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► **To cite this version:**

Juliette Rouchier. Impacts of disqualification by scientists in an environmental dispute. 2020. hal-02434776

**HAL Id: hal-02434776**

**<https://hal.science/hal-02434776v1>**

Preprint submitted on 10 Jan 2020

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# Impacts of disqualification by scientists in an environmental dispute

Version: octobre 2017 with two additional notes from 2020.

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*Note : This paper has been written as a follow-up of a seminar called DEFORM Project workshop in 2017, on Research Quality, Integrity and Misconduct. This paper was sent at the end of 2017 for publication, but the review process is taking longer than expected.*

*A short note at the end has been added to explain how the social setting also evolved. What was predicted by some opponents to the industry (and that « reasonable colleagues » refused to hear) has happened more or less in the expected timing.*

**Abstract:** This paper describes the place of disqualification in an environmental dispute in which scientists, although supposedly representing neutrality and reason, express publicly their opinion in place of constructed knowledge. This has an impact in terms of trust in science for the general public, can destroy the possibility to do field work, especially when the problem under study (here a pollution issue) is strongly linked to scientific activity, but can even generate a serious delay in a political process. The disqualification of others being very often observed in academics, an institution should be designed to solve disqualification issues with civility.

**Key-words:** environment; long-term policy; policy analytics; French academics; avoidance; disqualification

In this paper I wish to address an issue that can impact in the organization of public decision making in France, when decisions are made, in a way or another, based on scientific expertise. The problem at stake is the rather easy apparition of disqualification in the academic world – be it to qualify “others” (from the outside of academics) or “colleagues”. The paper describes a field study on an environmental conflict, during which disqualification was present and had a massive impact on the political and scientific dynamics.

It happens that there is no regulation body concerning the behaviours of researchers in public space or the spreading of reputation, and no incentive to self-regulate. In the contemporary context, power relations associated to the capture of rent through massive projects can conduct to weird positions when the capture of speech is made by people with low ethical standards, against whom no claim can be made. This dynamics is part of the functioning of the fabric of doubt, as studied by Proctor’s famous agnotology (Proctor and Schiebinger, 2008). This problem is here documented in a specific case of involvement of french scholars in expertise. We conclude on the impact of institutions that frame this type of political conflict and that allow scientific misconduct.

## 1. Introduction

### 1.1 Disqualification: risk assessment, academy, gender...

Nuisance and pollution issues have been vivid since the beginning of the Industrial Revolution, and have since then opposed people with heterogeneous power and access to the resources of political discussion. In general, the inhabitants’ experience and worries have been considered as irrelevant and the interest of industrial shareholders has mainly been put forward (Leroux, 2016). Even excessively salient situations, like a very obvious poisoning of population by mercury in Minamata, Japan (Tsuda et al., 2009), have rarely been treated in due time. In general populations, who face large economic interests, have to be able to organize a strong political contest to be heard when defending their quality of life or their health. The pro-industrial stance that can be found still today in most developed country has for example led to the emergence of the field of environmental justice (Allen, 2003 ; Deldreuve and Candau, 2014). The research interest of this trend is to demonstrate how inhabitants’ experience of the cohabitation of industry is often rejected because of the lack

of proof of the impact of nuisance. "Proof" in this context has to be made, as usual in the modern world, as following natural sciences' type of demonstration: using clear measures and quantitative evidences – either of the presence of certain dangerous material (eco-toxicology) or of the fact that a population is indeed impacted by its simple presence at a given place (epidemiology). The requirement of this type of demonstration is often associated with a disqualification of the worries of populations, whose knowledge and experience is not recognized. It is all the more easy to disqualify part of the public than people who have not achieved higher education easily consider themselves as suffering from epistemic inequality, which makes them feel (to a large extent) unable to argue properly.

