



HAL
open science

Behind the French controversy over the medical treatment of Covid-19: The role of the drug industry

Laurent Mucchielli

► **To cite this version:**

Laurent Mucchielli. Behind the French controversy over the medical treatment of Covid-19: The role of the drug industry. The Australian and New Zealand journal of sociology, 2020, 10.1177/1440783320936740 . halshs-02872021

HAL Id: halshs-02872021

<https://shs.hal.science/halshs-02872021v1>

Submitted on 25 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Behind the French controversy over the medical treatment of Covid- 19: The role of the drug industry

Laurent Mucchielli

Aix Marseille Univ, CNRS, LAMES, Aix-en-Provence, France



Laboratoire méditerranéen de sociologie
UMR 7305 - Aix Marseille Université - CNRS
Maison méditerranéenne des sciences de l'homme
5 rue du Château de l'Horloge, BP 647
13094 Aix-en-Provence
<http://lames.cnrs.fr>

Behind the French controversy over the medical treatment of Covid-19: The role of the drug industry

Journal of Sociology

1–9

© The Author(s) 2020

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/1440783320936740

journals.sagepub.com/home/jos

Laurent Mucchielli

Aix-Marseille University, France

Abstract

This article explores the stakes of the very intense controversy that has developed in France around the medical treatment of Covid-19 (which finds some parallels in the United States of America). It centres on the therapeutic proposal of a Marseilles doctor, who has become a very divisive ‘star’ in public debates over the efficacy of treatment. The author shows that competition between this doctor’s proposal and the commercial hopes of a major pharmaceutical company plays an important role. This company has managed to create links of interest with many other major doctors, some of whom are at the heart of the decision-making process concerning the management of the health crisis. Finally, the author places this episode within the broader question of the hold the drug industry has on scientific production within the medical field. The interdependence between health authorities and the pharmaceutical industry is anything but healthy. The Covid-19 debate conforms to a well-worn pattern of behaviour: public backlash over the transgressions of wealthy corporate actors, government regulatory responses insisting on greater levels of transparency, corporate circumvention of said regulations, resulting in the continuation of fraud and corruption.

Keywords

Covid-19, drug industry, French public debate, influence peddling, scientific production; therapeutics

Introduction: the COVID-19 medical controversy in France

In times of crisis, the leaders of major industrial groups are redoubling their efforts on several fronts at once: they are trying to win over consumers, increase the productivity of their employees, neutralize dissenters, and find new products to conquer markets. The pharmaceutical industry is proving exceptionally effective in this game, as it remains powerful despite the economic turmoil, repeated scandals, loss of patents, groping scientific research and particularly unfavourable public opinion. (Ravelli 2015: 7)

In France, the question of the medical treatment of Covid has given rise to intense controversy over the personality of a famous virologist, Professor Didier Raoult, who

Corresponding author:

Laurent Mucchielli, National Centre for Scientific Research (CNRS), Laboratoire Méditerranéen de Sociologie, Aix-Marseille University, Aix-en-Provence, France.

Email: mucchielli@msh.univ-aix.fr

heads the Institut Hospitalo-Universitaire Méditerranée Infection in Marseille (Mucchielli, 2020). As in the United States, this polemic contains political aspects, because Raoult has been labelled a 'right-wing man' by the intellectual elites and journalists of the capital (Paris). The polemic has also taken on a personal dimension because of the singular personality of this man (unconventional, often provocative and willing to express himself on social networks) and the way the media have treated the subject. But, with a certain naivety, almost all commentators on the public debate are unaware that probably the most important aspect of the cleavages that Professor Raoult has created in the decision-making bodies of the Ministry of Health is of a completely different nature. Raoult offers a treatment based on old, off-patent drugs, which cost almost nothing. He is thus subjecting to terrible competition a patented drug (Remdesivir), manufactured by the American pharmaceutical giant Gilead Sciences, for whom the Covid crisis is a potential financial godsend. However, over the last 10 years or so, this corporation has developed a strong strategy of influence peddling and many members of the public authorities are in a potential conflict of interest situation. Research undertaken by investigative journalists and citizens' initiatives (whistle-blowers) makes it possible to understand this.

