and values. We witness the difficult construction of a professional ethos that places freedom and openness at the center. Discourses contain a hegemonic will that sees everything through the lens of innovation. Innovation agents working in the interstices of organizations and fields are at odds with the rules of expertise. Gifted with multiple resources, but not enough to carry weight in the fields dominated by certain types of capital, they have trouble asserting themselves within the firms.

At the same time, innovation increasingly appears as an activity born of private initiative. Nevertheless, responsible innovation is an important stake in regulating both the public and the private sectors. Innovation agents in the economic and political fields try to make profitability and responsibility work together. A contradictory mantra, yet responsible innovation emerges as a facilitator in the effort to reconcile the two, observed both in legal and professional practices. The "firms' *raison d'être*" intersects with innovation managers' values, participating in the mechanics of interaction between fields. The public authorities pick up the term innovation and work on its semantics. The word refers to the transformation of both the firms and public research. Furthermore, we see the birth of an "entrepreneurial man" and a "new conception of the market" (Dardot & Laval, 2010b), at a time when neoliberalism was emerging as the "new reason of the world" (Dardot & Laval, 2010a). The making of new individuals, how they relate to the self, the group, the State and the market, seems to

be one of the purposes of all innovation and of the precepts of those who defend it. Demands for less State intervention mingle with the massive presence of public authorities in French innovation.

This article in fact raises the issue of the fields' loss of autonomy, indirectly due to innovation agents. The autonomy of fields depends here on the autonomy of professionals (Sapiro, 2019), which we have attempted to describe. Are we witnessing the emergence of a field of innovation claiming its own market and its own mechanisms? As things stand, we observe an interdependency that hardly supports such a development. Distancing from the all-economic and the all-public – hybridity *par excellence* promoted by responsible innovation – remains at the margins of the fields and their modes of functioning, which though established, nevertheless might change. The "startup nation", promised by presidential candidate Emmanuel Macron, who set as a condition the possibility of replicating the California model (Etzkowitz, 2019), seems weakened by inconclusive results. The myth is falling by the wayside, as today, the phrase is mainly employed pejoratively, and even its representatives express doubts as to its validity.[45]

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[45] On December 6, 2019, Olivia Grégoire, an elected representative of the French Presidential majority (also appointed minister) rejected the term startup nation employed ironically by the host of a TV program on a French news channel.

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