This is a situation that is also observed within the field of agnotology – which studies the delay in the production of knowledge about certain dangerous substances (Proctor and Schiebinger, 2008). In his work on tobacco, Proctor (2012) demonstrated how the industrial world has organized this non-demonstration in the case of tobacco, but the demonstration has since been made for other goods. He shows some already heavy evidences were considered as non-acceptable by public authorities so as to establish laws to protect the consumers: for decades, communication campaigns, lobby and corruption networks were used in different ways to differ decisions. The goods at stake were of course representing high incomes for large (and thus powerful) industrial firms. Interestingly one of the recurring technique for wasting time in establishing proof is the rejection of scientific proofs, using disqualification against individuals who produce evidence (Proctor, 2012). Instead of attacking the content of demonstration, the argument that is used is the "ad hominem" attack: by disqualifying the person who carries the disturbing argument or proof, one can convince less informed people that this proof is wrong. Of course, this process is possible to overcome so as to establish the truth, but once distrust had been put on a person, the rehabilitation of trust can take some time. And gaining time is actually what doubt mongers aim at, since they work in the logic of short-time profit of the financial capitalism (Ogien, 2015). This practice - postponing scientific demonstration of danger to make some industrial rent last - has been made rather popular, and this also explains why in reverse the trust of civil society for science has fallen in time. The use of stereotype for organizing disqualification can be identified in many contexts (Elias and Scotson, 1965) and be more or less voluntary. When in need to qualify negatively a community, a solution is to refer to the worst behaviours of the most deviant members of the group and extrapolate it as a tendency of the whole group - even if they are not representative at all. But this reduction can take place because some information are deceitful: now it has been proven that some scientists accept to dissimulate, falsify, interpret abusively results against money or personal interest for their career, all scientists lost their image of pure producers of knowledge. The supreme value that was put in the neutrality of science in many (simplistic) discourse is eroding and any scientist can be seen as being ready to falsify data for personal interest.

Even without any pecuniary incentives, the academic world is often a place of disqualification. Reputation being at the heart of careers and an essential resource, the production of judgement about colleagues looks like a normal phenomenon. Positive or negative judgements circulate a lot in academia, and it can also be observed that extremely uncivil behaviours are common, at least in French universities (Lazar, 2001 ; Dupont, 2014). Being a woman implies a higher risk of being considered of lesser value – as we all know they get less recognition by pairs – which can be assessed in the literature on gender biases discussing career paths (Steinpreis et al., 1999). When dealing with technical issues such as industrial risk, the classic view that women cannot be competent is still present (Zonabend, 2014) and exists within the academic world as much as outside.

Eventually, as will be seen in the next subsection, the inquiry was embedded in an action-research. It is actually very classical to be heavily criticized within the academia when recognizing the ability of the public to define problems and propose solutions. Even 25 years after the birth of post-normal science (Funtowicz and Ravetz, 1993) and the recognition of the specificity of very uncertain politically embedded issue in terms of scientific treatment and use of scientific knowledge, the main paradigms are still "normal". Thus, the fact that no form of knowledge has to be above some other, that scientist who mixes with the population can be assigned a role and be "manipulated" by those s.he is observing, is not considered as basic research method and an object of study itself. It is seen as a mistake in the method, and a scientist who follow this hypothesis can be accused of being naïve. This is in particular true when interdisciplinarity is low in the local academic culture, which is still a very common situation in France. It has to be remembered that in most French cursus, especially in natural sciences, but also in economics for example, students never hear of epistemology or history of thought (Stengers, 2001) and when becoming researchers, they meet no incentive to learn about the dynamics of

creation of knowledge in their field or in general. It is thus difficult to explain the specificity of participatory action research to individuals who have no clue about the existence of this approach.

## 1.2 A well protected industry

The case I am dealing with is a large controversy that concerns a polluting industry, the “Red mud” case near Marseille. The context is a very long lasting conflict that has arisen and disappeared regularly over the last 40 years, and has involved “science” (as expertise for surveillance and council) at climax steps. Red mud is the residue of the Bayer process for alumina extraction from Bauxite. After alumina has been diluted in soda, the remaining product is mostly Bauxite without alumina, which means that the elements are more concentrated than they were before. This is not a very problematic issue for iron (which gives the color to Bauxite and red mud), but is a bit more annoying with arsenic or vanadium, also natural constituents of Bauxite, or of course alumina traces remaining after extraction. The process allowing the production of alumina, so called “Bayer process”, was actually invented in the plant we study in this paper, the Gardanne plant established by Pechiney Company in 1893. The localization in this region was justified at that time because of an easy provisioning for the two main resources: bauxite and coal for heating soda – the name “bauxite” itself originates in Baux-de-Provence (France) where it was originally found. Many alumina plants have been implanted in the area but all but one have been shut. Although it was at that time built on the outskirts of Gardanne, the Alteo (former Pechiney and then Rio-Tinto) plant is today surrounded by this city of about 20000 inhabitants, with a long industrial tradition, as it was a mining area until the very beginning of this century. Since the beginning of the production, residues have been produced from the extraction of alumina, and have been stocked in diverse places in the department (four large places are documented today). Let’s notice that the red muds management is an international problem, since every plant has to get rid of about half of the volume of bauxite that is used in the process. Usually, the residue is stocked. However, stocking solutions are not considered as a problem (nor socially neither regulatory) when the density of urbanization is low.