Big pharma's influence on medical knowledge production

With nearly US \$1200 billion in sales in 2019, a threefold increase since the beginning of the 21st century, the pharmaceutical industry has become one of the largest industrial sectors in the world and perhaps the most profitable of all over the last 30 years (Abecassis and Coutinet, 2018; Observatoire Français des Multinationales, 2018). The large pharmaceutical groups that have formed over the last few decades are now competing with the oil industry, banking groups, GAFAs (Google, Amazon, Facebook, Apple), the luxury goods industry, the automobile industry and cigarette manufacturers. They are among the multinationals that dominate the world and impose their interests upon it. They develop the same profit maximization strategies as most of these multinationals (takeovers, redundancies in the countries of origin, relocation to poor countries, price gouging, tax evasion, intense lobbying, use of public aid for their benefit, etc.).

The world drug market is dominated mainly by four countries: the United States (Pfizer, Merck, Eli Lilly, AbbVie, Amgen, Gilead Sciences, Johnson & Johnson), Switzerland (Novartis, Roche), France (Sanofi) and Great Britain (GlaxoSmithKline, AstraZeneca). The bosses of these firms are among the best paid in the world (for example, €10 million for the Sanofi boss in 2017; see Petitjean, 2018). Listed on the stock exchange, they are strongly involved in financial market developments and the dividends they pay out to their shareholders are among the highest in the world (nearly \$1 trillion in profits over the last 10 years). They have therefore become a central player in the new financial capitalism dominating the planet (Montalban, 2011).

These very large groups not only dominate the global drug market, but are also increasingly influencing medical research. Clinical trials are financed and carried out overwhelmingly by them, sometimes at the request of national agencies such as the Food and Drug Administration in the USA. It is in this political-industrial movement that evidence-based medicine and its statistical methods of randomization have been established, giving the illusion of a mathematical demonstration that cannot be falsified (Capraş et al., 2019).¹ The principle is to substitute statistical calculation for clinical experience, mathematical demonstration for medical practice. An increasing number of doctor-researchers can thus multiply publications on diseases and drugs, even when they

no longer see patients or practise medicine. Laboratories pay them for studies to test drugs. They determine the protocols and even pay several thousand euros per patient included in their studies (Bégaud, 2020). They also organize ‘boards’ and other ‘strategic meetings’ in which physicians are involved in determining laboratory projects and for which the same physicians are frequently paid €1500 a day. The laboratories finance travel and all hotel and catering expenses of these physician-researchers (several thousand euros each time) so that they can present their results at international symposia, the overall organization of which is itself largely financed by the laboratories. In some cases, industrial groups go so far as to carry out the studies themselves in their laboratories and then propose to more or less renowned university doctors that they sign their names to them. Over the last 30 years, this so-called ‘ghost-writing’ has given rise to numerous frauds and practices that are dangerous to public health (see, for example, Lacasse and Leo, 2010; McHenry, 2012).

Contrary to popular belief, it is not only second-rate authors and journals, but also the world’s most prestigious scientific journals that are implicated in this corruption of science. For example, in 2009, Dr Marcia Angell, the former publisher of the American *New England Journal of Medicine (NEJM)* wrote:

it is simply no longer possible to believe much of the clinical research that is published, or to rely on the judgment of trusted physicians or authoritative medical guidelines. I take no pleasure in this conclusion, which I reached slowly and reluctantly over my two decades as an editor of *The NEJM*. (Angell, 2009)

And in 2015, the scientific editor of the equally prestigious British medical journal *The Lancet* wrote:

The case against science is straightforward: much of the scientific literature, perhaps half, may simply be untrue. Afflicted by studies with small sample sizes, tiny effects, invalid exploratory analyses, and flagrant conflicts of interest, together with an obsession for pursuing fashionable trends of dubious importance, science has taken a turn towards darkness. [...] The apparent endemicity of bad research behaviour is alarming. In their quest for telling a compelling story, scientists too often sculpt data to fit their preferred theory of the world. Or they retrofit hypotheses to fit their data. Journal editors deserve their fair share of criticism too. We aid and abet the worst behaviours. Our acquiescence to the impact factor fuels an unhealthy competition to win a place in a select few journals. Our love of ‘significance’ pollutes the literature with many a statistical fairy-tale. (Horton, 2015: 1380)

In France, a few years ago, the collective ‘Regards citoyens’ (created in 2009)² carefully examined the government website ‘Transparence Santé’ created after the Mediator scandal.³ They unearthed the existence of 2.5 million gifts made between January 2012 and June 2014 by laboratories, mainly to doctors, for a total amount of approximately €245 million. Let us be clear: this is an organized system of influence peddling (Light et al., 2013).