In Gardanne, this condition is not verified, and the disposal of residues started to become a problem in the 60’s, when a solution was found, and already contested by the population at the time (Loizon, Pezet, 2006; Mioche, 2011). In 1966, a long pipeline (around 50 km) was achieved and the residues were sent directly into the sea, in a deep canyon. Interviews reveal that even if this solution constituted a political conflict at the time, the claims from the population were not strong enough to reject the pipeline option. Interestingly, in 1967, another conflict started in Corsica (France), near the Cap Corse, where an Italian plant started to send out boats to dispose of red mud residues in a deep canyon of the same sort (residue that was red but resulted from the production of titane). The Corsica population reacted similarly to the Marseille population and so did the authorities: the project was authorized. Thus, eventually the boat was blown up by unhappy Corsican, expressing a different (maybe more radical) attitude towards State decision than the rest of French population.

Time passed. In 1995, Corinne Lepage, Minister of Environment, decided to re-negotiate with the operator of the plant. She gave 20 years of technological improvement before the plant should stop the disposal in the Mediterranean Sea. This decision was taken at the same period where the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean was amended. There was a kind of perceived contradiction between the French ratification of the convention and the political decision of allowing such large residue disposal. Twenty years later, however, no solution was close to ready, and a new controversy against the disposal of the residues created a large political conflict.

Starting in 2014, new negotiations were launched between the State and the industry, some expertise was led to assess the risks, commissions were formed at local and national level, including NPO, industry and administrative representatives. The technique that was accepted to be the “best available technique” after this long negotiation between state and the firm, mixing technical expertise, political and economical arguments, was to press the red muds to get rid of the liquid, eliminate the liquid in the sea and stock the residues near the plant. After the commissions have given their points de view, the Prefect allowed for six more years of derogation, starting from January, 1<sup>st</sup>, 2016. The plant cannot discharge mud any more, but is allowed to run its activity and to release filtered water with pollution levels above the limits of Barcelona convention (especially for Arsenic and Aluminium). From this point, the political dispute exploded to contest the decision, but also to force a discussion about the future of this industry and its risks. This dispute has been very vivid for most of

year 2016 – which is the moment we focus on in this paper - and is still lasting, worrying and producing distrust in the population.

### 1.3 The field study: producing a model for discussion

At the beginning of 2016, I started a field study on this conflict, whose aim was to produce a game to help reduce the oppositions and potentially re-establish a dialog between several parties. In the project I planned to work with people who had studied the case for much longer, and thus could give a model of the dispute as seen by a large share of the population. The idea was that two pollutions instead of one were now visible: one on earth and one in the sea. Reducing the pollution in the sea would create more problems for the people living around the plant and the stocking place. But the sea had been polluted for a long time, and economic and recreational activities linked to the sea were massively impacted there. I wanted to create a complex model and a game from this model, following the ComMod methodology (Etienne, 2014), so as to re-create ecological solidarity, where both impacted population could discuss about their goals regarding the pollution and the plant, instead of feeling opposed. This type of action-research is not meant to propose a solution to a problem that would be identified by an expert, but to co-construct as much as possible the definition of an issue and explore the multiplicity of solutions that can be offered by those who feel concerned about it. In that sense it is a posture of decision-aiding, providing a aid to formalize the issue and accompany for mediated encounters to create collective intelligence. However, it can be noted that the idea of creating a mediation was solely mine, and although my project was financed and had integrated from the start several scientists that had already been working on the topic, the fact that I alone decided to intervene in a complex conflict is to be remembered as a key element of the process. The project was indeed financed by a labex (French laboratoire of Excellence) which had led many studies in the area, especially a historical survey of the case (Mioche, 2011).

After a few weeks it was however clear that no social science inquiry had been done to establish the actual knowledge and representation of the population at stake, and certainly not in a way that could enable to create a complex model - with an anticipated focus on actors, their stakes, interactions, physical impacts, flux, and possible solutions. In such a research, although the aim was to co-construct a model either for simulation or role-playing game with the concerned population, one way to initiate a dialog with stake-holders can be to come with a “scientist” model, which serves as a basis of discussion. This approach was mine. And to be able to start out a minimal model, it was necessary to get data about the views of system from different involved individuals. I thus decided to adapt my project by adding some interviews with stakeholders, with a focus on their view of the system (when possible, I had them draw a mental map) and their arguments – and thus I would argue with them by presenting already recorded counter-arguments to their views. I also was present in public demonstrations, in some scientific meetings that evoked the case, and led informal discussions with any well-informed scientists and activists. I also started to draw a list of people who would declare to be ready for an organized confrontation through a game. From readings and first discussions, I decided to interview “activists” (members of associations that opposed the Prefect decision), elected and administrative bodies, factory members, and eventually scientists who were involved in studies and expertise relative to the situation.

## 2. Lack of transparency and distrust

### 2.1 Place of scientists in the dispute

From the very beginning of the story, this controversial situation has been linked to scientists in a very intimate way. The paper by Loison and Pezet (2006) showed how the 1965 decision to release the toxic mud in the sea was preceded by an attempt by the industry to try to prove the harmlessness of the product. It has to be noted because, although the recent controversy has heavily accused Pechiney (possessing the plant at that time) of its choice, this initiative was extremely uncommon at that time and in a sense progressive. The industry did order some studies of the content of the residue, which was decided to be “reasonably” toxic and asked to a very popular oceanographer, le commandant Cousteau, to attest that the ocean would not suffer of the discharge. The main argument for this being that the sea is very large and the residue was to be sent at the bottom of an abyss that was almost impossible to explore at that time. On the opposite side, a biologist and doctor, Alain Bompard was opposed from the very beginning to the principle of throwing toxic material into the sea, announcing that this would create a first case for the industry and it would soon turn out to be

mundane to pollute seas (which was an excellent prediction). The scientific justification, and the open discussions that were made with the public, actually had the opposite effect from what was expected by the industry: it built a very strong opposition, in which the mayor of the cities that lived on coastal tourism were very active. Eventually, at some point the industry had to stop the transparency process and turned to their main support, the ministry of industry, who gave the authorization without any discussion as Pechiney was still a very important national company to sustain. At that point, “science” had already turned into a central actor, but it had not played the totally smooth role that was expected from it.

The surveillance of the effects of the plant was not at that time decided, because it was before the creation of the environment administrative bodies in France, and this surveillance was official only after 1991. From this time on, the DIREN, and then DREAL after 2011, were in charge of checking that the industry was respecting the law and not over-polluting. The next episode when the opportunity to discharge residue in the sea was discussed was, in 1995 the minister of environment was held by Mrs Corinne Lepage, a well-known advocate who was actually able to put some pressure on the industry because she was sustained by the Prime Minister Balladur. Although France had signed the Barcelona convention, which gave very little allowance of pollution in the sea, the plant was left allowed to largely over-reject. Corinne Lepage negotiated with Pechiney that, within the next 20 years, they would find a way to follow the law and reach a situation where no rejection would go into the sea. From that time on, the role of DIREN was supposedly to check that the company was indeed investigating and investing to reduce its pollution. The scientific council was led by a university professor from Dunkerque, and followed the case until 2014. This council is nowadays considered to be the cause of the long status quo where Pechiney and then Rio Tinto and then Alteo were not forced to reduce their pollution as much as they should and is the reason why the plant was not ready in time to stop disposing residue at all.

In 2012, a new National Park was created in Marseille area, after rather difficult negotiations took place (Deldrève et Deboudt, 2012): the Park indeed was intended to include two major pollutions and to exist in a very densely populated area, which is a rare experimental device only to be found in Pretoria and in Sydney. When the decision was made, the Minister of Environment of the time promised that the red muds would no longer be sent to sea in this area. However, as time was approaching, it was becoming clear that the plant was not ready for the complete suppression of discharges to the sea. Thus Alteo started to do the already mentioned negotiation and proposed to stop sending red muds to the sea but still send water after major removal of pollutants. Alteo started to install large press for this process as of 2012, in view of renewal of the operating permit. In 2014 the National Park of Calanques (through his scientific and administrative committees) made an analysis of possible options and the proposition of the plant and approved the idea that the plant could carry on using the pipeline for 30 years and dispose residues in the Park.

The approval by scientists was, in their report, conditioned by an independent control and monitoring of the pipeline, and a request to be soon respecting the thresholds of the Barcelona convention. However, this limit was not enough for most pro-environment analysts: based on the past failure to put pressure on the plant, they considered that the scientific council of the Park had just recognized the right to pollute. Among scientists this view was also held, and an opposition line was drawn between “pro” and “anti” Alteo (without more precision about the content of the opposition or acceptance), even within the scientific council. Information about who was holding each position was largely displayed in informal discussions in the scientific community of the area.

## 2.2. A fabric of distrust

From the very beginning of the interviews, I could realize that mistrust was increasing around this issue. Most of interviewees were not ready to meet each other and would express very negative views about the others, not only those being on the other side of the “pro-anti” line. In time, as I got somehow “classified”, some people even rejected my interviews.

The mistrust was expressed by everyone although the activists would systematically express willingness to meet others to confront points of view. However they would recognize a huge power gap between them and other stakeholders, and also consider that some other parties (such as the factory) were of bad faith – in that sense they had no hope that a meeting could occur, not to speak of a constructive dialog. Intentions of others (from the three other categories) were always seen as manipulative, and in particular the lack of recognition

about their knowledge and worries was considered as spiteful. This is a classic element of environmental justice analysis to show the emergence of this feeling by the inhabitants when facing too large epistemic asymmetry (Livet) and too little space for dialog.