The price of influence, the cost of treatment

For the pharmaceutical industry, the control of scientific production in the world of medical research is only one element of their overall information control strategy. Incredible as it may seem, this strategy is first expressed in the pharmaceutical companies’ stranglehold on the continuing education that is compulsory for doctors. This long-standing practice was made official in France in November 2006, when the Minister

of Health at the time (Xavier Bertrand) signed an agreement and a code of good practice with the union of pharmaceutical companies (Les Entreprises du Médicament, LEEM). This agreement was strongly denounced at the time by Form Indep, an association fighting against ‘interference by commercial interests or administrative injunctions in medical training and information, as well as in the healthcare chain’ (Form Indep, 2006). This strategy naturally extends into a very intense lobbying campaign aimed at elected representatives and national and international government agencies regulating public health (Horel, 2018). In France, the High Authority for the Transparency of Public Life (HATVP) lists these lobbying activities. It reports, for example, that the LEEM, representing 266 pharmaceutical laboratories or companies from around the world, spent nearly €1 million on official lobbying in France in 2018.⁴ In 2019, the Gilead Sciences group employed four people and spent between €400,000 and €500,000 on its lobbying activities with French parliamentarians alone. And, this is only a small part of Gilead’s overall strategy of influence. In total, Gilead is estimated to have spent \$65 million over the last seven years to establish its influence in France, both with practitioners and institutions (Verhaeghe, 2020a). Thanks to the Euro for Docs website,⁵ the distribution of these tens of millions of euros spent by the laboratory can be examined much more easily. Unsurprisingly, the bulk of the funds went to (1) doctors (most of whom expressed opposition to Raoult in the media), (2) organizations for the initial or continuing training of health professionals, (3) the media, (4) academies, foundations, learned societies and advisory bodies.

What is Gilead? This American group employs nearly 12,000 people and had sales of \$22.5 billion in 2019.⁶ Its shareholders include some of the largest US investment funds. The first is Vanguard Group, a direct competitor of Black Rock (the world’s largest asset manager and one of the largest shareholders in the CAC40, a benchmark French stock market index). Vanguard is also the largest shareholder of Apple and owns 5% of Amazon (and has invested in a number of large French companies). The same goes for Gilead’s second largest shareholder, Capital Research and Management. So here we are at the heart of today’s financial capitalism and its American domination.

Gilead offers an antiviral drug to treat Covid: Remdesivir. The laboratory has been working on it since the Ebola virus epidemic that ravaged West Africa during 2014 and 2015. Faced with the current pandemic, the challenge for Gilead is to convince people that its new molecule is much more effective than hydroxychloroquine (a very old antimalarial drug) and azithromycin (a bactericidal antibiotic), which is Raoult’s preferred protocol. However, there is one major difference: hydroxychloroquine has long since fallen into the public domain, so any manufacturer can make generics of it and sell them all over the world (this is what the generic giant Mylan has already announced; see Viudez, 2020). In France, a box of Plaquenil (hydroxychloroquine) sold at around €2.20 in January 2020. The price of Remdesivir is unknown at this time, but the drug is patented. It is only known that the basic production of the molecule it uses costs about 12 times more than that of hydroxychloroquine (Hill et al., 2020). It is also a much more expensive intravenous injection and a longer treatment. As a result, the Institute for Clinical and Economic Review (ICER) estimates the break-even point for this drug is about \$4,500 per treatment (Liu, 2020). Enough to earn billions more with Covid, especially since Gilead is known to practise greedy price gouging for maximum enrichment.

Just over five years ago (November 2014) Gilead launched a drug called Sovaldi on the hepatitis C market. And while its manufacturing cost would be between €100 and €200, Sovaldi would cost from at least 1 to 100 times more, depending on the wealth of the countries with which the laboratory was negotiating. In France, the treatment will be

sold by Gilead for up to €42,000 per patient. Finally, in less than three years, it will have cost the French health insurance system more than €700 million. This makes it one of the most expensive drugs in the history of this public insurance system (Gouin, 2017). However, the political and health authorities had plenty of time to think about it before making the purchase. In 2013, the Minister of Health (Marisol Touraine) had commissioned a report on the case from Professor Dhumeaux who had links of interest with Gilead (Pesty, 2015).