Along this year 2016, the activists also started to fight against each other. They strategically associated to lead a large demonstration with about 2000 people in January 2016. However during this demonstration, several strategies were visible: some links were created with national activists (in particular José Bové, very important for French environmentalists) for those who wanted to increase the visibility at national level; while others were trying to work at a local scale by joining more local associations. From this on, accusations of running for his own interest was made for one of the main activists, who was judged too radical and unable to negotiate, while he would answer that others were ready for any compromise with the authorities. As a result, in September 2016, two demonstrations were run in different places and at different times, with different calls. A recommendation circulated by email not to join the other demonstration among one of the networks – eventually the population of this September demonstration fell to approximately 200 (my estimation, for both demonstrations). Some more activists were excluded from all networks but still working on their own – one of them filling up a blog on the topic on a national journal site, for example. Even among activists it was getting impossible to have people meet and discuss. This is a rather usual political process, in particular in France (Lamont and Thévenot, 2000). At a moment, the conflict was getting very heavy and even two interviewees recommended me (as a joke, but it could anyway seem strange) to find a body guard for carrying on with my inquiry.

As said before, scientists were seen as central actors, although their image was quite rarely positive, as exposed before. Most of them were considered as “in collusion” with the plant, having unexpressed conflict of interest (if not being directly corrupted) – gossip circulation was very active about several very visible scientists in charge of expertise.

In the other direction, scientists were producing discourses about other actors, and were in that way defining the frame of acceptable definition of the problem. The most central idea, which I personally believed in when preparing my project, was that activists wanted to close the factory. The second very general idea was that the general public was not able to understand the higher stakes of the situation and emitted critics that were not well founded. Any activist would be thus disqualified in intention and abilities except, for the latter, those who were coming from the academic world (retired professors). Also it was said that activists necessarily try to “instrumentalize” researchers and that one has to be very careful when approaching them.

Soon after beginning the interviews, I realized that the idea of closing the factory was supported only by one rather marginal activist I had interviewed (in a sample of eight). The proposals the interviewees were making were in general much richer and displaying a good knowledge of the industrial complementarity of the area, with analysis that were often very close to the scientists’ ones (Meinard, Rouchier, revision NSS). Higher level considerations were present (justice, law, equity, progress), as well as detailed knowledge about the past. It can be noted that the deception in the political process and the lack of response by the administration changed the point of view of activists, who were more numerous to ask for the closure of the factory in 2017.

One other researcher, a sociologist, was leading field interviews at that time, but she had not yet produced any public discourse and was not located in Marseille – thus not in the local network dealing with environmental issues. Now one of her paper has been proposed to the journal *Vertigo* (in French) (Deldrève, submitted). But in 2015, and although the National Park was existing for some time and the conflict was already starting, no one had done a review of first-hand arguments or proposals of the activists. This did not prevent the spreading by central actors of the consensual definition of their points of view. Sincerely surprised by the generality of this unique point of view containing two badly documented assertions, I would ask to colleagues, either formally in interviews or informally in meetings, “why do you believe that activists want to close the factory ?” – to which I got two types of answer “because X said it in a meeting at occasion O” (precise description for getting information) or “because I know someone who knows an activist and he says, that they are manipulative” (imprecise, relying on interpretation rather than description). The structure of justification is clearly of different form and could serve as a discriminatory identification of primary and secondary source in the building of stereotypes and gossip, following the analysis made by Elias (Elias and Scoson, 1965). It then happens that the producers of disqualification are those who refused interviews a bit later in the year. Thus this type of rationalization could not be recorded precisely, nor the reason to produce them. However, the

identified “group” had some commonalities with those who circulated other type of judgement, described in the next section. One explanation I could make of this very satirical view of activists was the fact that a thesis was being led on mediatic expressions of the conflict – which were usually simplistic indeed – and could potentially produce a mix between speech and reported speech.

### 2.3 Extending distrust within science networks

Scientists were also constructing sharp discourses against each other about the issue. It was very marking that any detail would create distrust because the person at stake could turn out to be thought as partial. A punctual commentary was considered as wrong; accusations of not revealing conflicts of interest were made; eventually some were considered as partial. This last reproach was particularly directed to me, which is what enabled me to observe the impact of such affirmation on the possibility to follow my research. Indeed, after I had led about a month of field study, my partiality was expressed regularly towards other scientists, as well as my incompetence – or at least “doubts” about my competence.