In the end, in the space of three years (2014–16), Gilead amassed nearly \$44 billion in accumulated net profit – an unexpected windfall that moved this group from 40th to 6th place in the economic ranking of pharmaceutical companies.

Demonizing Raoult, supporting Gilead: the small world governing the crisis

The health governance of the Covid crisis is a very complex political-administrative network. It involves bodies directly dependent on the Ministry of Health such as: the High Council for Public Health (HCSP) and the National Public Health Agency (ANSP), independent public authorities such as the High Authority for Health (HAS), public establishments such as the National Agency for the Safety of Medicines and Health Products (ANSM), the National Institute for Health and Medical Research (INSERM), and public interest groups such as the National Cancer Institute. Four sets of players interact in a global regulatory logic marked by New Public Management:

1. professionals (especially doctors);
2. public managers;
3. market players (pharmaceutical companies, insurance companies, etc.);
4. political leaders (Contandriopoulos, 2008; Pierru, 2013).

Given the cumbersome nature of this bureaucracy, in the face of the Covid crisis and the need to make decisions in a hurry, the President of the Republic decided to create a ‘Scientific Council’ (CS-COVID) on 11 March 2020, then a ‘Committee for Analysis, Research and Expertise’ (CARE) on 24 March, to advise the government on health and therapeutic choices. In less than two weeks, the space in which decisions take place has therefore been considerably reduced. And in these small networks (about 10 people in both cases), links of interest can play an even greater role as they are no longer counterbalanced or controlled by other forces.

The influence of pharmaceutical companies is exerted within the working groups and places of expertise set up by the public authorities within public administrations. In one of the main working groups set up to examine the treatment of hepatitis C (mentioned earlier), the citizen vigilance groups were able to show that 12 of the 20 experts gathered had participated on Gilead Sciences’ boards during the period when the recommendations that were to be made to the Minister of Health were being drawn up (Pesty, 2015). One of these key experts was Dr Yazdan Yazdanpanah (Head of the Infectious Diseases Department at Bichat Hospital, Paris), who currently happens to be a member of both CS-COVID and CARE. He is therefore one of the key players in the management of the Covid-19 crisis in France. He was also entrusted with the steering of the clinical trial called Discovery, launched by the government to allegedly decide on the best medical treatment for Covid (Ghaled et al., 2020). His links with Gilead are numerous and important. It can therefore be said

that official clinical trials ‘are conducted in France by a man who has received sums of money from the laboratories whose drugs are being tested’ (Verhaeghe, 2020b).

Still on the subject of the hepatitis C case, in 2013 Professor Dhumeaux was entrusted with the report on hepatitis C treatment on the recommendation of Jean-François Delfraissy, then director of the National Agency for Research on AIDS and Viral Hepatitis (ANRS), who also had links with Gilead (Pesty, 2015). But Delfraissy is none other than the current president of the CS-COVID ...

Yazdanpanah has been at the head of an important French research consortium (REACTing) on infectious diseases together with Delfraissy since 2014. Yazdanpanah is a member of both the Scientific Council and the CARE. And among the personalities involved to varying degrees in the governance of REACTing, there is also a sociologist, an epidemiologist, an expert on infection, a virologist and a medical officer who are all members of CS-COVID. It can therefore be said that this council is in reality almost an annex of REACTing, led by Delfraissy and Yazdanpanah. These two men organized their domination of these two councils by co-opting members of their network.

There is more. Yazdanpanah also heads a large thematic research institute of INSERM where he was appointed in 2017 by the director general of this public research organization, Dr Yves Lévy, who is none other than the husband of former Health Minister Agnès Buzyn, and who were both institutional opponents of Dr Raoult in previous years (Campion, 2020a).

Finally, after being appointed to CS-COVID because he is the most recognized French virologist in the world, Professor Raoult resigned after a few days because of his disagreements with this network. He was replaced by Dr Franck Chauvin, President of the High Council of Public Health (HCSP). This public agency notably houses an important ‘Specialized Commission on Infectious and Emerging Diseases’ whose president, vice-president and a third member all have strong links of interest with Gilead (Campion, 2020b). A few days before Dr Raoult was replaced by Dr Chauvin, the HCSP in turn recommended Gilead’s drug as the ‘only formalized treatment option’ for hospitalized patients (Demarti, 2020).

Conclusion

A few months before the emergence of the coronavirus, in a special issue of a review devoted to the French public health system, sociologist Boris Hauray (2019) felt that the creation of transparency tools had not resolved the crisis of confidence in the independence of the French health authorities vis-à-vis the pharmaceutical industry. He referred in particular to the Mediator crisis that had compromised the national drug agency. The least that can be said is that the Covid crisis has unfortunately completely confirmed this diagnosis. In my view, the explanation lies in economic, political and legal processes that can be linked to the analysis of white-collar crime (Mucchielli, 2018), and which sociologists have also highlighted in the case of environmental crime (Mucchielli and Salle, 2019). In regulating the behaviour of political elites as well as the behaviour of industrialists after each scandal that arises in public debate, governments respond by voting a new law that increases the obligation of transparency. And, in the years that follow, it always appears that this new obligation gets circumvented, that fraud persists and that corruption is still at play.

Funding

The author received no financial support for the research, authorship, and/or publication of this article.

Notes

1. On scientific fraud and how to change the methods of calculation according to the results one wishes to obtain, see also Fanelli (2009).
2. See: <https://www.regardscitoyens.org/sunshine/>
3. Mediator was a drug manufactured since 1976 by the French pharmaceutical company Servier. The medical journal *Prescrire* revealed in 1997 that it presented a life-threatening danger but the drug was not withdrawn from sale until 2009, following several court complaints for fraud, manslaughter (at least 500 deaths) and corruption (Frachon, 2010). The case also revealed that corruption had spread to the national drug safety agency. The final trial began in September 2019 and was due to end in April 2020, but it was suspended because of the coronavirus outbreak.
4. See: <https://www.hatvp.fr/fiche-organisation/?organisation=784668543>
5. See: <https://www.eurosfordocs.fr>
6. See: <https://www.zonebourse.com/GILEAD-SCIENCES-4876/societe/>

References

- Abecassis, P. and N. Coutinet (2018) *Économie du médicament*. Paris: La Découverte.
- Angell, M. (2009) 'Drug Companies and Doctors: A Story of Corruption', *New York Review of Books*, 15 January.
- Bégaud, B. (2020) *La France, malade du médicament*. Paris: Éditions de l'Observatoire.
- Campion, E. (2020a) 'Didier Raoult et le milieu médical parisien: Histoire d'une détestation réciproque', *Marianne.net*, 26 March.
- Campion, E. (2020b) 'Ambiguïté gouvernementale, liens d'intérêts au sommet de l'Etat: Enquête sur la guerre secrète de la chloroquine', *Marianne.net*, 9 April.
- Capraş, R.D., A.E. Urda-Cimpean and S.D. Bolboaca (2019) 'Is Scientific Medical Literature Related to Endometriosis Treatment Evidence-based? A Systematic Review on Methodological Quality of Randomized Clinical Trials', *Medicina (Kaunas)* 55(7): 372–87.
- Contandriopoulos, A.-P. (2008) 'La gouvernance dans le domaine de la santé: Une régulation orientée par la performance', *Santé Publique* 20(2): 191–9.
- Demarti, C. (2020) 'COVID-19: En France, le remdesivir recommandé dans les formes graves', *Le Quotidien du médecin*, 11 March.
- Fanelli, D. (2009) 'How Many Scientists Fabricate and Falsify Research? A Systematic Review and Meta-analysis of Survey Data', *PLOS ONE* 4(5): e5738.
- Form Indep (2006) 'Le ministre de la santé livre la formation continue des Médecins à l'industrie pharmaceutique', 1 December, URL (consulted 6 June 2020) : <https://formindep.fr/le-ministre-de-la-sante-livre-la-formation-continue-des-medecins-a-lindustrie-pharmaceutique/>
- Frachon, I. (2010) *Mediator 150mg: Combien de morts?* Brest: Dialogues.
- Ghaled, J.-C., G. Maudrux, L. Mucchielli and J. Pollini (2020) 'Traitement du Covid-19 et protocole Raoult: Bilan provisoire des recherches', *Mediapart*, 28 April. URL (consulted 28 April 2020): <https://blogs.mediapart.fr/laurent-mucchielli/blog/280420/traitement-du-covid-19-et-protocole-raoult-bilan-provisoire-des-recherches>
- Gouin, S. (2017) 'Comment les labos amassent des fortunes grâce à des médicaments aux prix exorbitants', *Basta!*, 5 October.
- Hauray, B. (2019) 'Une médecine détournée? Influences industrielles et crise de confiance dans le domaine du médicament', *Mouvements* 98(2): 53–66.
- Hill, A., J. Wang, J. Levi, K. Heath and J. Fortunak (2020) 'Minimum costs to manufacture new treatments for COVID-19', *Journal of Virus Eradication* 6(2).
- Horel, S. (2018) *Lobbytomie: Comment les lobbies empoisonnent nos vies et la démocratie*. Paris: La Découverte.