Interestingly, the world of interdisciplinary research directed toward environment studies is rather small in Marseille, and some colleagues are also friends, which helped me get information about these declarations when they were made in rather small audiences. I almost knew the gossip dynamics in real time. At least three people were regularly expressing the fact that they would not trust me and that I was “on the side of activists” or “against the plant”. These three people were part of the Scientific Comity of the Park, which was accused of collusion with the factory by activist. My lack of neutrality was also explained to a non-scientist, an important administrator of the Park I had already interviewed but was still in touch with.

This resulted in two situations, including one scientific meeting, when my speech was unheard, either I was interrupted or got no answer to a question. Then three researchers refused to be interviewed, one of them because he wanted to “keep its neutrality as an involved expert”; the two others from the scientific council, who first had agreed to have an interview stopped completely to answer to my messages. They did not even answer to the proposal I made, to explain to them my work so that they gave me a feedback on what I should do next (which was the most diplomatic approach I could imagine at that time).

As a comparison, I could interview the factory director after the scientists refused to answer to me (it took a long time to converge on a date, but the meeting took place), and no other actor refused. The only difficulty I had was to get in touch with the two ministry cabinets I contacted to understand the underlying decision process (Prime Minister and Environment), who could not accept the interview because of “lack of time”. Even Corinne Lepage, former minister, accepted to give her point of view on the situation in a 20 minute interview (which is a long time spent - for almost nothing - for a very high level advocate whose advice is usually very costly). I could never get an answer from the important administrator of the Park, with whom I had exchanged regularly before to keep him updated of my collect of information.

Eventually I was accused of destroying the possibility to do field work of the PhD student who was supposedly working on the field at that time. I doubt that this was my intention: I had communicated and worked with her in the establishment of my project and was citing her as a main collaborator in my talks. I also asked to the colleague who accused me of this disturbance to get a list of possible interviewees she was aiming at, so as to avoid to over-solicit actors. I guess this tension could have been arranged through discussions, but this option was officially rejected via email.

Another person I had involved in the project did a very surprising thing: he asked for my interview grid to go see one rather well-known activist I had intended to meet. This was no problem to me, but to avoid over-solicitation we agreed to ask the interviewee if my colleague could share with me the answers to my questions. When the interview was over, I discovered it was led with the already mentioned student, and then both refused to provide me with the answers to my questions. This was a bit unexpected at the time, although multiple talks with sociologists taught me that, this is a rather uncommon but known practice for people doing field work. All this took place between January 2016 and June 2016, and then I abandoned the idea to communicate at all. At that time, this gossip and rejection dynamics had a double impact: raising my interest on the role of science in industrial issue; but also being very tiring because it took me time to understand what was happening and it was affectively costly.



In September of 2016, one colleague, who had never met me, said to another colleague who had involved me in a project: "Have you heard of her reputation?". At that moment, I could see a reaction emerge and circulate with close colleagues answering (approximately) that one should look at my work before saying anything. Interestingly, two years later, my name is still associated to a "partial" person: the director of the company Alteo reacted negatively to my name in front of the Prefect in a Comitee involving scientists, administrative representative and activists. This comity is the one constituted to follow the improvement of the depollution by the plant and to solve public issue. My name was given because I am at the moment an expert checking the elaboration of a study about worries in the population, made by the regional agency for health.

#### 2.4 Disqualification: why it occurred and consequences

The assumption I have to explain the apparition of this reputation is linked to the structure of the field study I led. Since the activists' main claim was to be recognized, I was immediately appreciated. Although I would declare I had no power in the decision process, I was indeed recognizing them by my presence and interest, focusing especially on what they knew and how they could explain things, and even their proposals for the future of the plant. I immediately got some "success" which was rather unusual compared to other field studies. When the activist network was still rather strong, I got cell numbers from many of them, and was introduced to many people. I got recommendation for meeting X or Y who was a specialist of one of the aspects of the pollution history. This did not last, but was a very strong relational dynamics at the beginning of the field, and starter right away to produce doubt about my research. As said before the activists eventually broke down their alliance, partly (from my point of view) because of a very basic male ego fight – only the advocates and elected bodies were female - all other genuine activists I met were men (until I found one female after some weeks of active research). Being a woman in this context was certainly not threatening (and thus can in some aspects be an advantage) (Fournier, 2006). It is possible to guess that seen from outside, without any interest in the details of the research, I could seem to be too well integrated among the activists.

Another assumption is: those disseminating bad reputation were also those who were judged of being on the side of the industrial company by activists and other scientist during my interviews. Two of them had been following the evolution of the plant (either on the evolution of depollution devices or the pollution in the sea) for at least a decade without signalling any problem. One had already used disqualification on other female colleagues: this was known by some activists and increased the general distrust about the scientific arena. In this "group" of scientists, one did criticized a colleague of being "irresponsible" because he had identified and expressed in front of the press a rather problematic conflict of interest concerning the public inquiry that could cause distrust among the inhabitants – refusing to wonder if the situation could indeed be defined as a conflict of interest, he just condemned the analyst. One of them had expressed in a conference the idea that there was no problem linked anymore since the "muds" were not thrown in the sea - "it is now a historic problem, not contemporary anymore", which was very shocking for a part of the audience.