- Horton, R. (2015) 'Offline: What Is Medicine's 5 Sigma?', *The Lancet* 385: 1380.
- Lacasse, J.R. and J. Leo (2010) 'Ghostwriting at Elite Academic Medical Centers in the United States', *PLoS Medicine* 7(2).
- Light, D.W., J. Lexchin and J.J. Darrow (2013) 'Institutional Corruption of Pharmaceuticals and the Myth of Safe and Effective Drugs', *Journal of Law and Medicine Ethics* 41(3): 590–600.
- Liu A (2020) 'Fair Price for Gilead's COVID-19 Med Remdesivir? \$4,460, Cost Watchdog Says', 4 May, URL (consulted 6 June 2020): <https://www.fiercepharma.com/marketing/gilead-s-covid-19-therapy-remdesivir-worth-4-460-per-course-says-pricing-watchdog>
- McHenry, L. (2012) 'On the Proposed Changes to the Credibility Gap in Industry-supported Biomedical Research: A Critical Evaluation', *Ethical Human Psychology and Psychiatry* 14(3): 156–61.
- Montalban, M. (2011) 'La financiarisation des *Big Pharma*: De l'insoutenable modèle *blockbuster* à son dépassement?', *Savoir/Agir* 16(2): 13–21.
- Mucchielli, L. (2018) *Sociologie de la délinquance*, 2nd edn. Paris: Armand Colin.
- Mucchielli, L. (2020) 'Que révèle l'affaire Raoult?', *Pratiques. Les cahiers de la médecine utopique* 91.
- Mucchielli, L. and G. Salle (2019) 'La criminalité environnementale: État des lieux et perspectives', *Déviance et Société* 4, special issue.
- Observatoire Français des Multinationales (2018) 'Pharma Papers: Lobbying and Megaprofits', URL (consulted 7 June 2020): <https://www.bastamag.net/webdocs/pharmapapers/>
- Pesty, F. (2015) 'Conflits d'intérêt en hépatologie', *FormIndep*, 15 June, URL (consulted 1 May 2020): <https://formindep.fr/conflits-interets-hepatologie>
- Petitjean, O. (2018) 'Les patrons du CAC40 ont gagné en moyenne 4.68 millions d'euros en 2017', Observatoire des multinationales, 8 June. URL (consulted 30 April 2020): <https://multinationales.org/Le-patron-moyen-du-CAC40-a-gagne-4-68-millions-d-euros-en-2017>
- Pierru, F. (2013) 'Bureaucratisation néolibérale de l'hôpital français et mobilisation de l'élite hospitalo-universitaire', pp. 203–30 in B. Hibou (ed.) *La Bureaucratisation néolibérale*. Paris, La Découverte.
- Ravelli, Q. (2015) *La Stratégie de la bactérie: Une enquête sur la fabrication d'une marchandise médicale*. Paris: Seuil.
- Verhaeghe, E. (2020a) 'L'affaire Didier Raoult est-elle une nouvelle affaire Black Rock?', *Le Courrier des stratèges*, 28 March.
- Verhaeghe, E. (2020b) 'Lacombe, Yazdanpanah, ces médecins du service public qui cachetonnent dans le privé', *Le Courrier des stratèges*, 30 March.
- Viudez, N. (2020) 'Covid-19: Mylan augmente sa production de chloroquine', Industrie Pharma, 23 March, URL (consulted 6 June 2020): <https://www.industriepharma.fr/covid-19-mylan-augmente-sa-production-de-chloroquine.109521>

Author biography

Laurent Mucchielli is a senior research fellow in Sociology at the Centre National de la Recherche Scientifique (CNRS), and professor at Aix-Marseille University. His main work concerns the sociology of crime, police and criminal justice, with a recent interest in white-collar crime, corporate crime and crime against the environment. He has published extensively in those fields for twenty years. <https://www.lames.cnrs.fr/spip.php?article10>