Although these people were part of the Scientific Council of the Park, they never asked for a sociological pre-study in parallel to chemical analysis. So there can be two interpretations: either they seemed legitimate to frame the issue on their own, without further sociologic study than a few discussions. This situation had been running for years: they might have felt my field study as a voluntary contradiction to their knowledge and central position in the problem. This, of course, I discovered along my work.

Whatever the reasons for this circulation of gossip, it transformed my spirit on the field. In a positive way, it forced me to a more serious reflection on the building of local interdisciplinary spaces, and this was made a bit easier because I was within the system (Faulkner and Becker, 2006) – I thus tried to understand which networks were creating relative legitimacy of people and how co-optation was working. I could understand a bit better how the imaginaries were created, and in particular what interdisciplinarity had to do with this. In particular, when only one social scientist is present in an interdisciplinary committee, it seems obvious that he/she can declare many things and pretend to objectivity, without any contradiction to be raised. In a negative way it made me much more irascible and less resistant to remarks and I lost part of my neutrality since the simple evocation of some people were really making me cross, and thus unable to think properly. I also had to find ways to connect to colleagues who would recognize my work, so as to check that I was not doing as bad as was pointed out.

One other aspect is the loss of time. Since the accusation was of using wrong methods, being not enough professional for the job, and being partial, I tried to meet the accusing individuals I had identified to explain what I was doing and why I had diverged of my initial route in the project. The time spent in an attempt of pacification was thus not negligible, but was a total loss since no one accepted to meet me. This had an impact in return on my state of mind, which stayed rather shocked, and thus blocked for some time.

It took me some time to decide to just drop my field research for some time, as it was just creating a bit more chaos in a complex situation. Instead of building a game for creating a participation space, I eventually made a game for education of children and teenagers. I also postponed the circulation of the information I had gathered, which means that my "knowledge", although created, got stored without having any use, although it could have informed what participatory sciences would consider as a arena of confrontation.

### 3. Implication for participatory sciences

There are several aspects that can again be underlined following the description of the problem of disqualification made by scientists in this context.

In a very direct manner, a participatory research is of course ruined as soon as the legitimacy of the researcher starts to be questioned. In these works, the researcher needs to propose modalities of interactions, as well as an intermediary object for discussion. Both are the result of the work of the scientist, either his/her choice for interacting method and the choices made for the model. However strict in the co-construction and the organization to produce neutrality in the synthesis of points of view, it is very little credible that the modelling that is proposed by a scientist will be recognized as "neutral". Thus if the scientist is publicly disqualified, all the research process looses in its social support. It has much more chances not to take place at all.

There is one particularity of field study that is particularly salient in action-research and thus participatory science, which is the fact that the situation that is studied is in general evolving rather quickly, and pushes to adapt the research a lot. When discussing social relations for example, one can see that roles, influences, power relations are unstable: new emerging patterns are of interest for a process of collective intelligence (action) as well as for the analysis of human and social laws (research). This type a research is classically the one where the initial and final research questions of a project diverge. This implies that one has to be alert and flexible in the perception and analysis of events, which a priori requires a certain state of mind, on the side of relaxation, openness and accurate sensitivity to others (Favret-Saada, 2009). Disqualification, this very common French passion (as shown by Laugier and Ogien (2017) about the use of populism), has very strong impacts on the emotions of the person who is disqualified and reduces the ability and freedom of thought. This posture of research generally suffers when high levels of tension are present among the actors, but it is even more difficult to be adaptive when hostility is turned towards oneself, and that one feels the need to justify its action. It is even easy to doubt of one's own abilities, even if only for periods of time, which can put an halt in the construction of a project.

The problem in this type of conflicting field work is that it is easier to get opinions than facts, and that each discourse is already heavily orientated towards an interpretation. In our operational perspective (Tsoukias et al., 2013), it is necessary to understand where arguments come from and how they articulate to possible demonstration - be them scientific or coming from every day experience. The understanding of the complexity of interviewees representations implies to be able to communication with other disciplines and other scientists who can propose other points of view and analysis of the same setting. When being ostracized, it is much harder to get good communication conditions with colleagues, with an open attitude that enables to argue positively, since defiance has to be overcome first. One method is then to create trust among an alternative group of colleagues who also work on the same topic – which is not easy since research is nowadays very specialized and few colleagues are really working on the same topic and in the same local community. Thus, the constitution of a sub-network where trust is vivid and enables good discussions is a long-term work. Again, this makes the collection of information and analysis of the situation much longer to make.

As a meta-level and in the long run, although the participatory process is necessarily deeply affected, the situation of public disqualification of the scientist can also be seen as a "mise en abyme", and thus reflexively reveal the main issues in the public situation that is analysed. As seen in the description of the case, the

occurrence of my own disqualification enabled me to spot the process, and then observe this disqualification tendency circulate within the system. The mechanism behind the survival of the disqualification in time was also rather clear: the refusal of direct confrontation so as to expose and argue on the actual work (the content), which could leave those who refused confrontation with their interpretative speech, relying on light evidences. This systematic avoidance in parallel with regular production of negative discourses, could be interpreted as a very efficient strategy to negate results that might be felt as disturbing (which can be assumed unconscious). We get back to the idea that negating instead of discussing is an efficient way to preserve status quo, as is observed by environmental justice theorists (Allen, 2003). The possibility to discuss in a setting where everyone is protected of asymmetries of power and network support could be one way forward so as to avoid, in academic world, the type of ignorance producing trap in which this community seems to have navigated for some months. Such an institution could also seriously reduce resentment.

#### 4. Conclusion

This paper shows how public expression of personal points of view by scientists can cause problems in the context of an old environmental conflict. Some people who were considered as experts, actually did take this opportunity to frame scientifically the issues at stake without having actually worked to be able to justify their point. The methods of communication, including gossip, created a tension that reduced the ability to realize that the framing was rather illegitimate from a scientific point of view, and that it also had consequences in relation to administrative bodies. More than two years after the situation that is described in the paper, the mix between science and politics is still very vivid, but few usable information or data have been produced in the aim of decision-aiding. The prefect asked in 2018 for a study on the grievance of the inhabitants - the protocol will be constructed as for April 2018 and should be stabilized in July 2018. This means that at least two years have been wasted between the initial project aiming at gathering the information about people's representations and the recognition by administration that this study needs to be led.

The frontier between engagement and activism is a very strongly discussed topic when it comes to environmental and health, but is mainly put forward by those who are engaged in the « normal » political process (following French administrative rules) without ever making a single critic of the way the process should or at least could alternatively be led. The lack of protected spaces of discussion within the academic world, where a guarantee for deep and complex exchanges would be constructed, is striking in this type of context. Disqualification such as the one many researchers who oppose the main stream could certainly be reduced if Universities were willing to produce higher level knowledge. The Seralini case, with a criticized demonstration of potential dangers of GMO in food (Seralini et al. 2012) could be prototypical: his public disqualification has not led to a reasonable exchange of arguments on the question of methodologies of proof, although it could have been an excellent occasion, and ends up in polarization of discourse that add little if not nothing to a very central political issue. But only strong state institution can impose a dialog that is not desired but sub-networks of scientists, whatever their aim is when they refuse an open dispute. One could refer to ethical committees when thinking of this institution, as it could be considered as an essential ethic of science to accept dialog. It could also be considered as an institution that goes in the sense of more democracy, as any place of public confrontation of opposing view where each speaker is considered as equal and only arguments and proofs are judged, can be interpreted in this direction.

#### **Note on the evolution at the end of 2019, start of 2020 -**

*In 2018-2019 the Prefect eventually asked for a study by a paid expert (around 35000 euros) to assess for the worries and speeches of the population. (which was more or less the work I was trying to do and was prevented to do by the colleagues, as I let down the research while facing too much aggressiveness and refusals).*

*In July 2019, the strategy of Alteo was to close several of their plants in France, and to open (or buy) one large plant in Asia.*

*In December 2019, this was translated in a loss in demand for speciality alumina, and pushed Alteo to ask for a "redressement judiciaire" because it could not pay its debts anymore. In France, this usually translates in the closing of the factory. This was one of the proposals made by the people I had interviewed in the course of my research, which colleagues cited in the text refused to hear – they accused me of being an activist because I was relaying this worry – now translated in reality.*

*The feeling related to these events (as feelings are important in this misconducts' processes and their impacts) is one of deep bitterness and some despise against the whole academic institution, and a certain despair while facing series of events that were easy to anticipate.*

*I think in particular of "environmental research" made by natural scientists, who pretend to be neutral, as they are just lacking all political aspects of the issues, thus providing time and space for industries to pollute, use public money as they wish, and leave a territory to pollute other spaces when their financial interest is at stake. The only issue that is standing now is: who will pay to protect populations from the pollution (and "public money" is certainly the answer).*

*This scenario is not one of paranoid activist; it is well documented in history over the last decades of what is called "financial capitalism".*

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